THE IMPACT OF INCOME INEQUALITY AND EDUCATIONAL INEQUALITY ON ECONOMIC GROWTH - A LITERARURE REVIEW

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Abstract
One of the most imperative long term political and economic challenges, inequality has always been a central topic among economists, politicians and researchers in the field. Inequality represents a defining issue for our time and a quotidian reality of the economic domain. Built on a review of the existing studies from the specialized literature the present research is an extension of our latest work "The relationship between inequality and economic growth – a survey of the literature". The aim of this article is to review the current state-of-knowledge on the impact of income inequality and educational inequality on economic growth. By using the methods of systematic and narrative literature review, state of the art review and by generating a synthesis of recent researches this paper presents theories, assumptions and assertions regarding the relationship between income inequality, educational inequality and economic growth. Existing studies from the specialized literature highlight different opinions regarding this topic. Most researches have focused on the relationship between income inequality and economic growth indicating on the one hand that income inequality is harmful for the development of a country and on the other hand that income inequality is favorable for the economic growth. A growing body of studies suggest that income inequality goes often together with inequalities in education, thus limiting economic growth.

Keywords: *economic growth, income inequality, educational inequality.*

Classification JEL*: D63, E25, O15, O40, I24.*

1. Introduction

In most European Union countries the gap between rich and poor has increased due to the financial crisis at his highest level. In a recent report of the European Commission (2017) inequality as well as high unemployment are presented as key concerns of the European Union because increasing inequality plunges millions more people into poverty. Eradication of extreme poverty and income growth of the bottom 40% of developing countries represent a key objective for global development for The World Bank Group (Brückner and Lederman, 2015).

Table no. 1. ***Inequality of income distribution in European Union (2015)***

Country	Inequality of income distribution	Country	Inequality of income distribution	Country	Inequality of income distribution
Austria	4.1%	Germany	4.8%	Poland	4.9%
Belgium	3.8%	Greece	6.5%	Portugal	6.0%
Bulgaria	7.1%	Hungary	4.3%	Romania	8.3%
Croatia	5.2%	Ireland	4.5%	Slovakia	3.5%
Cyprus	5.2%	Italy	5.8%	Slovenia	3.6%
Czech Republic	3.5%	Latvia	6.5%	Spain	6.9%
Denmark	4.1%	Lithuania	7.5%	Sweden	3.8%
Estonia	6.2%	Luxembourg	4.3%	United Kingdom	5.2%
Finland	3.6%	Malta	4.2%		
France	4.3%	Netherlands	3.8%		

Source: EUROSTAT

Romania is the country with the highest levels of income inequality in the European Union: "the richest 20% of the population have an income more than eight times higher than the European Union average" (European Commission, 2017).

Considering the Gini Index, which measures "the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution" (OECD, 2006), we can perceive the unequal distribution of income in European Union.

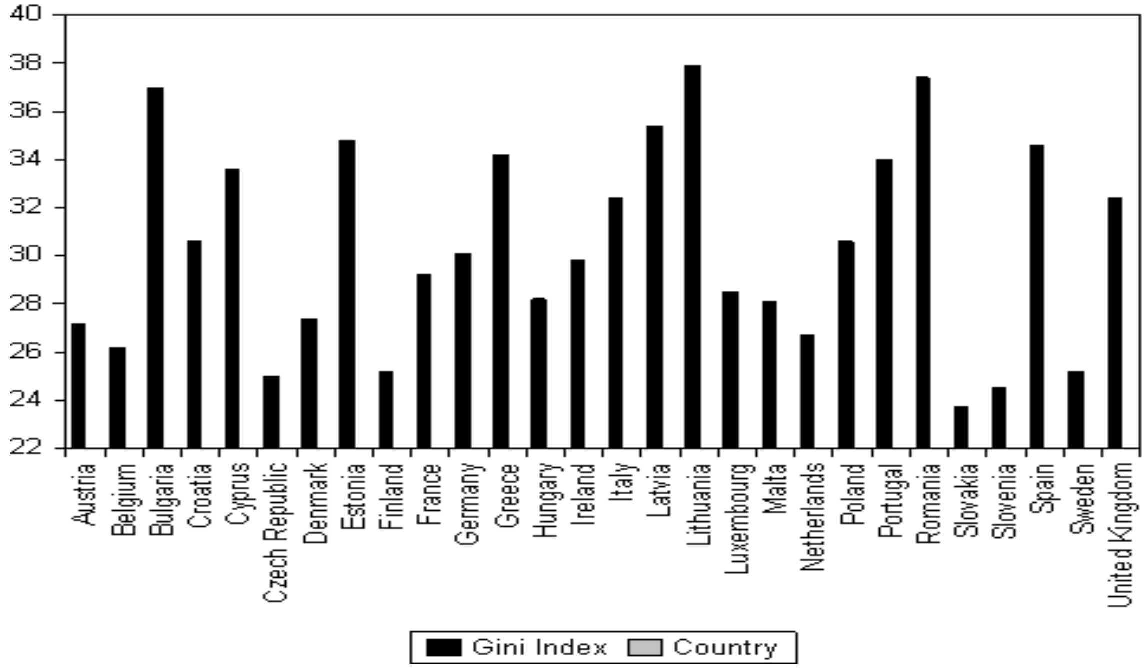

Figure no.1. ***Gini coefficient of equalized disposable income - EU-SILC survey 2015***
(Source: author's processing based on information provided by the EUROSTAT)

The value of Gini index in Romania was 37.4% in 2015. As the graph below shows, over the past 9 years this indicator reached a maximum value of 38.3% in 2007 and a minimum value of 33.5% in 2010 and 2011.

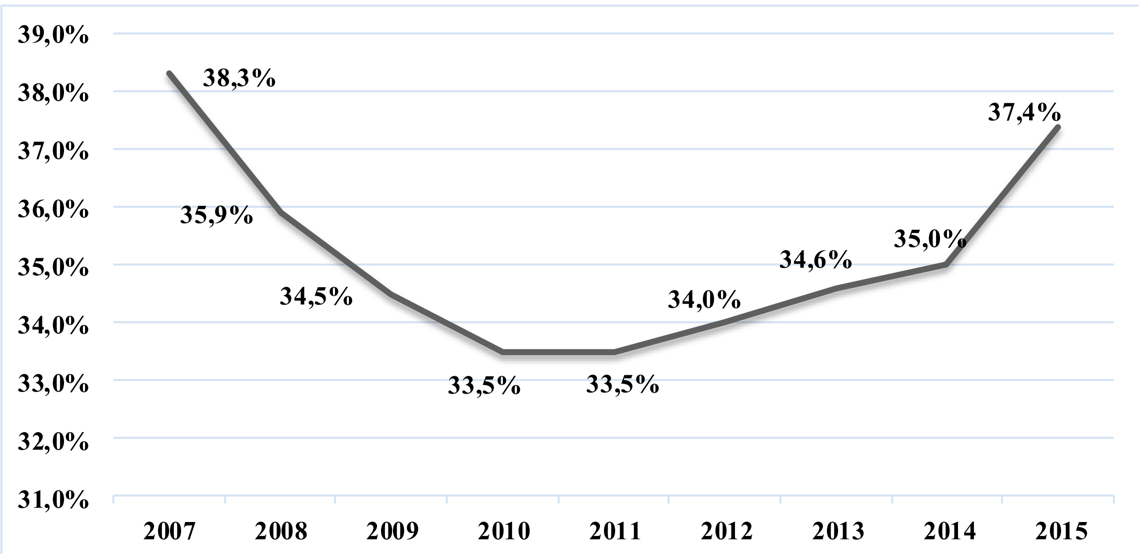

Figure.no.2. ***Gini Index in Romania during the period 2007-2015***
(Source: author's processing based on information provided by the EUROSTAT)

In order to understand the relationship between income inequality, educational inequality and economic growth we organized our paper as follows: section 2 presents a brief overview of the literature to determine the relationship between income inequality and economic growth, section 3 presents a brief overview of the literature to determine the relationship between educational inequality and economic growth and the last section contains the conclusions.

2. Income inequality and economic growth

The relationship between income inequality and economic growth has a long history in the specialized literature. Kuznets (1955) argued that "inequality within nations rises in the early stages of economic growth, becomes more pronounced at intermediate levels of development and decreases thereafter as countries became wealthy" (Kuznets, 1955). In his opinion only economic development and the need for redistribution could reduce inequality. Kuznets' inverted U-curve hypothesis can be indubitably considered as one of the most important statements ever made on inequality and development (Moran, 2005).

According to Akinci (2017) the inverted-U relationship between the development level of a country and its degree of income inequality, proposed by Kuznets in his famous paper "Economic growth and income inequality" has divided the researchers in two groups: the group who confirms the causal relationship between economic growth and income inequality and the group who refused the link between income inequality and economic growth.

Forbes (2000) estimated how changes in inequality were correlated with changes in growth suggesting that in the short and medium term, an increase in a country's level of income inequality could have a significant positive relationship with subsequent economic growth.

Barro (2000) considered that the theories which had been constructed to assess the macroeconomic relations between inequality and economic growth could be classified in four categories corresponding to the main feature stressed: "credit-market imperfections, political economy, social unrest and saving rates" (Barro, 2000). Using the panel data Barro showed that the effect of income inequality on economic growth was negative in countries with GDP per capita below 2000$ and was positive in countries with GDP per capita over 2000$.The conclusion of his study is that higher inequality tends to retard growth in poor countries and encourage growth in richer places.

Panizza (2002) used a cross-state panel for the United States to evaluate the relationship between income inequality and economic growth. The author used standard fixed effects and GMM estimations and he did not find evidence of a positive relationship between inequality and economic growth but found some evidence in support of a negative relationship between inequality and economic growth.

By using a stochastic optimal growth model Shin (2012) theoretically examined the relationship between income inequality and economic growth concluding that: income inequality had a negative effect on economic growth in the early stage of economic development and a positive effect on economic growth near a steady state; the income redistribution by high income tax does not always reduce income inequality.

In his paper Cingano (2014) identified three cases in which greater inequality might reduce growth and two cases in which greater inequality might increase growth. Greater inequality might reduce growth if: a. "greater inequality becomes unacceptable to voters, so they insist on higher taxation and regulation, or no longer trust business, and pro-business policies, all of which may reduce the incentives to invest; b. in presence of financial market imperfections, implying that the ability to invest of different individuals depends on their income or wealth level; c. if the adoption of advanced technologies depends on a minimum critical amount of domestic demand". Greater inequality might increase growth if: a. "high inequality provides the incentives to work harder invest and undertake risks to take advantage of high rates of return; b. higher inequality fosters aggregate savings, and therefore capital accumulation, because the rich have a lower propensity to consume."

One of the most important studies in the field of income inequality and economic growth was conducted by Piketty (2014). The famous book "Capital in the 21st century" is a book about the history of the distribution of income In Piketty's opinion "inequality is not an accident, but rather a feature of capitalism, and can only be reversed through state interventionism" (Cooper, 2014).

Wahiba and Weriemmi (2014) completed an empirical study on the Tunisian case over the period 1984-2011 to understand the nature of the relationship between income inequality and economic growth in Tunisia. The first result of the study showed that economic growth was an aggravating factor of inequality in Tunisia. The authors pointed out the role of human capital and financial development to the mitigation of this problem. The second result showed the negative effect of inequality on economic growth and they explained this results "by the fact that the country has reached an "unbearable" level of inequality by the failure of redistribution policies". (Wahiba and Weriemmi, 2014).

Rubin and Segal (2015) analyzed the relation between growth and income inequality in the US during the post-war years (1953–2008) concluding that growth and income inequality were positively associated but the growth rate was only one element that affects income distribution.

Nobel Prize-winning Stiglitz (2015) explained how US economic policies exacerbated inequality: "we could achieve more equality, but only at the expense of overall economic performance. It is now clear that, given the extremes of inequality being reached in many rich countries and the manner in which they have been generated, greater equality and improved economic performance are complements". (Stiglitz, 2015).

The relationship between income inequality and economic growth also represents a great topic for Romanian researchers. Molnar (2010) presented in her study the results of the measurement of Romanian households' income inequality during 1995-2008 years. By using a set of inequality indicators like Kuznets index, the Éltetö-Frigyes indices, the Gini coefficient, the Theil index, the Atkinson index, Molnar (2010) analyzed the income inequality in Romania and concluded that: 1. income inequality increased during the transition to the market economy; 2. the economic crisis had a negative impact on household income; 3. the social protection had an important contribution to the leveling of income distribution; 4. policies dedicated to increase and to improve employment, development of agriculture, equal opportunities to education are also factors that can contribute to reduce inequality in the long term.

Domnișoru (2014) tried to explain the drop in inequality by analyzing the gap between wage earners and individuals who were self-employed or contributing family workers. Based on the 2011 Romanian Household Budget Survey, Domnișoru showed the impact of social insurance and social protection transfers on the Gini coefficient.

Andrei and Crăciun (2015) presented particular models used to verify the relationship between growth and inequality: Islam's model based on "inverted-U" Kuznetz, the nonlinear model of income inequality by Barro (2000), Gregorio and Lee (2002), Alesina and Perotti (1996) system for the econometric estimation, etc.

Crețu (2016) tested two simple regression models demonstrating that: 1."income inequality has a negative influence on overall life satisfaction"; 2. a higher income inequality between counties. Crețu concluded that authorities needed to find solutions "to limit the expansion of this unfavorable phenomenon".

3. Educational inequality and economic growth

While realizing the importance of education for a country development, the present part of our research presents the relation between educational inequality and economic growth. Does educational inequality have positive or negative effects on the economic growth? Should countries invest more in education? Which are the conclusions of the existing studies from the specialized literature?

The paper of Hasan and Shahzad (2005) confirmed "the existence of a negative relationship between average schooling years and inequality in educational opportunities, along with a strong support for the existence of the Education Kuznets Curve both as time series and as a cross sectional phenomenon for Pakistan and its four provinces across gender domains".

Referring to educational inequality Tselios (2007) formulated the following hypotheses: educational inequality was positively affected by income per capita, by educational attainment and by income inequality. Rao and Jani (2008) using GDP as the dependent variable and regressing it with Gini coefficient of primary education and secondary education, showed which level of education inequality was significant in explaining the economic growth of a country. An equal and a quality education are the premises of the economic growth.

Digdowiseiso (2009) explained the relationship between education and economic growth by three channels: through technological progress, through incentives that should be taken into account as growth enhancing, through a life expectancy model. The econometric results of the study confirmed that economic growth "has strongly and significantly equalizing effect on the income distribution" and that investments in human capital contributed to the economic growth. The channels through which human capital inequality influences economic growth were also investigated by Castello-Climent (2010). Castelloo-Climent identified a demographic channel and a credit market imperfection channel. The demographic channels suggested that a "greater inequality in the distribution of education is related to greater fertility, lower life expectancy and lower rates of investment in human capital" Castello-Climent, 2010). According to the credit market imperfection channel a big number of individuals who were restricted on the financial market meant less investments in the economy.

Across Turkey's provinces education is an important factor which explains the variation of the economic growth (Gungor, 2010). By using educational attainment levels of the labor force the author determined the effect of education and education inequality on economic growth. The results of the study were the confirmation of a nonlinear relationship between educational inequality and economic growth.

Blanden and McNally (2015) examined the implications of educational inequality for economic growth concluding that in order to achieve higher economic growth it was important to increase average levels of education and to reduce educational inequality by focusing on the disadvantaged groups. They identified two different ways to reduce educational inequality: 1. the pursuit of the redistributive policies and the elimination of the institutional mechanisms that discriminate individuals with low income; 2. the use of the effective educational policies to improve the attainments of underprivileged individuals.

Shaher and others (2016) revealed the vital role of education for the economic growth: 1. higher investments in the education sector would offer better and educated youth for economic growth; 2. education reduces income inequality and poverty. The conclusion was that "the level of education should be raised to reduce income and social inequality for the national interest which becomes a catalyst for social change in the country" (Shaher and others, 2016).

In the Romanian literature there are few studies that analyze the relationship between educational inequality and economic growth. Danacica (2011) investigated the causal relation between school education and economic growth between 1985 and 2009. By using dynamic causality analytical methods, school enrolment ratio as a proxy for education and gross domestic product per capita as a proxy for economic growth in Romania, Danacica (2011) found that education had a significant and positive impact on the long-run growth in Romania. Zamfir and Mocanu (2016) also explored educational inequalities in Romania by analyzing the factors that explain differences in participation to education.

Precupetu and Precupetu (2009) consider that inequalities which characterize education in Romania were determined by: 1. income - although public education is tax free, income introduced a division between low income families and the rest of the population; 2. residence - rural/urban disparity; 3. ethnicity – problems in regard to participation in education faced by roma children, children coming from disadvantaged families, HIV infected or children with special educational needs.

4. Conclusions

Our study represents a first step into understanding more clearly how increasing income inequalities and educational inequalities affect economic growth. In more details, the literature review highlights different opinions regarding the relationship between income inequality, educational inequality and economic growth.

The conclusion of our study is that a relationship between economic growth and income inequality, economic growth and educational inequality remains a major issue among the economists and researchers in the field.

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