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## Article

# Income inequality shift paradigm: From economic approach to sharing responsibilities

Amfiteatru Economic Journal

## Provided in Cooperation with:

The Bucharest University of Economic Studies

*Suggested Citation:* Toma, Claudia-Andreea; Boboc, Cristina; Vasile, Valentina; Ghiță, Simona Ioana (2021) : Income inequality shift paradigm: From economic approach to sharing responsibilities, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 23, Iss. Special Issue No. 15, pp. 964-981, <https://doi.org/10.24818/EA/2021/S15/964>

This Version is available at:

<https://hdl.handle.net/10419/281612>

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**INCOME INEQUALITY SHIFT PARADIGM.  
FROM ECONOMIC APPROACH TO SHARING RESPONSIBILITIES**

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**Please cite this article as:**

Toma, C.A., Boboc, C., Vasile, V. and Ghiță, S.I., 2021. Income Inequality Shift Paradigm. From Economic Approach to Sharing Responsibilities. *Amfiteatru Economic*, 23(Special Issue No. 15), pp. 964-981.

**DOI: [10.24818/EA/2021/S15/964](https://doi.org/10.24818/EA/2021/S15/964)**

**Article History**

Received: 18 August 2021

Revised: 10 September 2021

Accepted: 5 October 2021

**Abstract**

This paper investigates the dynamics associated with inequality in EU member states. The variation of the Gini coefficient is analyzed from different perspectives: economic growth, certain macroeconomic variables, socio-demographic environment and historical, political and cultural environment. The use of the panel data regression model allows country specific effects control, the results showing that in the context of European convergence, the historical, political, cultural and socio-demographic factors have the greatest impact in terms of income distribution. Starting from the complex analysis of the evolution of inequalities in the last half century and from the experts' opinions regarding the relationship between the last two crises (from 2008 and the current pandemic), we notice important changes, there is a paradigm shift. The paper proposes a new approach to the economic growth paradigm, based on reversing the dynamics of income inequality in the 21st century and outlines our own vision on support policies to mitigate rising inequalities, in the context of designing a robust resilience strategy and sustainable post-pandemic development.

**Keywords:** Income inequality, Gini coefficient, Panel data regression

**JEL Classification:** O15, C23, J30

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## Introduction

The global income inequality level has become among most important political and academic topics, especially since the beginning of the millennium, data proving that the inequality rate has increased significantly mainly in the developed countries. At EU level the trend was similar – even if part of the increase in inequalities can be attributed to the enlargement process, the new member states having a lower level of development and a higher and more diverse degree of manifestation of inequalities, these have been accentuated within the richest member states (Bonesmo Fredriksen, 2012). From factor restricting growth (UN, 2005), inequality has become a priority issue of political debate, (UN, 2020) and an important challenge to reshape responsibilities and decreasing discrimination.

In recent years, organisations such as the International Monetary Fund, OECD, the World Economic Forum and the European Commission have analyzed the inequality phenomenon during the 2008 crisis, as well as before and after the crisis, with the purpose of strengthening fiscal strategies, the liberalization of the capital account or structural policies for the development of countries with below average incomes. The European Union income distribution has been analyzed both globally — using data grouped by income (Milanovic and Yitzhaki, 2002; Sala-i-Martin, 2006; Chotikapanich, 2007, 2012) — and separately, at country level (Toth and Medgyesi, 2011; Filairo, 2017).

Recent researches have also taken into account the dynamics of inequalities during the COVID-19 Crisis, with strongly differentiated developments by country, quite different from those during the 2008 crisis, which highlights the need to change the approach and management of inequalities. In fact, there is a need for a different vision, namely a paradigm shift, both in terms of content and main forms, but also in terms of the addressability of management policies, both as a factor and effect of change.

This requires at least two initial steps in research development - an analysis of the evolution of indicators that measure inequalities with an explanation of recent trends and then a critical analysis of sustainable and resilient development policy approaches, with the development of the inequality management component. Subsequently, an impact analysis of inequalities – as a factor and effect - and the consolidation of the multidimensional approach to their management is required. In this paper we focus the analysis on the first two steps mentioned, for the third not being the time needed to develop a counterfactual analysis. It is in fact the main limit of our research, but we will try to synthesize some of the results already measurable after about one and a half year of the pandemic, and we will develop and complete the analysis in future research. So, present research advances a comprehensive analysis of the income inequality evolution across the European Union, by using the Gini coefficient, by available income per equivalent adult, provided by the Eurostat database. We have employed panel regression models structured by factor type, on data from the 28 EU Member States, over a period of 19 years (from 2000 to 2018). Based on the analysis of the main results from the specialised literature, the study performs the grouping of the most important factors by category, in order to determine *which of them have the greatest impact on the income distribution*. Subsequently, we will develop a qualitative analysis of policy initiatives that have an impact on inequalities - on the cause and / or effect component - and we will complete the conclusions of the quantitative analysis by outlining our own vision on support policies to mitigate rising inequalities, a robust resilience strategy and sustainable post-pandemic development.

## 1. Review of the scientific literature

In the process of economic development, the income inequality remains one of the top topics at a global level that is disputed and analyzed by academics, economists and policy makers alike. Income is one of the core determinants of social stratification, and it is considered to be a major factor that influences the quality of life. The literature on economic inequality has evolved as a result of increasing interest in measuring and understanding the level, causes and evolution of income inequality, as well as the degree of monetary poverty currently faced by a certain percentage of the population.

Under the conditions of globalization and also of the regional convergence policy, the study of inequality requires a multidimensional approach, from the economic fundamentals to social inclusion and political intervention. In this context, INEQ – Helsinki Inequality Initiative, starting with the last decade of the 20<sup>th</sup> century, enhances an in-depth understanding of causes and consequences of intersecting inequalities, by three interrelated themes: recognition, representation and responsibility (University of Helsinki, 2020).

Nevertheless, Piketty's Third Law argues that the current level of inequality, although lower than in the last century, "is not socially acceptable, nor that it is economically efficient" (Piketty, 2014, 2015). Driving inequality is the main challenge of the present society and the main pillar remains the economic one.

Traditionally, income inequality has been analyzed as the difference between countries or in relation to an average value per region, highlighting the fact that the gap is larger in Europe than in OECD countries, but smaller than in the US (Bonesmo Fredriksen, 2012). In recent years, taking into account the 2020 Agenda, the Millennium Development Goals and, subsequently, the 2030 Agenda and the commitment to the Sustainable Development Goal on reducing inequalities (SDG 10), the issue of inequalities in the EU is also discussed from the perspective of individuals who operate on a single, globalized labor market, by combining aspects of economic and social integration (Filauro and Fischer, 2021). Facilitating safe migration and mobility for work and for the benefit of individuals and households is a key issue in reducing the growing income gap (Davies and Wooton, 1992; Vasile, 2014; UNDP, SDG 10).

Most studies have focused on discussing the causes of inequalities (OECD, 2011; Boboc et al., 2011, 2012; Vo et al., 2019; UNDESA, 2020), on the analysis of the correlation between inequality and macroeconomic indicators (Alvaredo et al., 2016; Piketty et al., 2018; Garbinti et al., 2018; Blanchet et al., 2019 etc.) or on intergenerational effects (Atkinson, 2015). Beyond the difficulties and methodological barriers for comparing inequality indicators (Blanchet, Chancel and Gethin, 2019) and the facilities of comparative analysis offered by international databases (UN-WIID, WB 2016, Eurostat etc) it is necessary to identify the dynamics of the phenomenon and the specificities of the conceptual evolution, the analysis of inequalities being important from the perspective of sustainable development, and reconsideration of gap reduction policies, including income redistribution policies.

Analyzing the evolution of inequalities in the last half century, some important changes could be noticed, taking place a paradigm shift. From an effect of increasingly globalized market policies, it has become a main cause of adjusting their functioning. Moreover, digitalization has highlighted the significance of the measure of inequalities in the context of labor market transformation, disruptive adaptation to the reformed labor model, labor profile and skills adapting to the incorporated technological progress (ILO, 2017).

Moreover, the pandemic crisis accelerated the transition to a predominantly hybrid labor market and underscored the need to reduce inequalities - as a factor and purpose of change, as a tool for building economic and social resilience “re-architect work; unleash the workforce; adapt the workplace” (Volini, Hatfield and Scoble, 2021).

Measuring inequality can be done in various forms, depending on the purpose pursued (Chakravarty, 1988; Litchfield, 1999; Cowell, 2009; Park, Kim and Heo, 2018). Studies show that the most important measures are the Gini coefficient, the ratio of income earned by the poorest 50%, 60%, 70% of households, the Robin Hood Index, the Atkinson Index and Theil's entropy (Heshmati, 2006). In case of comparisons that use country-by-country data, most inequality measures offer similar rankings. Moreover, studies show that the presented indexes are similar, a hypothesis which is supported by a correlation coefficient between 0.86 and 0.99 (De Maio, 2007). If we look at the perspective of policies and monitoring tools, the Gini coefficient is among the most used tools for measuring the evolution of inequalities. The range of inequalities is expanding and the measurement methods are developing, increasing the number of monitored indicators, the multi-purpose (Eurostat 2021 a, b) or composite. For example, the Gini index is recently used by experts to develop the analysis of inequalities based on a composite index of inequality that allows highlighting specific differences in comparative analysis between countries (Sitthiyot and Holasut, 2020).

In this paper we have chosen to use the GINI coefficient as a measure of income inequality. This coefficient is the most commonly used method of representing the degree of inequality in a country and is derived from the Lorenz curve. The Gini coefficient is equivalent to the normalized area between the Lorenz curve and the 45 degree line, divided by the total area below the line of perfect equality, with values ranging from 0 to 1.

Economic growth, mainly driven by productivity growth, plays an important role in the long-term evolution of population incomes. The first analysis of the relationship between inequality and development was carried out by economist and statistician Kuznets in 1955, who developed the Kuznets curve, which combines the effect of income differences and the economic evolution. The researcher stated that the growth of the industrial sector leads to a clear separation of average incomes between urban areas and rural areas, as the level of urbanization becomes a growth factor (Kuznets, 1955). Other authors have used panel regression models with fixed and dynamic effects, to support the hypothesis of economic inequality inversely correlated with increasing levels of economic development (Vo et al., 2019). According to a recent study, it has been shown that indicators such as the level of human development, taxes, migration, human rights, and the quality of the economic environment impose constraints on the labor market with different effects depending on the specifics of the country (Bilan, 2020).

The effects of macroeconomic factors on income inequality are also an important topic in economic literature with social and political implications. Although there are not many papers on the subject, some results can be observed. For example, using a dynamic panel regression model, Deyshappiriya (2017) demonstrated that inflation negatively affects the income of the low-income population, the benefits being obtained only by the very high-income population sector. Also, Faik (2012) showed that a reduction in the number of unemployed can increase inequality, as it moves from a segment of the population with uniform incomes, in the form of unemployment benefits, to a segment with heterogeneous incomes.

Most often, the researchers considers socio-demographics as being determining factors of income distribution. Demographics such as the age structure of the population, urbanization, household characteristics, education level or the health system are frequently analyzed in relation to income. According to the World Bank, the age structure of the population is one of the most representative features of a country in terms of inequality trend analysis (World Bank Reports, 2019).

Additionally, statisticians who have been researching the determinants of income distribution, have concluded that the skills and knowledge acquired from the education system have the greatest impact in reducing inequality. They question the continuous use of the rate of participation in education, especially regarding higher education, in relation to the income trend (Binatli, 2011).

Researchers in the economic field have identified various cultural and social features which are relevant for the analysis of economic phenomena interactions. Mushinski and Pickering (2020) have revealed that the economic transactions taking place on the market and affect the income distribution cannot be caused only by individual actions, but rather by activities that depend on the cultural context and the social organisation of the society (Mushinski and Pickering, 2000). Clarke, Xu and Zou (2003) have shown that in the case of an ethnically heterogenous population, residents are less concerned about differences in income levels, and thus those countries record the highest levels of inequality. Another hypothesis which has been confirmed by a panel regression model is the dependence of income inequality on religious traditions.

## **2. Research methodology**

Starting from the main determinants of income inequality reflected in the literature, this research aims to regroup and redefine these factors through statistical variables, and identify the category of factors with the most important impact on the dynamics of income inequality. The measure of income inequality is represented by the Gini coefficient, which is defined according to disposable income per equivalent adult before social transfers (pensions are excluded from this type of transfers). The advantage of using this indicator is that it allows the assessment of the dynamics of income inequality on the whole sample population, from an inclusive perspective, also allowing comparisons between countries with different population sizes. The disposable income per equivalent adult is calculated from the total income of a household, which is equated at the level of a single adult. The difference between this method of calculating the income and disposable income per inhabitant is represented by a weighting system, which considers that the same number of individuals will require a different income if they live in a shared household, compared to the assumption that they live separately (Bourguignon, 2017). Thus, by using a model that includes country-specific fixed effects with variations over time in the inequality coefficient, the econometric results gain value. The country's general development level is assessed by considering indicators related to employment in science and technology sector, financial development, urbanization degree and education. The macroeconomic context of a country is analyzed by variables that characterizes the GDP level, the inflation, unemployment of low-educated population, investments and government debt. Socio-demographic factors are analyzed through variables targeting aspects of social exclusion (poverty, school dropout), health, households or marital status.

In addition to these aspects, a historical, political and cultural component has been considered, assessing the corruption level, underground economy, democracy and cultural spending. The political factors are transposed through the components of a democracy index, which expresses the quality of a country's democracy, using a value from 0 to 100. This index is based on data regarding various aspects of the society, which are relevant in assessing the perception of human rights, citizen involvement in the political life, civil freedom and many others.

The databases previously used in the statistical analysis of income inequality dynamics were mainly provided by Eurostat, World Bank, World Inequality Database, The Economist Intelligence Unit (EIU) and The Global Economy. Moreover, there have been additional data sources, such as surveys, which had been conducted by the official statistical institutions of each state, statistical glossaries, and articles from the field of economics. In this paper the data set presents a panel structure, containing information about the 28 EU Member States, observed over 19 years, from 2000 to 2018. Table no. 1 presents the variables used in the analysis, and a brief description of them.

**Table no. 1. Variable description**

Variable	Definition	Unit of measurement	Source	Link
<i>GINI</i>	Gini coeff. by disposable income per adult-equivalent	%	Eurostat	<a href="http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>Q80_20</i>	80/20 income belt ratio	%	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>SCIENCE&amp;TECH</i>	% of employees in science and technology	% active pop.	Eurostat	<a href="http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>FINANCIAL_DEV</i>	Financial Development Index		EIU	<a href="https://www.eiu.com/n/campaigns/democracy-index-2020/">https://www.eiu.com/n/campaigns/democracy-index-2020/</a>
<i>URBAN</i>	Degree of urbanization	% pop.	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>EDUCATION</i>	Education Index		The Global Ec.	<a href="https://www.theglobaleconomy.com/rankings/education_prices_wb/">https://www.theglobaleconomy.com/rankings/education_prices_wb/</a>
<i>GDP_EURO</i>	Gross domestic product	Euro	Eurostat	<a href="https://ec.europa.eu/eurostat/databrowser/view/tec00001/default/table?lang=en">https://ec.europa.eu/eurostat/databrowser/view/tec00001/default/table?lang=en</a>
<i>INFLATION</i>	Rate of inflation relative to consumer prices	%	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>UNEMPL_PRIM_ED</i>	Population unemployment rate with primary education	%	Eurostat	<a href="http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>GUV_DEBT_GDP</i>	Governmental debt	% GDP	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>

Variable	Definition	Unit of measurement	Source	Link
<i>INVESTMENTS_EC</i>	Total investments in the economy	% GDP	World Bank	<a href="https://tcdata360.worldbank.org/indicators/inv.all.pct?country=BRA&amp;indicator=345&amp;viz=line_chart&amp;years=1980,2024">https://tcdata360.worldbank.org/indicators/inv.all.pct?country=BRA&amp;indicator=345&amp;viz=line_chart&amp;years=1980,2024</a>
<i>POVERTY</i>	Percentage of people at risk of poverty	%	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>MORTALITY</i>	Mortality rate of the adult population	%	Eurostat	<a href="https://ec.europa.eu/eurostat/databrowser/view/tgs00098/default/table?lang=en">https://ec.europa.eu/eurostat/databrowser/view/tgs00098/default/table?lang=en</a>
<i>VERY_GOOD_HEALTH</i>	Proportion of adult population assessing their health as very good	%	Eurostat	<a href="http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>LEAVING_ED</i>	% of population leaving the education system	%	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>HOUSEHOLD</i>	Average household size	People	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>MARRIAGE</i>	Marriage proportion	% pop.	Eurostat	<a href="http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>
<i>CORRUPTION</i>	Corruption control		The Global Ec.	<a href="https://www.theglobaleconomy.com/rankings/wb_corruption/">https://www.theglobaleconomy.com/rankings/wb_corruption/</a>
<i>UNDERGROUND_EC</i>	Underground economy	% GDP	The Global Ec.	<a href="https://www.theglobaleconomy.com/rankings/shadow_economy/European-union/">https://www.theglobaleconomy.com/rankings/shadow_economy/European-union/</a>
<i>PLURALISM</i>	Electoral pluralism index	%	<i>EIU</i>	<a href="https://www.eiu.com/n/campaigns/democracy-index-2020/">https://www.eiu.com/n/campaigns/democracy-index-2020/</a>
<i>GVERNANCE</i>	Governance index	%	<i>EIU</i>	<a href="https://www.eiu.com/n/campaigns/democracy-index-2020/">https://www.eiu.com/n/campaigns/democracy-index-2020/</a>
<i>POL_FREEDOM</i>	Political freedom index	%	<i>EIU</i>	<a href="https://www.eiu.com/n/campaigns/democracy-index-2020/">https://www.eiu.com/n/campaigns/democracy-index-2020/</a>
<i>POL_CULTURE</i>	Political Culture Index	%	<i>EIU</i>	<a href="https://www.eiu.com/n/campaigns/democracy-index-2020/">https://www.eiu.com/n/campaigns/democracy-index-2020/</a>
<i>CULTURAL_SERV</i>	Government spending on cultural services	% GDP	Eurostat	<a href="https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do">https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do</a>

The empirical study aims to explore the trends of income inequality for the 28 EU Member States, by comparing the econometric results obtained from the application of panel regression models, describing the influence factors on income inequality, grouped into four categories: economic development, macroeconomic factors, socio-demographic factors, and



historical, political and cultural factors. In order to determine the panel regression model that best explains the impact of the four factor categories on the GINI coefficient variation, three models have been tested: the simple regression model (OLS), the fixed effects model and the random effects model. Based on the Hausman test, the significance of the model parameters, the  $R^2$  coefficient of determination and the Akaike and Schwartz coefficients, the fixed effects regression model provided the best results in all analyses, as it takes into account both the country specific differences - of each EU Member State - and the evolution over a period of time of 19 years (2000-2018). The results are presented in Tableno. 2.

### 3. Findings and discussions

The use of the regression model for fixed-effect panel data allows the control of country-specific effects. Below are the results obtained to explain the impact of each category of variables that describe economic development, macroeconomic factors, socio-demographic factors and historical, political, cultural factors on income distribution.

- **Model explaining the effect of economic development on income inequality**

The first model (Table no. 2, Model 1) explains the link between income inequality and economic growth. An increase of employees in science and technology by 1% increases the Gini coefficient by 0.049% on average and 1% increase in the 80/20 ratio of income quantiles leads to a 3.14% average estimated increase in Gini coefficient. On the other hand, if the financial development index increases by 1%, inequality decreases on average by about 2.67%. Another negative influence is brought by the degree of urbanization, which produces a slight decrease of 0.08% of Gini coefficient and finally, a one-unit increase in the education index causes a 1.1% average estimated decrease in inequality. The hypothesis of the dependence of inequality on economic growth is also supported if defined models take into account whether countries are developed or developing. In the case of Romania, a convergence of income distribution at European level means a 2.3% reduction in the Gini index. However, the developed countries of Western, North and South Europe rely on the development level in order to reduce inequality and provide a higher living standard to the entire population (Figure no. 1, Model 1).

The increase in inequality is due to the existence of above-average wages in IT, which are well above other fields of activity such as agriculture, industry, etc. Moreover, with an increase in wealth of the 20% richest people in a state, while the other incomes remain constant, the income gap increases. Furthermore, economic development results in an improved living standard for each inhabitant, regardless of activity and implicitly of the annual income. A society which is educated, more informed and better prepared to enter the labor market, is a society with much higher incomes, compared to a similar society, but with a low level of education. Education gives each person the opportunity to live better and understand their rights under the law.

Table no. 2. Fixed-effects panel data regression model

Variable	Model 1	Model 2	Model 3	Model 4
C	22,31** (10,8)	17,02** (7,2)	32,97** (14,1)	63,83** (9,9)
SCIENCE&TECH	0,05** (4,0)			
Q80_20	3,14** (47,3)			
FINANCIAL_DEV	-2,67** (-3,5)			
URBAN	-0,09** (-3,1)			
EDUCATION	-1,11** (-2,9)			
LOG(GDP_EURO)		2,18** (4,8)		
INFLATION		-0,11** (-3,8)		
UNEMPL_PRIM_ED		0,11** (5,6)		
GUV_DEBT_GDP		-0,01** (-2,1)		
INVESTMENTS_EC		0,12** (3,5)		
POVERTY			0,73** (19,5)	
MORTALITY			0,03** (6,2)	
VERY_GOOD_HEALTH			-0,06** (-3,9)	
LEAVING_ED			0,06** (3,7)	
HOUSEHOLD			-6,62** (-6,9)	
MARRIAGE			-0,16** (-2,1)	
CORRUPTION				-1,52** (-3,2)
UNDERGROUND_EC				-0,13** (-4,5)
PLURALISM				-0,45** (-6,3)
GUVERNANCE				0,05** (2,6)
POL_FREEDOM				0,12** (4,0)
POL_CULTURE				-0,05** (-2,8)
CULTURAL_SERV				3,16** (3,8)
R <sup>2</sup>	0,98**	0,84**	0,91**	0,85
Adjusted R <sup>2</sup>	0,98**	0,83**	0,90**	0,84
Statistics F	725,72**	84,64**	151,17**	81,01**
Test Wald	873,33**	531,81**	937,4**	17,62**
Hausmann Test	24,89**	24,58**	31,27**	20,85**

Note: \*\* Significance level of 99%; In parentheses there is the calculated value of the “t” statistical test

• **Model explaining the effect of macroeconomic factors**

The second model (Table no. 2, Model 2) estimating the impact of fluctuations in macroeconomic characteristics on income inequality shows that 1% increase in GDP leads to an average estimated increase of Gini coefficient by 0.0218% and the increase of the inflation rate by one unit (1%) leads to an average estimated decrease of the Gini coefficient by 0.1%. Also, the increase in government debt leads to a decrease in the inequality indicator by 0.01%. On the other hand, the unemployment rate of the population with primary education is positively correlated with inequality, with the added value of Gini changing on average by 0.11%. Another positive influence is brought by the total investments in the economy, a 1% increase causing an average change of the dependent variable by 0.11%.

According to the fixed effects resulted from the model, if the macroeconomic characteristics would be more convergent, the countries in Eastern and Southern Europe would face increases in inequality values. On the other hand, Slovakia, Sweden, Finland and Slovenia would be able to further reduce their gaps between population incomes (Figure no. 1, model 2).

An increase in unemployment mainly affects the low-income population, leading to reduced wages and / or precarious employment, a conclusion that is also confirmed by other studies (Gramlik, 1974; Mincer, 1976; Mishel and Shierholz, 2011; OECD, 2020). Additionally, the economic development associated with the growth of GDP and economic investments is correlated with an increased income inequality. This hypothesis is specific to the economically developed countries, which experience an imbalance between the educated high-income population and the non-educated low-income population, among which are the immigrants attracted by these countries.

- **Model explaining the effect of socio-demographic factors**

The third model (Table no. 2, Model 3) shows that 1% increase in the At risk of poverty rate would lead to an average estimated increase of the Gini coefficient by 0.728% and an increase in the mortality rate by 1% conducts to an average increase in income inequality by 0.029%. Another factor that positively influences the income distribution is the percentage of the population outside the education system, an impact that leads to an increase of 0.06% of the income inequality indicator. On the other hand, the increase by one unit of the share of the population that evaluates as good their health decrease by 0.005% the value of the Gini index. Moreover, an increase in the average household size leads to a decrease in inequality of 6.619%, being the most important factor. The increase by one unit of the proportion of marriages also has a negative effect, producing a decrease of 0.157% of the Gini coefficient per adult-equivalent.

A uniformity of socio-demographics indicates that some of the countries most affected by increased inequality are Cyprus, Greece, Portugal and the United Kingdom. On the other hand, Sweden, Hungary and Germany would have a decrease in the income gap. Considering the case of Romania and Bulgaria, countries strongly affected by this phenomenon, the result of making the country-specific effects equal is a slight increase in inequality (Figure no. 1, model 3).

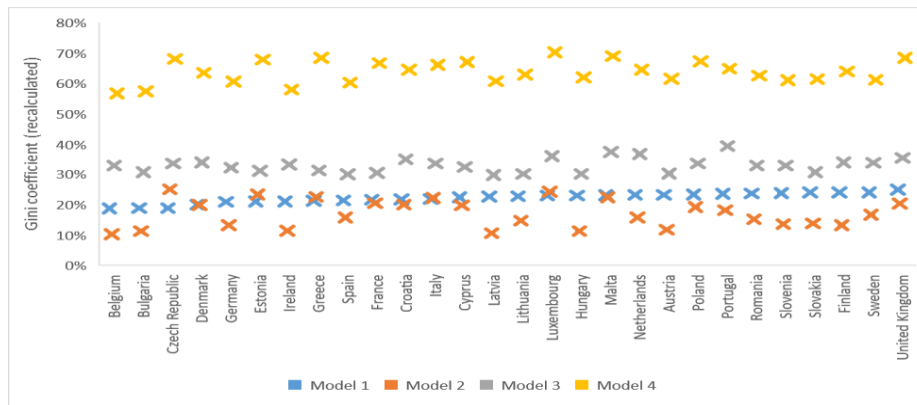
The third model proves that the impact of the socio-demographic environment is worth considering in government policies. Low-developed countries with a high risk of poverty face uneven income distribution. Additionally, the policies aimed at decreasing inequality must be focused on innovating the health system, because a healthier population is more than capable of entering the labor market and earning an above-average income.

- **Model explaining the effect of historical, political and cultural factors**

The fourth model (Table no. 2, Model 4) proves that the increase by 1% of the underground economy leads to an average decrease by 0.13% of the inequality indicator and an increase by 1% of the corruption control index determines a decrease by 1.52% on average of income inequality. Another negative influence is brought by the electoral index, because an increase of 1% of this index decreases the Gini coefficient by 0.45% on average and a 1% increase in the cultural policy index leads to an average decrease of the Gini coefficient by 0.04%. Furthermore, increasing the governance index by 1% leads to an increase in inequality by 0.05%. Another positive link is between political freedom index and the Gini index, the latter suffering an increase of 0.11% as a result of 1% increase in the political freedom index. The biggest influence is played by culture, the increase of government spending on culture by 1% leading to a 3.16% increase in the Gini coefficient per adult-equivalent.

The process of making the historical, political and cultural characteristics more evenly distributed has a beneficial impact on the phenomenon of inequality, in the countries that are

characterized by a small gap in the current incomes of the population. In the countries that are still in the economic development process, achieving a social balance is not enough to change the income inequality distribution. (Figure no. 1, model 4).



**Figure no. 1. Comparison of regression models according to the value of fixed effects**

The fourth model proves that societies characterized by efficient corruption control are societies often associated with low-income differences. In a less corrupt society, most of the population has access to the opportunities provided by the economic environment. Another interesting conclusion is given by the positive correlation between the underground economy and inequality. Although we would have expected that a society, heavily affected by income gained from illegal activities, would also be characterized by a large income gap, the evidence from the data indicates the contrary. This hypothesis could be explained by the fact that the underground economy is mainly a characteristic of developing countries, which have already faced an increased inequality due to a variety of factors.

Last but not least, it has been observed that the increase in government spending on culture affects inequality in a positive way. This hypothesis is explained by the fact that in some countries, access to culture is available mostly for a certain category of people. As a result of higher level of culture among the population, this category of people manages to obtain even higher incomes, while the category of population that had not benefited from this expenditure remains at the same wage level.

• **A qualitative approach on inequalities dynamics and perspective in Europe. Towards a new perspective on policy measures**

Inequalities in Europe are multidimensional and interdependent. Economic development has generated inequalities and has been based on inequalities. The relationship between economic inequalities and social inequalities is two-dimensional and is managed through public policies - from promoting equal opportunities to redistributing income and policies to combat the effects of inequalities. The last two crises - the 2008 crisis and the current pandemic - have highlighted that inequality management is one of the pillars of economic recovery and, recently, is defined as a component in building the resilience of society and the robust recovery of the labour market.

The typology of inequalities changes more slowly than the hierarchy of their importance for development - today, for example, the asymmetry of skills accentuates the exclusion on the labour market and digitalization facilitates the change of the labour model; income gaps facilitate labour mobility which made the labour demand on the market of the origin-country - chronic (e.g. employment in the health sector and the chronic shortage of doctors in the home countries); the increase in incomes from remittances increases the households' well-being, but does not support the real growth in the local economy, as the demand for imported products increases; economic growth is associated with increasing labour poverty; access to education as a source of reducing the future inequalities of individuals does not produce effects unless it is associated with ensuring the skills required by the labour market, etc. All these highlight the need for integrated cohesion policies through convergence – “inequality is the defining issue of our time” in which public policies “have become unresponsive” (FES 2021)

The COVID-19 crisis highlighted that the economies were not prepared for a new crisis, and the post-crisis recovery of 2008 it has not proved sustainable and did not create resilience mechanisms. On the other hand, digitalization and technological progress have had significant differences in level of implementation and dynamics in recent years. Only a small part of the jobs reacted toward adaptation and therefore the inequalities not only did they increased but they also diversified. Social relations are already strained by persistent income inequalities and increasing in work poverty.

The response of public policies is delayed, inarticulate with the mechanisms of developing resilience. Unlike the 2008 crisis, the pandemic also highlighted inequalities in vital sectors such as health and the education system. The differentiation of access and the quality of education as well as the financial constraints fuel the increase of inequalities, affecting in major forms the future generations of graduates.

The market - even in the recovery period - does not solve the inequalities, but, on the contrary. That is why it is necessary to change the perception of the economic recovery, by rethinking of the balance between competitive market forces and public policies. Economic inequalities have chronicled the social inequalities that have been largely attributed to the mechanisms of self-regulation of the competitive market and redistribution policies. On the one hand, the last two crises and, on the other hand, digitalization, force a deep and interconnected rethinking of the management of inequalities and of intervention measures to reduce the gaps, through public-private partnership in policy development.

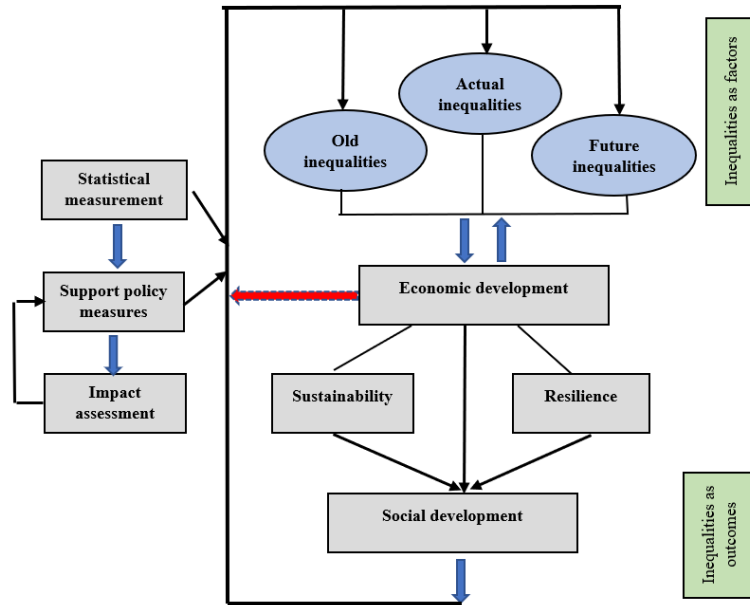
***The main coordinates aiming at a paradigm shift to support policies mitigating increased inequalities, for a robust post-pandemic resilience and sustainable development strategy***

Obviously, a change of approach and action is needed. The interweaving of crises - pandemic, economic, human development, to name just the most important ones - requires policies aimed at properly addressing issues related to connectivity and content, to design and develop innovative and equitable solutions adapted to a wide variety of cases (UN, 2020; Brooke et al., 2020). Free markets and state intervention in case of crises coexist in a dynamic relationship, as the return to the “free market normality” is always done through state intervention.

The weaknesses of neoliberalism highlighted by the last two crises make it impossible to return to the pre-pandemic period in promoting development policies. It is obvious that the 2030 Agenda implies change and reconstruction of the foundations of development, preserving the long-term objectives of sustainable development and green economy, but

reforming the labour and consumption model, to achieve the assumed objectives, respectively, in the present analysis, Development Objective 10.

The pandemic crisis makes the states responsible for reconsidering the policy of managing inequalities on two levels: a) to combat inequality in all its forms and manifestations and b) to develop resilience mechanisms, which, by their nature, aim to reduce the gaps and, in the medium and long term, mitigation of inequalities (Figure no. 2).



**Figure no. 2. Inequalities as factors and outcomes of development**

*Source: authors' vision on inequalities management in the new paradigm of building economic and social resilience in development*

The approach must take into account the involvement of all market actors, reduce inequalities through systemic measures and associate their duality - cause / factor and result of economic development. We support the opinion of some specialists regarding the need to change the paradigm instead of the gradual changes that did not prove sustainable in the post-crisis period of 2008 (CCEIA - UNIC, 2020). At the same time, the data available for 2020 show an increase in inequalities in Europe, within countries and between states, with the contraction of the middle class, the increase in labour poverty and unemployment (Solt, 2020; Eurofound, 2021; World Bank, 2021; OECD, 2021).

The proposed model of inequality management aims at two intervention-levels. The first is associated with the management of existing inequalities, accentuated by the crisis, and the second aims at the new inequalities induced by the expansion of frontier technologies (AI, robotics and gene-editing) in the business environment (UNCTAD, 2021). For change, the emphasis must be on education for the labour market and employment (Eurostat, 2021), and funding must be through public-private partnerships. To paraphrase John Maynard Keynes, the difficulty in managing inequalities is not in developing new ideas but in giving

up old ones. Palliative and ad hoc policies do not solve the problem, mitigate short-term inequalities and deepen medium- and long-term ones. The pandemic must be seen as a turning point in promoting measures to reduce inequities, based on the vision of creative job replacement and performance remuneration, as foundations for building a new way of thinking and approaching growth and quality of life. We live in the Anthropocene era, but we do not act in accordance with the vision of the individual's role in development. "Adopting new mindsets and building new capabilities may be one of the critical challenges of our time" (Schwartz, 2020) and "There is no one-size-fits-all approach to tackling inequality" (Dabla-Norris et al., 2015). Subsequent detailed research, after finalizing the resilience programs, will allow the identification of a typology of redefining and managing the dynamics of inequalities. Building resilience by definition contradicts predominantly palliative inequality management policies.

### **Conclusions**

The increase of post-crisis inequalities represents the main challenge of the current economies and its management in conditions of promoting sustainable growth, the green economy and resilience obliges to change the approach, to the reconstruction of the support policies. Inequality is a signal of the chronicity of economic and social imbalances and a result of their manifestation. Increasing inequality of opportunity has significant implications for the use of labour resources and their earnings.

Despite a recent relative stabilization, income inequality has experienced a long-term upward trend. The analysis performed in this study on European countries with different development levels reveals that this phenomenon is first of all influenced by historical-political-cultural factors, and secondly by those of a socio-demographic nature. Reversing the trend of income inequality is strictly necessary, but very difficult to achieve in a short period of time. It can start from the economic fundamentals, associated with policies aimed at reducing inequalities and in-work poverty, but also with accents in the social, political and cultural spheres. Moreover, the current megatrends - technological change and digitalization, labor migration, urbanization and deepening the climate crisis - reshape the main factors of inequality, which requires a new approach to the management of inequalities towards access, opportunities, non-discrimination and cultural progress.

The statistical analysis associated with the critical, qualitative evaluation of the inequality management policies, in the current context of the construction of the economic and social resilience mechanisms and of the continuation of the sustainable development policy represents a necessary approach and involves periodic analyses. In the present paper we have analyzed on the basis of the Gini coefficient the dynamics of inequalities and we have sketched, from a theoretical perspective, some indispensable coordinates for a new approach to the management of inequalities. Policy measures for economic recovery after the 2008 crisis have been proved ineffective in terms of reducing inequality, growing in developed EU countries and reducing in extremely modest proportions in less developed countries. The pandemic reconfirmed the need to change the perception and management of inequalities - their approach in a dual perspective - factor and purpose of development - and the adequacy of measures to the requirements of promoting resilience.

Our proposal aims at a staged process of reversing the dynamics of income inequality, consisting of a first stage of achieving structural convergence in terms of income inequality at regional

level and a second stage of reversing the trend of income inequality, taking into account the specificity of each country. Until now, the issue of income inequality has been a result of economic growth policies, productivity and market competitiveness. This growth must be responsible, based on the companies' social responsibility.

The obtained results should be further investigated, through a more detailed study focused on the East European countries, which face increased inequalities, both from internal political context - democratic fragility and from external context - higher economic and social performances.

It is also worth mentioning that, after the first reports on the implementation of the Recovery and Resilience Programs (currently under discussion at EU level, only some of them being approved) a qualitative analysis can be developed on the opportunity, usefulness and externalities of policies and a resumption of the statistical analysis in order to better delimit the determination relationship between the resilience program (and / or other post-crisis economic and social development policies) and the dynamics of income inequality.

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