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«Inequality and financial development»

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Abstract

In the particular project is analyzed the inequality and financial development. The objective was to identify the inequality as a term and to analyze it in relation to the position of the term in specific states examined. The study focused on its theoretical part on specific variables on capital, education level, and demographic factors e.t.c. Variables that count the inequality and today affect the economic stability of the countries. Through this study, issues that are currently occupied by the global economy are recognized and addressed to them through study conclusions.

At the research level in the study, the researcher decided to examine two indexes, the Gini index and the labor measured in hours, the constructed model of the research was $G = a + b * L + \Sigma dti$.

The survey was conducted for the years 1991 to 2015 from the Index Mundi database for countries like USA, Austria, Belgium, France, Germany, Denmark, Switzerland, Greece, Ireland, Iceland, Turkey, Spain, Finland, Canada, Luxembourg, Norway, Netherlands, Portugal, Sweden, Italy, Japan, Australia, New Zealand, Mexico, Czech Republic, Korea, Poland, Hungary and Slovakia.

The final conclusion of the project was that as the total number of labor hour's increases then the inequalities among the population decline. This seems logical since it is more likely that the increase in total working hours will reduce the unemployment rate and therefore the inequalities among the top 5% of the population and the lower 5% of the population in the income scale and all other factors of the living conditions.

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Introduction

In the recent environment concerning the inequality and financial development, the expressed opinion is that the high growth rates are a condition for dealing with the aforementioned variables and also a mean in order to eliminate the income inequality and the social discrimination. The basic argument against this opinion is that the benefits from the high rates of economic growth, sooner or later, spread throughout the spectrum of the population and thus affecting all income groups (Prete, 2013, pp. 74-76).

The policies proposed as necessary to promote economic growth are also considered the tools to tackle poverty and to reduce income inequality. On the contrary the social policies of the governments are not acceptable, since they are considered as temporary solutions which cannot provide a permanent solution to inequality (Jerzmanowski and Nabar, 2013). Through the argument of conventional economic on inverse relationship between equality and efficiency allegedly the long-term consequences of such interventions will be difficult because of the disincentives in the behaviour of individuals regarding their participation in the labour market and increase efficiency (Jaumotte, Lall and Papageorgiou, 2013).

The basic objective in this study is the investigation of the relation between inequality and financial development. More specifically a theoretical analysis will be done concerning the indicators of inequality. Specifically all these indicators that attempt to measure inequality, poverty, discrimination, will be analysed. In addition to the theoretical background a practical analysis will be performed depending on specified variable that will be chosen in order to be export specific conclusions. The analysis will be focused on the OECD countries.

Regarding the structure of the present study, the first chapter will be present the two variables of the topic under study, inequality and economic growth. Initially, the analysis began with a reference to the World Bank's Povcal database, which constituted the basis for the data collection. Then a reference was made to income and inequality, to the relation between globalization and inequality, and to the phenomenon of poverty in today's globalization. The first chapter was completed with the liberalization of trade, economic transactions, technological progress and their relation to inequality and economic growth. Essentially, the chapter determined all the data that constituted the key elements of the analysis of the present study. The second chapter presented the literature part in which the 10 key analytic variables were studied, through which the relationship between growth and inequality was examined. The third chapter defined the methodology of the research, while the work concluded with the final findings from the entire study, namely from the theoretical and practical part.

Chapter 1st Introduction to inequality and financial development

For a long time, in all cultures of the world, technological progress and productivity growth had been the base of their growth, though the problem is that there is no equal distribution and increase of factors at global level. The increase in real income is estimated at only 50% with regular fluctuations and not in periods of war, invasions, epidemics or natural disasters. Technological and productive inequalities combined with difficulty in wealth create global inequalities. Today the only way for someone to become rich is for someone else to become poor. Therefore, there is the phenomenon where the rich gain dominance at the expense of the poor.

From the industrial revolution onwards there has been a development in terms of productivity, technology and overall wealth produced, both per capita and in total. The real income increased up to 22.2 times in Western Europe in the period 1600-2013 and 21.7 in Greece. The Third World also experienced income growth, though small but impressive (Atkinson and Bourguignon, 2014).

Rising productivity and prosperity started from Britain during the industrial revolution. So innovations originally spread in Western Europe with an impressive increase in revenue and then around the world, with significant economic benefits for the whole world. In conclusion we can say that thanks to the industrial revolution one country can become richer not at the expense of another. Over the years this has changed and, in general, population growth has led to inequality among peoples (Fosu, 2015).

1.1 World Bank – (evidence on income inequality and globalization)

This section examines the evidence on income inequality and globalization during the last two decades, and how they have evolved in all country income groups. Comparisons on income inequality between countries are generally characterized by problems of lack of reliability, lack of coverage and inconsistent methodology.

We rely on data from the last inequality database Povcal of the World Bank which was constructed by Chen and Ravallion (2004, 2007) for a large number of developing countries. This database uses a much more rigorous approach that filters personal income and consumption data for differences in quality compared with other databases commonly used, which are based on a more mechanical approach to combine data from multiple sources and which are somewhat less reliable for studies between countries.

The database is populated with data from the data of the Luxembourg Income Study base, which provides high quality coverage for advanced economies and the full sample obtained allows accurate comparisons within countries and between countries that are available elsewhere.

Given the constraints of data availability, the different analysis (Jaumotte, Lall and Papageorgiou, 2013; Menyah, Nazlioglu and Wolde-Rufael, 2014) uses inequality data based on surveys both for revenue and for expenditure. Mixing these two concepts provides a comparison of the levels of inequality between countries and regions that may be misleading.

In general, the Gini indices based on consumption tend to show less inequality and are more commonly used in developing countries where the highest self-employment rates in businesses

or in agriculture (where the income fluctuates throughout the year) makes the measurement of income difficult. Among other causes, lower measurements of consumption may result based on the inequality from consumption smoothing in terms of time and a higher level of measurement error on income (Ravallion and Chen, 1996; Meyer and Sullivan, 2006).

In comparing incomes and Gini indices based on consumption, meticulous attention is needed on concepts, definitions and details of the research methodology to improve the comparability and the Povcal database of the World Bank used for the construction of all the data goes further than other databases (Chen and Ravallion, 2004).

The database was created using primary data from national representative surveys with quite extensive definitions of income or consumption. There were attempts to ensure the comparability of the research within countries over time, although in many cases, the differences in the research methods could not be corrected and there were problems in the comparisons between countries and within countries. A portion of the data set obtained from an additional scrutiny and filtering of the Povcal database to further improve the consistency and comparability of income and consumption data (of course at the cost of loss of a significant amount of observations) (Deaton, 2013).

The Gini coefficient is defined as the ratio of cumulative shares of the population arranged according to the level of income, to the cumulative share of the total amount received. The value of the particular indicator is measured on a scale from 0 (complete equality) to 1 (full income inequality). In relation to the indicator and the recent measurements, there was a decrease between 1994 and 2015. During this period the indicator declined from 37.4% to 32.9%. This shows a relative

improvement in the level of economic inequalities, but this is not satisfactory given the time period. The economic inequality as expressed by the above two indicators (income distribution ratio (S80 / S20) in Quintiles of income and rate (Treeck, 2014).

1.2 Inequality and globalization

Based on the observed movements of the Gini coefficients, economic inequalities were reduced, but the problem is that this occurred only in developed countries while it increased in regions such as the developing Asia. On the contrary during the last two decades in emerging Europe, Latin America, in some sub-Saharan African countries, newly industrialized economies and advanced economies, it has fallen.

Among the largest advanced economies, inequality appears to have declined only in France, and between countries with big emerging markets, the trends are more diverse, with sharply rising inequality in China, little change in India and falling inequality in Brazil (Treeck, 2014).

Perhaps a more detailed picture of inequality is revealed by examining the income shares for different income groups of countries. Overall, the changes in income shares by quintile (successive subsets with each containing 20% of the population) in all income levels reflect the evidence on inequality of the Gini coefficients.

However, the evidence suggests that increasing Gini coefficients can largely be explained by the increase in the share of the richest quintile to the detriment of the middle quintile and poorest quintile (Liu, Liu and Zhang, 2016).

This converges with the idea that inequality has increased in the upper part of the distribution in more than 51 countries and

this was highlighted for the US by Autor, Katz and Kearney (2008) and the United Kingdom by Machin and Van Reenen (2007). Moreover, looking at the medium income levels of the quintiles, real per capita income has increased in almost all income groups and regions, even for the poorest quintiles. Therefore, for all income levels, the data show that in absolute terms the poor are not in a worse situation (with the exception of a few economies after the crisis) and in most cases they are in significantly better shape during the most recent globalization phase(Liu, Liu and Zhang,2016).

In short, two general facts emerge from the evidence. First, over the past two decades, income growth was positive for all quintiles in virtually all regions and all income groups during the recent period of globalization. At the same time however, the income inequality has increased, especially in countries with middle and high-income and to a lesser extent in low-income countries (Perkins et al., 2013).

The recent experience seems to be a clear change in the course of the general reduction of inequalities in the first half of the twentieth century, and the perception that the rapid growth in East Asia during the 1960s and 1970s was achieved while maintaining the inequality on low levels. It should be noted however that the comparison of inequality data across the decades is fraught with difficulties, given the numerous reservations about the accuracy of the data and the methodological comparability (Batabyal and Chowdhury, 2015).

1.2.1 Poverty

By poverty we refer to the economic situation characterized by a lack of sufficient resources for satisfying basic human needs. The threshold of basic needs that defines the

poverty line differs from country to country. Poverty is reduced to counting money and reflect the per capita availability of real economic resources of a country.

The concept of poverty can and is divided as follows (Martinez, 2014):

1. Absolute poverty: is the percentage of the population living on less than a certain level euros a day. The most popular statistical kind is the percentage of the population living on less than one euro (1 €) per day. The ideal level of absolute poverty is 0%.

2. Relative poverty: Is the part of the population has an income lower than a sum of the average income of the country (usually 50%). The relative poverty indicator used very often, but often misunderstood.

This is because most believe that the greater the relative poverty index of a country is the more poor, which contradicts the actual meaning of relative poverty indicator that shows the disparities in the country.

In the EU, the relative poverty is defined as the percentage of the population living on an income below 60% of median income in the country. In Greece this percentage exceeds 20%. The causes of poverty identified in the unequal distribution of income, changes in technology, the prejudices and racism, but also in the informal economy, depriving the state revenues for social development programs(Fosu, 2017).

Unemployment is also a major cause of poverty, especially when it is prolonged and respect older people, who have family obligations. The relationship between poverty and inequality is neither clear nor straightforward. Poverty and inequality are distinctive analytical concepts. They vary independently and are misleading over a point to address the relative index of the

other. The study of both closely associated with interesting economic and social change.

1.3 Trade liberalization, economic transparency and technological progress as mean of inequality and financial development

World trade, measured as the ratio of imports plus exports to GDP, has increased five times in real terms and its share in the world GDP rose from 36% to 55% during this period. A similar picture emerges when trade liberalization is measured using the tariff rates.

The trade integration was accelerated, as the former eastern bloc countries entered the global trading system and the development of Asia, one of the most closed areas in trade, gradually removed the barriers to trade. However, it is worth noting that all groups of emerging markets and developing countries, when grouped by income group (or region), have begun to reach or exceed the high-income countries to the liberation of trade, reflecting the broad convergence of the trade systems of low and middle income countries with the traditionally more liberalized trading systems used in advanced economies (Treeck, 2014).

The total cross-border financial assets have more than doubled, from 58% of world GDP in 1990 to 131% in 2014. The advanced economies are still the most economically integrated, but other areas of the world have shown a gradual increase of cross-border assets and liabilities position. However, measurements in the liberalization of capital accounts show a mixed picture, with developing economies to show minimal signs of convergence with more open capital account regimes in advanced economies, which continued to liberalize further

(Weil, 2015).

Simultaneously, the technological development, by the share capital of information and communication technologies (ICT) in the total capital share, has grown rapidly over the last 20 years at all income levels. This is very important in our analysis, as technological progress will play a key role in explaining much of the observed increase in inequality between countries. It is also important to note here that by recognizing that technology is interconnected with globalization, the ICT capital that is domestically produced is used to represent the technology in order to distinguish the two results. Obviously this does not make the measurement of globalization (trade, economic) to exclude the technology at all, but rather separates a large part of the technology which is approached through the ICT capital (Pogge, 2008).

1.4 Inequality within countries between countries

When addressing the issue of inequality, account should be taken not only of inequality within the countries themselves, but also of inequality between countries, which is reflected in the distinction of rich - poor or developed - least developed countries.

While in the 1960s and 1970s global inequality between countries has been a major concern for public debate, there has been a shift in recent decades: inequality between countries tends to decline as many large, less developed countries (eg China, India, Vietnam, Indonesia, etc.) have a much higher rate of economic growth than developed countries.

As a result, the gap between poor and rich countries is diminishing. However, this dynamic of reducing global

inequality coexists and is largely offset by increasing inequality within most states - and indeed developing countries. In other words, the population in China as a whole may be better off in 2015 than thirty years ago compared to the US population (reduction of transnational inequality) but the gap between the poor and the rich Chinese (the internal inequality) has risen sharply. These two opposing forces of reducing and increasing inequality are a very interesting aspect of the global economy at the beginning of the 21st century. Efforts have been made to study this phenomenon by constructing a Gini factor for the whole planet - as if it were a country (Bourguignon & Morrisson, 2002).

Trends are reflected in the Gini factor since the 19th century has seen a clear upward trend, largely due to the long distance of poor and wealthy countries, and has fallen since the late 20th century due to the rapid rise of China and other low-income.

In five developed economies, particularly in the US, and inequality has declined since the early 20th century, Beddoes (2012) has been increasing in recent years. This works as a counterpoint to Kuznets's perception of parasites that as long as one grows and enriches a country, inequality decreases. Many modern economists are studying this new inequality, and one of them, Piketty (2014), emphasizes in his analysis the importance of the distribution of wealth.

Chapter 2nd Theoretical schemes for the growth and inequality relationship

2.1 Kuznets model

The theoretical exploration of the relationship between economic growth and income inequality - and in particular how

the process of economic growth has an effect on inequality - has grown considerably since the mid-1950s, following the publication of Simon Kuznets (1955). Kuznets's theoretical argument is that income inequality grows in the early stages of growth, then stabilizes during the transition from agricultural / pre-industrial to the industrial economy, and decreases in later stages of growth. Thus, income inequality follows the course of an inverted U (Kuznets, 1955).

Kuznets started his analysis using various available data on income distribution in three developed economies of his time: the US, Great Britain and Germany. Based on these data, he noted that inequality in these countries seems to be characterized by long-term stability before it begins to decline after the First World War. At the same time, these countries were experiencing a steady rise in per capita GDP, leading Kuznets to the conclusion that in the advanced stages of economic growth inequality is stabilizing and then declining as the process of economic growth advances (Jha, 1996).

Kuznets initially characterized this finding as unexpected according to the then dominant perceptions for the following reasons: First, he considered that economic growth results in an accumulation of savings in the higher income scales and this increases inequality, since increased savings lead to the acquisition of assets by the most affluent individuals, further enhancing their future income. Secondly, economic growth is accompanied by the shift of the labor force from the agricultural to the industrial sector, which is characterized by higher inequality within it (Kuznets, 1955).

In order to interpret this unexpected finding, Kuznets pointed out three key factors that he believed they reverse the trend of inequality widening in the later stages of economic

growth. The first factor is related to the process of industrialization.

Kuznets explored the transition from the agricultural to the industrial sector (which is more unequal) in more detail, as this transition is directly linked to economic growth. In the early stages of economic growth, the industrial sector is still relatively limited. However, according to Kuznets, as industrialization continues and employment in industry is growing, inequality is growing at the same time (Ménard and Shirley, 2005).

This is because low paid jobs are quickly covered by economic migrants both domestic (from the agricultural sector) and foreign, expanding the income disparities with the best paid sections of the urban population. However, as the urban population stabilizes, the prospects to exploit economic opportunities and the political influence of the relatively lower income groups are getting higher, with the result that these groups are increasingly demanding larger shares of total income. In other words, there is a reduction in inequality in the industrial sector of the economy and, consequently, in the economy as a whole (Kuznets, 1955). Therefore, long-term economic growth has a positive effect on reducing inequality.

A second factor, according to Kuznets, concerns how growth affects the accumulation of savings in higher income groups. As he pointed out, in developed economies, a series of political and institutional interventions on taxation, inflation, interest rates, etc. limit the effects of this accumulation, thus reducing inequality. Moreover, inequality is also limited by the very nature of the free economy. Technological progress has the effect of creating new profitable sectors, where the marginal productivity of capital is higher. This means that the return on capital already invested in more traditional industries will tend

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to decrease, resulting in a reduction in inequality (Tam, 2008).

A third offsetting factor is the income generated in the service sector. As Kuznets argued, much of the high income does not come from returns of accumulated wealth, but from the income of entrepreneurs and professionals of the service sector. While revenue in the service sector tends to increase over time, the growth rate of higher income is lower than that of the lower ones, which contributes to reducing inequality.

It is worth noting that in the case of the developing countries, Kuznets argued that it is quite likely that they will not follow an inverted U course for two main reasons: Firstly, because he considered that the path to economic growth is more difficult to be achieved by the developing countries. This is because, in the upper income classes of the population, savings (which according to Kuznets lead to investment and growth) are lower than in the developed economies. In addition, any savings are likely to be channeled to developed economies, where funds can be invested more safely. Secondly, even if a growth path is achieved by these countries, the risk of political instability is greater because of the increase in inequality observed in the early stages of industrialization. This may disrupt the path towards a situation of higher growth and lower poverty (Son & Kakwani, 2008).

The model of Kuznets and the conclusions arising from it dominated the academic and political debate in the 1960s and 1970s. The assumptions of Kuznets were widely accepted, without any strong opposition at the theoretical or empirical level. The result was the prevailing view that economic growth through industrialization may have led to some increase in inequality in the early stages, but sooner or later this trend would be reversed and income disparities would be limited

(Moran, 2005).

The model of Kuznets was practically challenged in the 1980s, when several empirical studies have shown that the case for the existence of an inverted U could not be supported by the available data (Moran, 2005). At the same time, theoretical arguments began to develop that sought to highlight some weaknesses in the theoretical framework in which Kuznets was based.

Bourguignon (1990), for example, adopted a theoretical framework under which as the population moves from the agricultural to the industrial sector, the reduction of agricultural supply and the possible increase of their demand may increase their prices and, therefore, the income of those who remain in the agriculture sector. Meanwhile, he introduced within the industrial sector the distinction between workers and capitalists, whose incomes are derived from different sources. His analysis showed that the way in which growth effects inequality is quite more complex with respect to that described by Kuznets. Increasing inequality or not depends largely on how the elasticity of demand for agricultural products varies in terms of their price since the industrialization process progresses.

Anand and Kanbur (1993a), based on an earlier study by Robinson (1976), focused their attention to the case where the average income in the industrial sector and inequality within it are at a higher level than the average income and inequality in agriculture. Making use of alternative inequality indicators they showed that the relationship of economic growth and inequality can take the form of various functional forms, with different turning points - depending on the index used. Their analysis also showed that, if there is a continuous increase of the difference between the average income in the industrial and agricultural

sector it is likely that inequality is growing constantly as the growth process evolves, without the existence of a turning point where this trend is reversed - as assumed by Kuznets.

Interestingly, the recent study of Vicente and Borge (2000), showed among other things that the curve outlining the growth and inequality relationship can take a different form than that assumed by Kuznets, if one assumes a continuous narrowing of the difference between the average income in the agricultural sector and the income in the industry. More specifically, it is likely that the inverted U characterizes that relationship up to a certain point, but at a very sophisticated level of industrialization inequality rises again.

The existence of a positive relationship between growth and inequality in very advanced stages of growth is also supported by the theoretical arguments of Alderson and Nielsen (2002) and Moller et al. (2003). With reference to the increase in inequality in the US and other developed economies in recent decades, these authors point out that at the high stages of growth there are factors that reverse the downward trend of inequality, which Kuznets assumes.

They even consider that most of these factors are linked to globalization. Among other things, globalization increases the movement of capital for productive activities to countries with cheap labor, resulting in developed economies to improve their de-industrialization and the migration of labor from the industrial sector to the service sector.

Arguing that the services sector is characterized by lower wages and higher internal inequality in connection with the industrial, it is likely that income inequalities worsen, as a result of this development. Globalization connected with the introduction of cheap products from abroad and the influx of

migrants, who are cheap labor in the developed economies. These phenomena have the effect of reducing the bargaining power of workers in the various sectors of the economy and thus reduce their wages (Borjas, 1994).

Special reference needs to be made in the theoretical arguments of Korzeniewicz and Moran (2005), who emphasize the role of technological progress in the framework of a Schumpeterian growth process and creative destruction. They believe that such a process, which is characterized by constant technological changes and adjustments in the demand for labor, negatively affects the coexistence of high incomes and less inequality, leading to a sustained path towards higher inequality. At the same time they stressed that the controversial effectiveness of both the redistributive role of institutions and the market have resulted in a continuous tendency towards inequality, which depends on the space and the reference time, producing results that cannot be generalized in the relationship between growth and inequality.

It should however be noted that in contrast to the above studies there are several recent theoretical research, as part of often different theoretical arguments from those of Kuznets, which support the existence of an inverted U in the relationship between growth and inequality. A large part of these studies is based on the neoclassical view of growth. For example, Aghion and Bolton (1997) developed a theoretical framework that emphasizes the role of the borrowing costs in the dynamic evolution of inequality. In the early stages of growth, people with less accumulated wealth need to resort to borrowing to invest. But this decreases the return on investment than if they didn't have the need of borrowing, which creates disincentives for investment.

On the other hand, those who are in possession of more wealth can invest without making use of credit money, which increases the returns on their investments. Therefore, the richest invest more than the poor, and this intensifies the inequalities. Nevertheless, in the later stages of growth the vast accumulation of wealth from the latter will increase the available credit money by creating, according to the authors, a decline in the interest rate. As a consequence of this the cost of borrowing will reduce for the poorest and in this way their investments will increase with positive effects on the evolution of inequality.

Aghion et al. (1999) also focused on the study of inequality in incomes of skilled workers. They argue that technological innovations that often accompany economic growth create the conditions for the existence of an inverted U. Using a theoretical framework where employees are paid based on their productivity, they argue that a technological innovation initially increases inequality, since the productivity of workers who make use of this technology is higher than the productivity of those who are still using the older technology.

But this trend reverses with the increasing number of workers who make use of the new technology. This is because workers who continue to use the old technology are now less and therefore their productivity is increased by the existence of the diminishing marginal returns. This creates a convergence in productivity between the two groups of workers, which implies convergence of their wages.

Caselli and Ventura (2000) developed a theoretical model based on the previous work of Stiglitz (1969) and Chatterjee (1994). They assumed the existence of an economy where individuals (consumers) differ in their preferences, abilities and the initial wealth they have. Making certain assumptions about

the form of the production function and the preferences of individuals between current and future consumption, it shows that an increase in inequality may occur in the wealth in the early stages of accumulation, with this trend to be reversed and then forming an inverted U-shaped curve.

From the above it is evident that in recent years the theoretical model of Kuznets has lost the strength that characterized it during the decades of 1960 and 1970. The various theoretical considerations that have been developed by many researchers have shown that economic growth is likely to be associated with a series of developments that make its effect on inequality rather more complex than described by Kuznets in the model. Additionally, the characteristics of modern economies appear quite diversified than those of the economies of the Kuznets era. Thus, the a priori acceptance of the theoretical conclusions of Kuznets as the basis for the interpretation of contemporary inequalities is deemed particularly problematic today (Ray, 2009).

2.2 Theoretical forms and rhetoric for the relationship between economic growth and poverty

Theoretical Rationalities and Rhetoric for Growth and Poverty Relations The theoretical debate on the relationship between economic growth and poverty is largely related to the debate on the relationship between economic growth and inequality due to the link between inequality and poverty. However, it is important to note that in this discussion an important role is played by the way in which poverty is defined in each approach (Alderson and Nielsen, 2002)

For example, the conclusions that may be drawn from a theoretical argument for the relationship between economic

growth and poverty may vary significantly if the analysis focuses on the percentage of people living below a certain level of poverty (relative or absolute) , what if the analysis focuses on the average income of the poor (for example, those belonging to the highest quintile of the income distribution) (Assane and Grammy, 2003)

In the first case, poverty takes the form of a specific indicator of inequality, which makes the debate on the relationship between economic growth and poverty almost identical to the debate on the relationship between economic growth and inequality. In the second case, the link between poverty and inequality is less narrow, with the result that the debate on the relationship between growth and poverty is gaining more autonomy (Atkinson and Brandolini, 2009).

This section focuses on those approaches where poverty is basically defined on the average income of the poor, mainly because this definition is predominant in relevant theoretical quests. In this context, Kakwani et al. (2000) argue that economic growth is likely to have two opposite effects on poverty. There is a positive effect, linked to the increase in average income and which, given the distribution of income, proportionally increases the average income of the poor (Bleanay and Nishiyama, 2004).

At the same time, however, there is a negative impact: this is linked to the possible rise in inequality, which reduces the positive effects of growth on the income of the poor. Therefore, the extent to which growth will ultimately and in what direction growth will affect the average income of the poor depends largely on the effect it will have on inequality, especially on the inequality of the lower income strata of the population. In order to decide whether the growth has a sufficiently favorable impact

on poverty, there are two basic perspectives that can be adopted (Bourguignon, 2004).

One considers growth to be favorable to poverty when it only leads to its reduction through the increase in the income of the poor (Ravallion and Chen, 2003). The other adopts the growth-prone approach to poverty when income benefits to the poor are greater than the income benefits to the rich (see Son, 2004).

It is obvious that the first approach puts much less prerequisites in order to define growth as being favorable to poverty, since only the need for any unfavorable development in the distribution of income does not diminish the benefits of raising the average income. By contrast, based on the second approach, growth at the same time should not affect the distribution of income at the expense of the poor (Kakwani and Son, 2008).

Considering the above, it is clear that the theoretical schemes described in the previous sections on the relationship between growth and inequality can easily be the basis for exploring the relationship between economic growth and poverty. Generally speaking, the more the economic growth increases, the lesser the benefits will be to the poor (Korzeniewicz and Moran, 2005).

Whether - and to what extent - the negative impact on poverty of an increase in inequality can overcome the positive effects of an increase in average income is primarily the subject of empirical analyzes in which (using appropriate data) these effects are controlled; their relative importance is appreciated (see, for example, Kakwani and Son, 2008 and Son and Kakwani, 2008).

Focusing our attention on the arguments put forward in the

academic and public debate on the impact of economic growth on poverty, we could identify two basic perceptions. One perception has its roots in the rhythm of the "trickle-down effect," which dominated the debates of the 1950s and 1960s, on how developing countries could address the problem of poverty.

According to this theoretical approach, economic growth favors in its early stages the rich. But in the later stages, when the wealthy starts to spend their income, the benefits of growth diffuse to the poor. As a result, economic growth was considered a sufficient condition for poverty reduction, without the need for any governmental or other interventions (Arndt, 1983 and Kakwani et al., 2000 for a more detailed description of the relevant rhetoric).

The "trickle-down effect" approach began to be challenged in the early 1970s when it became clear that in some developing countries economic growth did not have a significant effect on poverty reduction. Although it has not been adequately verified empirically, the approach that considers economic growth to be the main and perhaps the only factor in poverty reduction continues to be reflected in the contemporary public debate on the issues concerned (Lombardo, 2009).

For example, in a study that had a significant impact on public and academic debate, Dollar and Kraay (2002) supported, based on their empirical findings, that economic growth favors the poor as well as the rest of the members of a society. Measures promoting economic growth should therefore be at the heart of policies to tackle poverty. Also, some researchers who have focused their analyzes on the US economy (Blank, 2000) have argued that economic growth is the most important factor in eradicating poverty. Indicative is the emphasis given to economic growth in the fight against poverty in most of the

National Action Plans (NAPs) and the National Strategic Report on Social Protection and Social Inclusion of most EU countries, as well as in the corresponding Joint Reports.

The opposite is the view that economic growth does not lead a priori to poverty reduction. It is argued that the effect of economic growth on poverty depends both on the way average income growth is achieved and on whether there are the necessary redistributive policies that will allow the poor to reap the benefits of growth.

For example, according to Iceland et al. (2005), if economic growth is linked to the increase in employment mainly in the higher income brackets, the benefits for the poor are reasonable not to be significant.

Freeman (2001) argues that, while economic growth and employment growth in general contribute to poverty reduction, people who suffer from poverty in the long run (due to their specific characteristics) are unlikely to benefit. Freeman (2003) also emphasizes that poverty reduction is less dependent on more general macroeconomic conditions than on improving the skills and level of education of the poorest sections of the population that will facilitate their participation in the labor market. Brady (2005) highlights the crucial role of redistributive policy in combating poverty, while Palme (2006) emphasizes the institutional characteristics of the welfare state and its correlation with poverty. In addition, Bourguignon (2004) emphasizes that the positive impact of economic growth on poverty is greater as the initial inequality is lower.

It also emphasizes the role of redistributive policies at both wealth and income levels. Finally, Osmani (2000) focuses on the need for policies to redistribute land and improve population literacy in order for growth to have a positive impact

on poverty reduction in developing economies.

2.3 Potential extenuatory variables

Per capita income is the income that corresponds on average to each inhabitant of a particular country, regardless of their participation in the production process. Alternatively, it is the entire gross domestic product of a country divided by the total population and is used as an indicator of the living standards. It is calculated as follows: Per capita income = Gross Domestic Income/Total population of the country. However, many economists do not consider it as an objective indicator since it does not take into account the distribution of income and any strong income inequalities and the ownership of assets that are employed for the production of part of the income (Bergstrand, 2013).

This variable was chosen given that the income represents the level of wealth in a particular country, but also in a particular group of people. In general, the income shows the degree of growth, though in some cases it may distort the true picture of wealth and development of a region. It is essential to determine where the income originates and whether it is the product of growth, labor, production or virtual prosperity (Bergstrand, 2013). In general, income is the basis for assessing the dynamics of a country and the standard of living of the citizens.

Continue with the analysis of the variables the next one is the educational level. It indicates the level of education of a population, a variable that can affect its level of development or the productivity and beyond its economic prosperity.

The view that the objective of economic development of a country is directly related to education, a common assumption of economists. Many studies have been conducted in the past, led to

the conclusion that better educated a society is positively correlated with economic growth, particularly in countries with low education or productivity.

As has been observed between education and the economy is a process of continuous adjustments and intense interdependence. Therefore, changes in the functioning of the economy put in motion forces that fundamentally alter the nature of the training.

Conversely, new technologies derived from the educational system and its evolution, acting as a catalyst for economic relations. Without advanced education there is no advanced economy, but without a developed economy is not advanced education.

Certainly no economic and technological progress does not take place without the human factor. In economic terms, education is considered that: a) is a prerequisite for economic and social development b) allows the reduction of income inequalities and c) is essential in order to tackle unemployment, especially structural unemployment.

Thus, in developed economies, intellectual ability is far more important than the physical, the determination of the employee's salary and is the most important form of investment in human capital.

So, it is always timely reflection about whether the kind of training and education can influence the type of development or, conversely, what kind of development is that can determine the kind of education offered. Education belongs and simultaneously one of the driving forces of economic growth and focus of learning in society. It is at the same time place preservation and knowledge creation.

Moreover, it is the primary organ for the passage of the

accumulated experience, cultural and scientific, of humanity. Rapid quantitative and qualitative expansion of educational opportunities is the key to national development, and the degree of national development is an indicator of the quantitative and qualitative expansion of educational opportunities

The more and better education is provided, the more will be the development, and the more growth there is a nation, the more and better education will be provided. Without education, especially without technical education, there is no development, and without development is not guaranteed the conditions continuing modernization and growth of education.

The creation and accumulation of human capital through the acquisition of knowledge and the development of critical thinking, produced within the educational system. With the help of modern technology, the highest level of education means better level of human capital, better reception conditions and technology absorption and therefore greater potential growth of the product and service of the economic development objective.

The next variables are the Demographic Factors. The demographic factors refer to the data that characterize a whole market or a part of it. Specifically, they refer to gender, age, occupation, marital status, economic level, and lifestyle and are essentially related to each other variable per factor (Manzan, 2015). The demographic factors are directly linked to this issue, namely inequality and economic development.

In particular, and according to Manzan (2015), inequality is expressed through demographic data such as the economic level, the profession and specifically low income, unemployment, low educational attainment and the standard of living define the level of poverty, inequality and generally determine the low level of a people.

On the contrary, when the aforementioned are high, it is understood that the standard of living of the people is high, there is economic growth and inequality is reduced. Of course, inequalities are often found in economically strong countries, but they are of less intensity and size than in a country of low economic level and development.

These variables will help in calculating the economic development and inequality, and will lead to an understanding of the components that lead to these situations.

The next variable focus in the Level of development of the financial system. The primary function of the financial system is the transfer of capital from heterogeneous sources of savings to investors. The intermediary role of the banks in the economy, in addition to the mobilization of savings, is to collect and use information about the business environment and the economic outlook, and consequently, the in-depth analysis and better management of risk.

The development of the financial system contributes to economic growth. Moreover, it contributes to improving the productivity and efficiency of the financial sector, encourages savings and facilitates investments. In general, more developed financial systems have the ability to channel larger amounts of capital effectively from savers to investors. At the same time the financial system mitigates the risk of investment decisions and especially the liquidity risk(Hsu, Tian and Xu,2014).

Liquidity risk is the uncertainty of timely liquidation of an investment (e.g. a bond) when it cannot be sold quickly enough to prevent or mitigate a loss of capital. While an investment can be sold directly, an inefficient secondary purchase can prevent liquidation or reduce the funds generated by it. Some assets are very easy to liquidate with low risk (e.g. shares of public limited

companies), while others involve a high risk (real estate) (Hsu, Tian and Xu, 2014).

To continue with the next variable is the Share of workers in unions. To assert their rights, workers are organized in trade unions. At first, these unions were designed to create mutual funds for their members who were unemployed or weak to work. Soon, however, the unions expanded their objectives claiming the reduction of the working hours, increased wages, respect of personality and rights of workers and civil rights (right to vote and stand) for those without property(Ehrenberg and Smith,2016).

One of the issues that are at the heart of attention in recent years is the so-called problem of the de-industrialization of the Greek economy. The argument used by most, when referring to this term, is to reduce the specific weight of the industry in the formation of the GDP and employment. To define the concept of de-industrialization as much as possible, it is necessary to clarify the concepts of industry and industrialization (Gu and Zhang, 2014).

The industry is a form of organization of the productive forces of the society that has appeared at a certain stage of their development. Its main characteristic is that production takes place with the use of the machine system. Correspondingly, the industrialization is the development process of the mechanized production, with which the industry plays a leading role in the economy of a country.

The content of the term industry is not static, but varies with the industry itself, and evolves historically in line with the development of the productive forces. Therefore, this term is not limited to the manufacturing or generally the material production. It has a much broader meaning and encompasses all

those sectors in which the capitalist enterprises are active and where the salaried exploitation relationship is in force (Gu and Zhang, 2014).

Of course, many equate industrialization with the increase of the specific weight of the industry in the composition of the GDP. However, industrialization is not only the creation and development of the industry. It is also the application of modern mechanized production methods in all sectors of production (such as the agricultural sector or fisheries), the degree of substitutability of human work by machines, the degree of modernization and automation of production, the productivity of labor e.t.c(Alvaredo & Gasparini, 2013).

In this indicator the proxy status plays a prominent role. In particular, a company may be represented on a foreign market, which serves it in its entry, in the development of its strategy and generally in the processes that follow. Understanding foreign markets helps in the understanding of inequalities and enables companies to tackle them when entering a new market (Alvaredo & Gasparini, 2013).

Measuring the size of the public sector, in general, involves many difficulties, which stem from the complexity and uniqueness of the services the state provides to its citizens. The most common measure used in the economic literature is the level of public expenditure as a percentage of the GDP(Stiglitz and Rosengard,2015).

Related to the size of the public sector is the Government spending for social protection. This refers to the money that a government invests in social protection, namely insurance, health and generally anything that relates with the improvement of the living standards of its citizens. This indicator is unique and relates to the GDP, the unemployment, the level of

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education, the demographic data and the living standards (Desai and Rudra, 2016).

Continuing with is the unemployment. This indicator refers to the non-employment, namely it is the level of citizens in a country or globally who do not work or do not have permanent employment (Weiss,2014). Finally an additional indicator is the Imports from the least developed countries. This indicator refers to the imports of a country, namely what was imported, from where and how. This variable is related to all the variables, because it measures economic data and affects the wider economic development of a country, the unemployment rate, the GDP, etc(Abbas,2014).

Chapter 3$^{\text{rd}}$ Methodology

3.1 Introduction

The present chapter consist the methodological part of the project focusing in the practical analysis of the subject, focusing in the model analysis that the writer choose in order to develop the particular project. Depend on the referring that be done in the introduction the particular study investigate the relation between inequality and financial development.

More specifically on the one hand a theoretical analysis will be done concerning the indicators of inequality. Specifically all these indicators that attempt to measure inequality, poverty, discrimination, will be analysed. On the other hand except to the theoretical background a practical analysis will be performed depending on specified variable that will be chosen in order to be export specific conclusions. The analysis will be focused on the OECD countries.

As understandable through this methodological part the project will try to combine the financial development with the inequality, these variable as in the first part referred combined between them, there are specific difficulties in the combination of the variables, but it is very important the combined analysis because this connection is very important at the present environment concerning the inequality that exist between the different regions in the world. The economic situation is different and one can understand that in some countries the sustainable level is different and some times inside the country the sustainable level might be different.

The present project focus in this area of analysis trying to extract important conclusions concerning the combination of the two variables. In the next unit will be identified the model analysis concerning the used variables in its analysis, in order to

be understandable the way that the project will be analyzed in order to extract final conclusions.

3.1 Model

In order to investigate the research aim a linear model of the logarithmic differences of the indexes mentioned above was constructed. Therefore the following model was constructed: $G = a + b*L + \Sigma dti$

Where G is the Gini index, L the labor measured in hours and dt the dummy variables for all the years. The researcher has selected panel data since they are more informative, they have higher volatility, less multicollinearity among the variables, more degrees of freedom and higher efficiency (Baltagi, 1995).

The statistical model was calculated by using the GRETL software. The model that be used is the chosen for the needs of the particular analysis. The initial one is more analyzed, but the final chosen from the project depend on the variables, that the writer can find and analyzed.

The basic model option is identified from the following analysis: *"Gini and Povgap represent the Gini coefficient and the poverty gap, respectively. is the key explanatory vector that we are interested in; it covers the specific indicators of financial development: is expected to be negative[3] , which implies that higher financial development can lower inequality and poverty. is the log of GDP per capita used to control for the wealth effect, and we expect to be negative. Infl, Trade, and Gov are a set of control variables representing inflation, trade openness, and government size"*.

The chosen model through the chosen variables will cover

the project basic theme so chosen only the basic from the model that answer to the project objective. More specifically the Dti refer to income ratio variable important in order to be analyzed the economic situation of the citizens of the country. The a+b*L indices are widely known in corresponding analyzes and meet the basic properties that the inequality measurement indicators must have.

3.2 Sample

The survey was conducted for the years 1991 to 2015 from the Index Mundi database, for the following countries: USA, Austria, Belgium, France, Germany, Denmark, Switzerland, Greece, United Kingdom, Ireland, Iceland, Turkey, Spain, Finland, Canada, Luxembourg, Norway, Netherlands, Portugal, Sweden, Italy, Japan, Australia, New Zealand, Mexico, Czech Republic, Korea, Poland, Hungary and Slovakia. For each country two indexes were gathered, the Gini index and the labour. The Gini index measures the inequalities among the population and ranges from 0 to 100%. The labour index measures the total working hours (Appendix 1).

3.3 Results

Gini coefficient is an index that represents the income distribution of the population. Values close to 100% represent total income inequality and values close to zero represent total income equality. In this research the value of the index was 32.46% which represents a satisfactory income distribution of the population.

The linear model has a determination coefficient equal to

0.195 which means that 19.5% of the variability of the dependent variable can be explained from the independent variables. From the 28 strata units 7 were statistical significant. The group intersects were not equal (Welch $F(27, 80,0) = 67,4625$, with p-value= 2,29787e-044 and the Joint test on named repressors resulted that they were statistical significant [$F(1, 27) = 15,696$, with p-value = 0,00048955.

As it can be seen the coefficient of the labor variable was statistical significant ($b=-0.34$, $p=.0005$). This means that for 1 \$ increase of labor the Gini index decreases by 0.34%. Therefore, labor has a positive impact in the inequality of the income distribution of the population. It reduces the inequalities.

Conclusion

The view that high rates of growth alone can lead to poverty reduction and income inequality is still one of the dominant rhetoric in modern academic literature and public debate, with clear implications for the process of policy making and evaluation.

In the present study an overall assessment of both this view and the alternative approaches was made through the review of the relevant literature, which includes theoretical and empirical analyzes. At the level of theoretical arguments, a description of the basic assumptions and the assumptions officers on which the different views are based was made.

At the same time, the presentation of the alternative theoretical formations revealed specific weaknesses and specific constraints of the different approaches in this field. In addition, the review of the empirical analysis showed that the statistical analysis resulted that labor, the productive procedure measured

in labor hours, has a positive effect in the inequality of the income distribution of the population.

This means that when the total number of labor hours' increases then the inequalities among the population decrease. This seems very logical since it is more likely that the increase in the total labor hours to reduce the unemployment level and therefore the inequalities among the top 5% of the population and the lower 5% of the population in the income scale and all the other factors of the living conditions.

The findings of the studies are very diverse, depending on the reference population, the variables used and the analysis methodology applied. There are several researches in which an important role of GDP growth in the reduction of income inequalities and poverty is reflected, an attempt was made to show that development is not enough, on the contrary the basis is labor, it helps and leads to development all the layers of society.

At the same time, however, there is a large number of surveys where the existence of such a role is disputed, which is more evident when other interpretative factors of poverty and inequality, such as social transfers, labor market institutions and various macroeconomic variables, are included.

Moreover, it is particularly interesting that the impact of economic growth on poverty and inequality is quite different between different countries and / or groups of countries. On the basis of the above, it could be argued that it is more appropriate to treat economic growth as one of the many interpretative factors of income inequality and poverty, and not as a sufficient condition to deal with them.

The distributive role of growth should be seen in interaction with other factors in a country's social, economic and

political environment, such as the social protection system and policies, labor market institutions, the macroeconomic environment, etc. Exploring the interaction with these factors is crucial to understanding the impact of GDP changes in an economy on the phenomena of poverty and income inequality.

A dogmatic attachment to the view that the high rates of economic growth in modern societies can by themselves address income inequalities and poverty is more obscuring than contributing to a more meaningful understanding and combating of these phenomena.

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Appendices

Appendix 1

Table 1 -Predicting the Gini index using the labor for 30 countries

	Coefficient	Std. Error	t-Value	p-Value
const	32,8638	0,298260	110,2	2,27e-037 ***
ld_LABOR	−0,347884	0,0878091	−3,962	0,0005 ***
dt_2	−4,72463	2,54392	−1,857	0,0742 *
dt_3	−0,682593	0,426828	−1,599	0,1214

dt_4	−0,0653504	0,727828	−0,08979	0,9291	
dt_5	−1,25590	0,339614	−3,698	0,0010	***
dt_6	−1,36247	0,303495	−4,489	0,0001	***
dt_7	−0,998456	0,577732	−1,728	0,0954	*
dt_8	−1,30282	0,669860	−1,945	0,0623	*
dt_9	−1,30895	0,274255	−4,773	5,61e-05	***
dt_10	−0,305204	0,594322	−0,5135	0,6118	
dt_11	−1,30651	0,432805	−3,019	0,0055	***
dt_12	−0,359590	0,678665	−0,5298	0,6005	
dt_13	0,958125	0,715011	1,340	0,1914	
dt_14	0,0940652	0,513043	0,1833	0,8559	
dt_15	0,202462	0,441309	0,4588	0,6501	
dt_16	−0,468591	0,422091	−1,110	0,2767	
dt_17	−0,0213077	0,388377	−0,05486	0,9567	
dt_18	−0,293088	0,439907	−0,6663	0,5109	
dt_19	−0,581533	0,401448	−1,449	0,1590	
dt_20	−0,549184	0,414018	−1,326	0,1958	
dt_21	−0,499945	0,433960	−1,152	0,2594	
dt_22	−0,518026	0,529838	−0,9777	0,3369	