INCOME INEQUALITY, ECONOMIC GROWTH, AND INSTITUTIONAL FACTORS: A COMPARATIVE ANALYSIS AT THE EUROPEAN UNION (EU) LEVEL

Bianca VEZENTAN[1], Olimpia NEAGU[1, 2, 3]

[1] Doctoral School in Economic Sciences, University of Oradea, Oradea, Romania
[2]„Vasile Goldiș" Western University of Arad, Romania
[3] Academy of Romanian Scientists, Bucharest, Romania
vezentanbianca@yahoo.com
neagu.olimpia@uvvg.ro

Abstract: *The rising income inequality around the world and its persistence represent a social phenomenon raising concerns at all levels (global, regional and country) for governments and pose huge challenges to master it and to identify effective solutions. The aim of the paper is to provide a comparative insight at the European Union (EU) level involving 25 Member States regarding the interplay between income inequality, economic growth, and institutional quality. Gini Index sourced from World Income Inequality Database, GDP per capita series extracted from the World Bank database, and institutional indicators collected from the World Governance Indicators database represent the examined variables over the period 1990-2022. Their dynamic is comparatively analysed and discussed. The clustering method is applied to identify similarities and differences between European Union countries in terms of the interplay between income inequality, economic growth and institutional factors and to draw relevant conclusions for future effective policy measures meant to reduce inequality and to boost economic growth. The clustering analysis based on the average growth rate of income inequality and per capita GDP revealed that European Union countries are differently facing the challenge of income inequality rising. Six groups of countries with similar paths regarding the income inequality and economic growth were identified. High-income countries face low levels of income inequality but with an upward trend. Economic growth is accompanied with high levels and increasing levels of income inequality. The institutional quality level may strength the capacity of a country to address the problem of rising income inequality, but it remains unclear the interplay of institutional quality dynamic in reducing income inequality. The implications of the paper's findings are framed in the context of the European policies.*

Key words: economic growth, income inequality, institutional factors

JEL Classification: O15, O17

1.Introduction

Income inequality is a major topic of recent debates (i.e., Stiglitz, 2013; Milanovic, 2016) for economists, researchers and governments. Inequality represents a central point of the European policies (European Commission, 2022) from several point of view: (1) *moral perspective* - according to the United Nation Human Rights Declaration, the persistence of inequality, meaning a large gap between rich and poor is wrong, meaning that governments have the moral and political duty to ensure an equal access to opportunities; (2) *poverty perspective* – inequality is a barrier to eradicate poverty, less inequality means that the economic growth benefits reach the poorest population, while a unequal distribution of resources in the economy will favour the rich and the benefits of development are hardly reached by the poor; (3) *efficiency perspective*- even public policies favour those who are

already rich, the distribution of companies and communities with improved economic performance is more equitable; (4) *Kuznets perspective*- Simon Kuznets (1955) believed that inequality is a inevitable part of economic development process; in early stages of economic development, inequality is expected to increase and then, over time, decrease; (5) *political economy perspective*-inequality is barrier for economic growth, resources are captured by elites inducing market and governments failure, social instability; moreover, high levels of inequality undermines the population trust in governments and public policies.

In this context, studies on income inequality in the interplay with economic growth and institutional factors is of great interest for researchers and policy makers. Moreover, the rising levels of economic inequality around the world and also, in all the European Union countries (based on data from WIID, 2023) is a reason for great concern due to ethical considerations, social consequences (Solimano, 1998; Klasen, 2008; Dabla-Noris et al., 2015) and also, because it is part of the Sustainable Development Goals of the United Nations (i.e., goal 10 refers to reduce inequality among and within countries). Governments are under pressure to take action meant to master and reduce income inequality.

The present study develops an exploratory analysis of the income inequality in relationship with economic growth and institutional factors in the European Union countries. Gini Index sourced from World Income Inequality Database, GDP per capita series extracted from the World Bank database, and institutional indicators collected from the World Governance Indicators database represent the examined variables over the period 1990-2022. Their dynamic is discussed and the clustering method is applied to identify similarities and differences between European Union countries in terms of their interaction and to draw relevant conclusions for future effective policy measures meant to reduce inequality and to boost economic growth. The study provides a comparative insight on the interplay between income inequality and economic growth together with institutional factors, adding a recent view to the literature on economic inequality in the European Union countries, suggesting some recommendations for the European policy makers.

2. Literature review on the relationship between income inequality and economic growth, and institutional factors

Income inequality and economic growth

The literature focused on the relationship between income inequality and economic growth is very extended, and somehow, non-conclusive. The topic is of interest to policy makers with the emergence of the concepts of social cohesion and inclusive growth and development.

The first studies (Lewis, 1954; Kuznets,1955; Kaldor, 1956; Sollow, 1956) suggest that income inequality is generated by the economic development level and in the first stages of economic development, income inequality increases, and after a certain level of economic development, the effect is reverses (Kuznets' inverted U-shaped curve).

The studies on the relationship between income inequality and economic growth can be divided into four categories, revealing: (1) a negative correlation; (2) a positive correlation; (3) the absence of any correlation, and (4) inconclusive findings.

Alesina and Rodrik (1994) and Persson and Tabellini (1994) concluded that increasing levels of income inequality is correlated with economic growth. Perotti (1996) found that countries with a low level of income inequality tend to invest more in human capital, that stimulates economic growth. Similar results were obtained by Panizza (2002) for USA, Wan et al. (2006) for China, (Cingano, 2014) for OECD countries, Royuela et al. (2019) and Braun et al. (2019) for OECD regions, and Breuning and Majeed (2020) for a panel of 152 countries.

A positive correlation between income inequality and economic growth was identified by Frank (2009) in the case of the U.S. economy, Bhorat and Van der Westhuizen (2012) for South-Arican countries, Shahbaz (2010) and Majeed (2016) for Pakistan's economy, Scholl and Klasen (2019) for the states from the former Soviet Union.

The absence of the relationship between income inequality and economic growth was revealed by Niyimbanira (2017) in the South-African countries, by Benos and Karagiannis (2018) for a panel of American countries, Ravallion (2014) for developing economies, and Marques (2022) for Brazilian cities.
Inconclusive results were obtained by Deininger and Squire (1998). Also, Castello-Climent (2010) confirmed that in income inequality is positively correlated with economic growth in higher-income countries while in middle- and low-income countries, the relationship is negative. Shin (2012) believes that both relationships are possible, and a high-income inequality level in the early stages of economic development can delay the economic growth, the redistribution policies being not always effective in reducing inequality. In the short run a high level of income inequality can stimulate economic growth, but on long-term, the effect is reversed (Halter et al., 2014). This is similar with findings of Ostry et al. (2018) and Brueckner and Lederеman (2018), Fereira et al. (2019) and Marrero and Serven (2021).

Institutional factors

Institutional factors are considered in the literature as having a significant impact on resources allocation in economy and affecting the economic growth level. Institutions represent a key factor of economic growth (Nsouli, 2004), and differences in institutional quality can explain differences in the macroeconomic results (Hall and Jones, 1999). The importance of institutions in the economy is well evidenced within the „institutional economy theory", where institutions have the role to provide efficient solutions to economic problems (Rutherford, 2001). According to North (1994, 2005), institutions establish the „rules of the game", meaning the rules, limits and incentives shaping the human interactions. Institutions refer to formal and informal rules that introduce order into economic and social life and create a mechanism for monitoring and reinforcing these rules, aiming to improve economic and social performance (Iancu et al., 2009). The relationship between income inequality and institutional factors seems complex, less studied and explained. Clearly, the regulations put in place by institutions are designed to reduce income inequality, and governments are acting to a fairer income distribution through fiscal and transfer policies (i.e., Røed & Strøm, 2002; Szczepaniak, 2020). A high level of income inequality can induce political instability and negatively affects the quality of institutions (Stiglitz, 2013). Income inequality can slow down the economic growth due to the fact that quality of institutions is a channel through which the impact of income inequality manifest itself on economic growth (Easterly, 2001, 2002). The low quality of institutions is accompanied by a rise in the inequality of income distribution (Rodrik, 1999). It is also possible to raise the quality of institutions with no impact in reducing income inequality (Batuo et al., 2012). Institutions are seen as a cause of income inequality (Chong and Gradstein, 2004). Corruption affects the income inequality in economy (Ullah and Ahmad, 2016) and political freedom contributes to the inequality reduction (Kuzmar and Piatek, 2019). The improvement in institutional quality significantly reduces the income inequality (Szczepaniak, et al. 2022).
Taking into consideration the above discussion, the present study intends to add to the existing knowledge new insights regarding the interplay between economic growth, income inequality and institutional factors in the European Union (EU) countries.

3.Data and Methods

This study considers the analysis of the following economic variables for 25 European Union (EU) countries: income inequality, economic growth and institutional factors (Malta and Cyprus were excluded due to incomplete data series). Income inequality is expressed by the Gini index, with values taken from the World Income Inequality Database (WIID) for the period 1996-2022. The Gini index is computed based on the annual disposable income of households. Data series on Gross Domestic Product per capita are taken from the World Bank database for the same period, 1996-2022.As regards the institutional factors, we worked with selected data from the Worldwide Governance Indicators database. In this

database, the quality of institutions (as it is defined by Kaufmann et al., 2011) is expressed through six indicators: *rule of law, effectiveness of governance, voice and accountability, political stability and absence of violence/terrorism, quality of regulation and control of corruption*. After selecting the available data, for European Union countries, we calculated their arithmetic mean, for each year, resulting in an indicator that we called *institutional factors*, following the example of some authors (such as Law et al., 2014; Chen and Kinko, 2016). Its values are used in the comparative analysis carried out for the EU countries over the period 1996-2021, as well as in the panel data analysis.
The main analysis methods used are: interpretation of data series dynamics based on graphical representations, correlation coefficient analysis between data series, and cluster analysis.

4. Comparative analysis of income inequality, GDP per capita and institutional factors

4.1. Income inequality

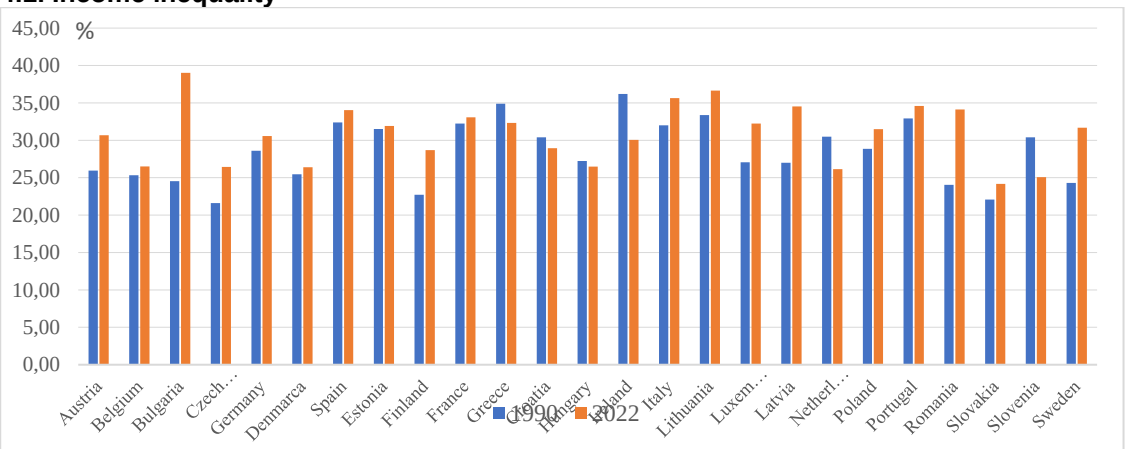

Figure 1: Income inequality index in 1990 and 2022 in EU countries
Source: data series from the World Income Inequality Database (WIID, 2023)

Income inequality increased in almost all the EU countries between 1990 and 2022. Only in five countries: Greece, Croatia, Hungary, Slovenia and Ireland did income inequality fall, with Ireland reporting the largest reduction of 6.14 percentage points, followed by Slovenia (5.33 percentage points). The highest increase in the Gini index value was recorded in Bulgaria, at 14.48 percentage points, followed by Romania, with an increase of 10.09 percentage points. The countries where income inequality increased the least are: Estonia, France, Denmark (Figure 1).
Over the period 1990-2022, Gini index values ranged from 21.61% (Czech Republic) to 36.19% (Ireland) in 1990 and from 24.17% (Slovakia) to 36.64% (Lithuania) in 2022. The average level of the Gini index increased from 28.46% in 1990 to 30.86% in 2022, reflecting the increase in income inequality across the EU. The EU average Gini index for the period 1990-2022 is 30.98. Countries are above this average level: Bulgaria, Spain, Estonia, France, Greece, Italy, Lithuania, Latvia, Poland, Portugal and Romania. Countries such as Austria, Belgium, the Czech Republic, Germany, Denmark, Finland, Croatia, Hungary, Luxembourg, the Netherlands, Slovakia, Slovenia and Sweden are below the EU average. It can be seen that not only Central and Eastern European countries face high levels of income inequality, but also Western European countries such as France and Portugal (Figure 2).

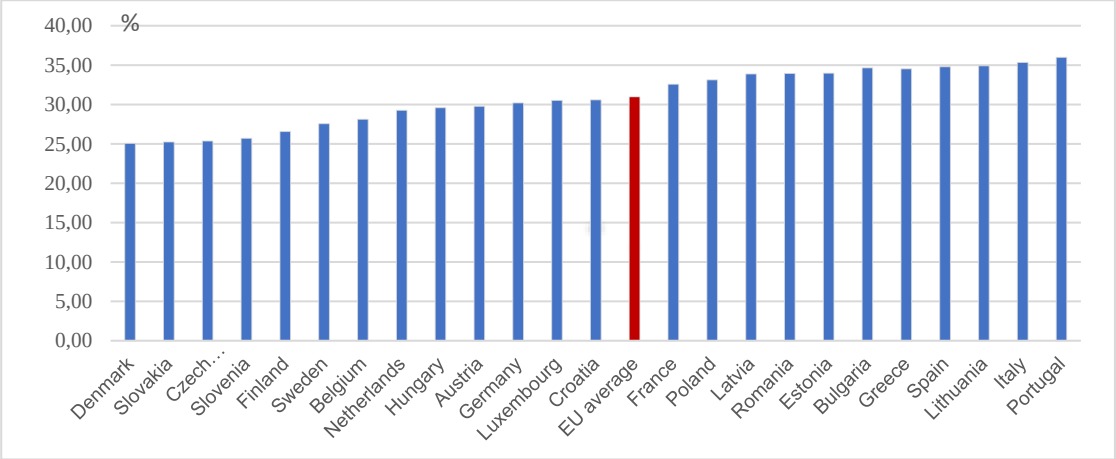

Figure 2: Average Gini index over the period 1990-2022 in EU countries
Source: World Income Inequality Database (WIID, 2023) data series

The increase in income inequality in EU countries over the period 1990-2022 is also reflected in the diagrams in Figure 4.3, which shows the expansion in 2022 of the area delimited by the points corresponding to the Gini index values compared to 1990. For example, while in 1990, Ireland had the highest Gini index value of 36.19, in 2022, Bulgaria is at the extreme value of 39.01.

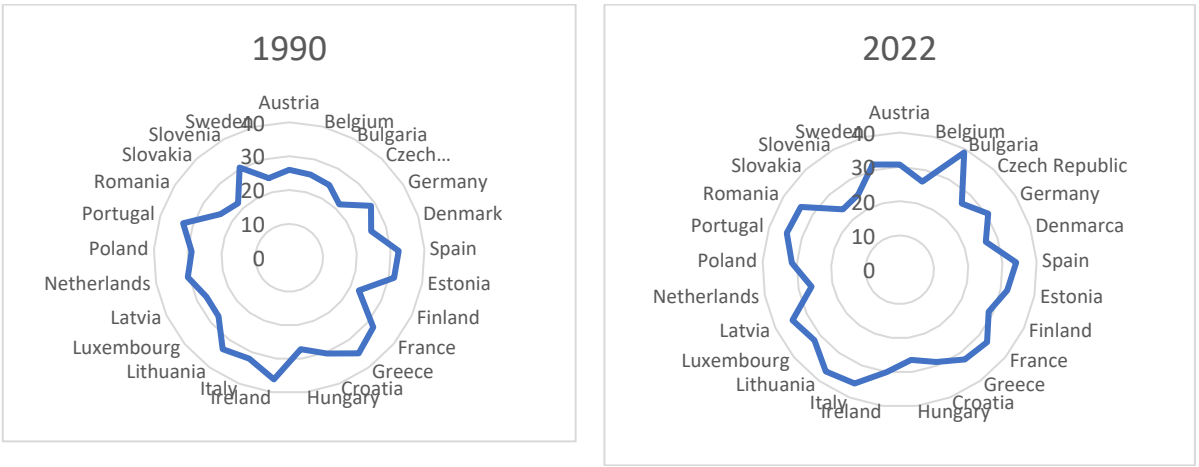

Figure 3: Expansion of the income inequality index in EU countries in 2022 compared to 1990
Source: data series from the World Income Inequality Database (WIID, 2023)

4.2. Gross Domestic Product per capita (GDP)

GDP per capita values increased in all the EU countries in the period to 2022 compared to 1996, as can be seen in Figure 4.

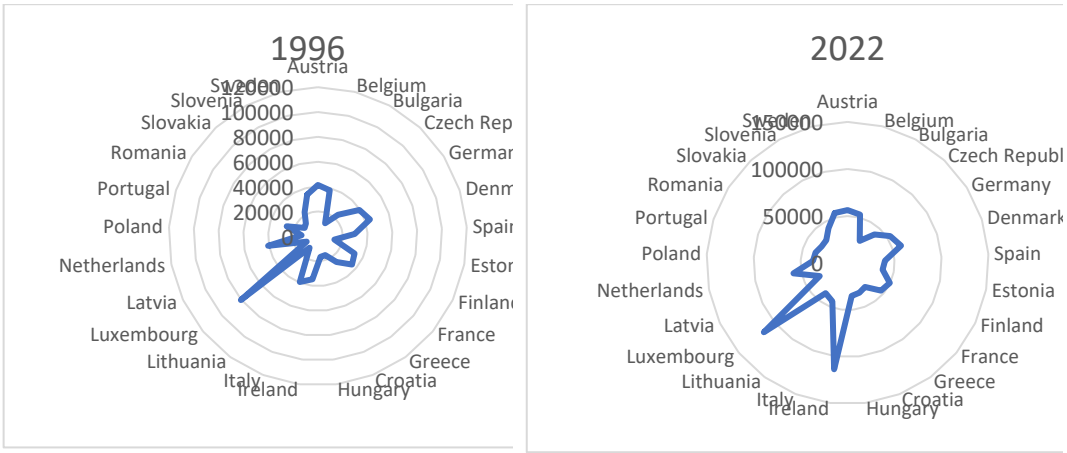

Figure 4: Level of GDP per capita in European Union countries in 2022 compared to 1996, in constant international dollars, 2017, at Purchasing Power Parity (PPP)
Source: World Bank data series (2023)

In terms of absolute increases, the biggest jump was recorded by Ireland at 79027 dollars followed by Luxembourg with an increase of 35151 dollars. In Lithuania and Latvia GDP per capita increased more than 3 times, Estonia and Poland were also close (2.7 times), and in Romania GDP per capita increased 2.57 times. In Eastern and Central European countries, the increases are much higher (2-3.5 times) than in Western European countries (1.1-2), Ireland being the exception with 3.26 times increase.

4.3. Institutional factors

According to the values calculated for the institutional factors as the arithmetic mean of the six indicators: voice and accountability, political stability and absence of violence/terrorism, governance effectiveness, regulatory quality, rule of law and control of corruption (World Governance Indicators, 2023), recorded in 1996 and 2022, the dynamics of the quality of institutions indicator differ by country category.

Thus, the values of the indicator range from a minimum of -0.24 (Croatia, 1996) to a maximum of 1.8888 (Finland, 2005). Based on the average values of this indicator over the period 1996-2022, the EU countries can be divided into four groups: (1) above 1.5, (2) between 1 and 1.5, (3) between 0.5 and 1, (4) below 0.5. The first group of countries with very high institutional quality includes Austria, Denmark, Finland, Luxembourg, the Netherlands and Sweden. In the second group of countries with high institutional quality are Belgium, Germany, Estonia, France, Ireland, Portugal and Slovakia. The Czech Republic, Spain, Greece, Hungary, Italy, Lithuania, Latvia, Poland and Slovenia are in the medium institutional quality group. In the last group of countries with low institutional quality are Bulgaria, Romania and Croatia. They are also the last to join the European Union.

Over the period analysed (1996-2022) the quality of institutions declined in all EU countries. Figure 5 shows the compression of institutional factor values in almost all countries.

Figure 5: Institutional factors in EU countries 1996 and 2022
Source: calculations based on data series from Worldwide Governance Indicators

Several countries have managed to increase the values of this indicator, namely Bulgaria, Czech Republic, Denmark, Estonia, Croatia, Lithuania, Latvia, Romania and Slovakia. Of these, Croatia stands out with an increase of 0.71 units in the average calculated for the six institutional indicators, followed by Estonia with an increase of 0.53 units (Figure 4.6). Among the countries where the quality of institutions deteriorated, Hungary stands out with a reduction of almost 0.5 units, Spain and Portugal with almost 0.4 units. Countries with very high institutional quality, such as Austria, Luxembourg, the Netherlands, Sweden and Finland, have undergone societal transformations that have also resulted in a reduction in the values of this indicator.

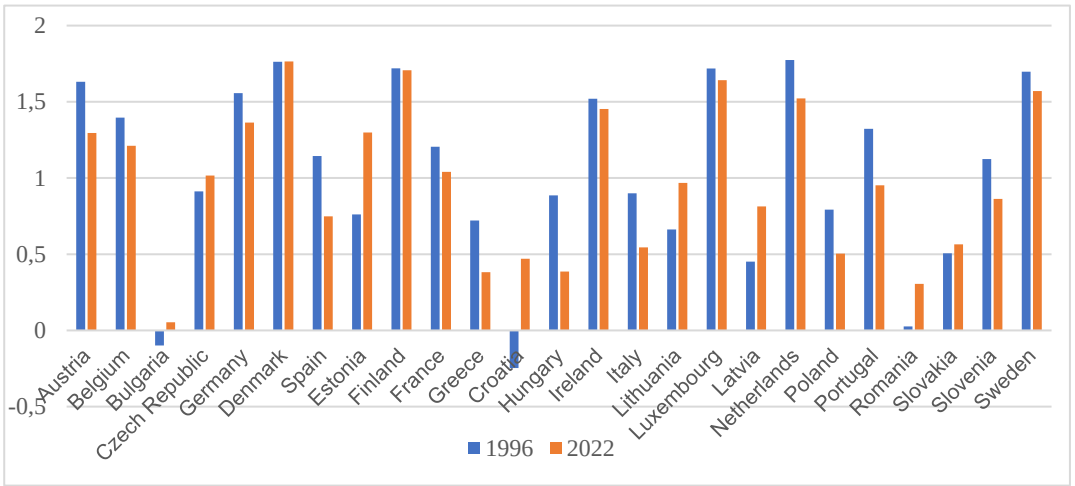

Figure 6: Differences between institutional factors in EU countries 1996 and 2022
Source: calculations based on data series from Worldwide Governance Indicators

4.4. Correlations between dynamic of GDP per capita, income inequality, and quality of institutions

The correlation coefficient between GDP per capita and income inequality is positive and very high in Western European countries (with a high level of development), but also in some Central and Eastern European countries such as Bulgaria, Croatia, Romania, Lithuania and Latvia. In the other Central and Eastern European countries (Hungary, Poland, Czech Republic, Slovakia, Slovenia) with also GDP per capita levels below the EU average, the

correlation coefficient values are negative, reflecting the fact that income inequality increases when GDP per capita decreases and vice versa. Also, Greece, Italy, Portugal, Ireland show negative values, together with Belgium (Table 1). In 17 of 25 countries under examination, institutional factors are positively corelated with income inequality and in 8 of them (Austria, Germany, Demark, Spain, Estonia, Luxembourg, Slovenia and Sweden) the correlation is inverse. This last result suggests that, when quality of institution increases, the reduction of income inequality is possible.

Table 1: Correlations between GDP per capita evolution, Gini index and institutional factors in EU countries (1996-2022)

Country	Correlation coefficient between GDP per capita and Gini index	Correlation coefficient between the Gini index and institutional factors	Institutional quality	GDP per capita	Gini index
Austria	0.30	-0.39	very high	Above the EU average	Below the EU average
Belgium	-0.45	0.59	high	Above the EU average	Below the EU average
Bulgaria	0.84	0.05	high	Below the EU average	Above the EU average
Czech Republic	-0.01	0.09	medium	Below the EU average	Below the EU average
Germany	0.94	-0.57	high	Above the EU average	Below EU average
Denmark	0.84	-0.42	very high	Above the EU average	Below EU average
Spain	-0.12	-0.32	medium	Below the EU average	Above the EU average
Estonia	-0.89	-0.85	high	Below the EU average	Above the EU average
Finland	0.83	0.36	very high	Above the EU average	Below EU average
France	0.57	0.01	high	Above the EU average	Above the EU average
Greece	-0.57	0.12	medium	Below the EU average	Above the EU average
Croatia	0.29	0.62	reduced	Below the EU average	Below the EU average
Hungary	-0.92	0.82	medium	Below the EU average	Below the EU average
Ireland	-0.82	0.56	high	Above the EU average	Above the EU average
Italy	-0.47	0.02	medium	Above the EU average	Above the EU average
Lithuania	0.29	0.37	medium	Below the EU average	Above the EU average
Luxembourg	0.69	-0.21	very high	Above the EU average	Below the EU average
Latvia	0.58	0.52	medium	Below the EU average	Above the EU average
Netherlands	-0.40	0.14	very high	Above the EU average	Below the EU average
Poland	-0.60	0.19	medium	Below the EU average	Above the EU average

Portugal	-0.56	0.56	high	Below the EU average	Above the EU average
Romania	0.50	0.39	reduced	Below the EU average	Above the EU average
Slovakia	-0.37	0.22	high	Below the EU average	Below EU average
Slovenia	-0.14	-0.27	medium	Below the EU average	Below the EU average
Sweden	0.86	-0.41	very high	Above the EU average	Below the EU average

Source: calculations based on data series from World Bank, World Income Inequality Database and Worldwide Governance Indicators

In order to study the link between the evolution of GDP per capita and the Gini index in the European Union countries, we calculated the average growth rate of both indicators for the period 1996-2022 and applied the cluster analysis method by using the SPSS econometric software. We considered a number of 6 clusters. To validate that this clustering is statistically significant we used the ANOVA test for a 1% significance threshold. In this case, the Sig value is 0.000, for both variables, indicating that there is a significant difference between the clusters.

Table 2: Groups of European Union countries, by average GDP per capita and Gini index growth rate, over the period 1996-2022

Cluster (number of member countries)	**Countries**	**GDPpc growth rate (average)**	**Gini index growth rate (average)**
Cluster 1(3)	Lithuania, Latvia, Poland	4.26	0.39
Cluster 2 (2)	Estonia, Ireland	4.01	-0.33
Cluster 3(2)	Bulgaria, Romania	3.19	1.17
Cluster 4(5)	Austria, Czech Republic, Finland, Luxembourg, Sweden	1.57	0.63
Cluster 5 (9)	Belgium, Germany, Denmark, Spain, France, Greece, Italy, Netherlands Portugal	1.01	0.3
Cluster 6 (4)	Croatia, Hungary, Slovakia, Slovenia	2.77	-0.21

Source: processing of GDP per capita and Gini index data series with SPSS software

The first cluster consists of Lithuania, Latvia and Poland, with the highest level of GDP per capita growth and an average level of Gini index growth rate. In these countries, economic growth is accompanied with rising income inequality, and the speed of Gini index is lower than the economic growth rate. These countries have the GDP per capita below the EU average, a higher Gini index as the EU average, and a mediul level of institutional quality. The second cluster includes two countries, Estonia and Ireland, with a high GDP per capita growth rate, correlated with a negative Gini dynamic, indicating that as economic growth accelerates, income inequality reduces faster. The common elements for these countries are the high level of income inequality and institutional quality, while the Ireland is a high-income country, and Estonia has an income level under the EU average.The situation is somewhat similar in the sixth cluster, which includes Croatia, Hungary, Slovenia and Slovakia, excepting that the dynamics of the two variables are lower. All these countries are facing levels of income inequality and of GDP per capita below the EU average. Croatia, the last country that joined the European Union, has caught up in economic development,

managed the incomed inequality with effort to increase the institutional quality. Hungary and Slovenia have a medium level of institutional quality. Hungary is challenged with a fall of institutional quality in the examined period of time amid an improvement in income distribution. In Slovenia, a visible downward trend in institutional quality is associated with a relatively stable dinamic of income inequality, suggesting that the mastery of income inequality may not necessarily be a result of institutional quality. In Slovakia, institutional quality evolves in a positive dynamic with a reduction of income inequality amidst rapid economic growth. The third cluster includes Bulgaria and Romania, countries under the EU average as GDP per capita and institutional quality, which have relatively high average GDP growth rates associated with accelerating growth in income inequality while quality of institutions increased. Clusters 4 and 5 include Western developed European countries, excepting Czech Republic, with moderate growth rates for both, GDP per capita and income inequality. The level of institutional quality is high in these Western developed countries. With medium level of institutional quality and GDP per capita under the EU level, Czech Republic has succeeded in reducing income inequality while reducing the quality of institutions. In the countries of cluster 4 (Austria, Finland, Luxemburg and Sweden) the falling institutional quality is associated with growth of income inequality, similarly with Germany, Denmark, Spain and France from cluster 5. Within cluster 5, in Belgium, Greece, Netherlands and Portugal, the downward trend of institutional quality is correlated with reduction in income inequality.

5.Conclusions and Policy Implications

The aim of the paper was to provide comparative insights of the relationship between economic growth and income inequality among the European Union (EU) countries. In almost all the European Union countries, economic growth was accompanied with rising income inequality over the period of 1990 to 2022, excepting Greece, Croatia, Hungary, Slovenia and Ireland.

The present study explores the levels and the dynamic of GDP per capita, Gini index and institutional quality in the European Union countries over the period 1990-2022. The analysis shows that: (1) in almost all high-income countries, the level of income inequality is lower than in low-income countries; (2) mostly, higher income (GDP per capita) is accompanied by higher quality of institutions; (3) rising income inequality may occur in the process of economic growth, and its growth rate and is different, according to the economic development level: the growth rate of income inequality is higher in low-income countries, while high-income countries have the capacity to address high growth rate of income inequality; (4) economic growth is accompanied by rising levels of income inequality in countries with low-income and high-income inequality levels (Romania, Bulgaria), in line with the findings of Rodrik (1999) and Batuo et al. (2012); (5) high institutional quality level is accompanied by moderate income levels and growth of income inequality; (6) falling institutional quality is correlated with rising income inequality in some high-income countries (e.g. Austria, Finland, Luxembourg, Sweden, France, Spain, Italy, Germany, Denmark), as it was revealed by Chong and Gradstein (2004); (6) moderate economic growth rates are correlated with moderate growth in income inequality, in high-income countries; (7) it remains unclear the interplay of institutional quality dynamic in reducing income inequality (countries as: Belgium, Netherlands, Portugal, Ireland, and Greece succeeded to reduce income inequality when their quality of institutions decreased while Czech Republic obtained similar result with an increase in quality of institutions; in other countries, the increase in quality of institutions evolves together with income inequality growth-no impact being identified).

It is not possible to draw a general valid conclusion on the relationship between economic growth and income inequality in the European Union countries. It is expected that economic growth generates a fairer distribution of income in the society, but also higher income

countries are faced with rising income inequality (e.g., Germany, Finland, France, Luxemburg, Netherlands). These countries have a high institutional quality and, as Kranzinger (2020) highlighted, they have the capacity to develop effective mechanisms to reduce income inequality. Persistence of income inequality in the European Union countries would hamper economic growth and can lead to social conflicts, reducing citizens' participation in the society and high social exclusion. The concept of inclusive growth is placed in the centre of the EU policy on inequality, and reducing inequality is a clear priority. In the frame of the European social and cohesion policy, as consequence of the study's findings, the following implications can be drawn: (1) more effective fiscal and transfer policies are needed in low-income countries in order to reduce the rising levels of income inequality; (2) more effective labour market institutions and public measures focused on low-income workers or groups; (3) promoting policy measures focused on „pre-distribution" and less on re-distribution of income among groups/households) in all the EU countries.
It must be mentioned that the present study is an exploratory one, and it should be followed by a deeper and detailed analysis of the European Union countries regarding determinants of income inequality and possible social and economic mechanisms meant to curb the rising income inequality.

References

1. Alesina, A.; D Rodrik, D. (1994) "Distributive politics and economic growth", *The Quarterly Journal of Economics* 109 (2) pp. 465–490.
2. Batuo, M., Guidi, F., & Mlambo, K. (2012) "Financial development and income inequality: Evidence from African countries", *MPRA Paper* 25658,
3. Benos, N.; Karagiannis, S. (2018) "Inequality and growth in the United States: Why physical and human capital matter", *Economic Inquiry* 56 (1) , pp. 572–619.
4. Bhorat, H.; Van der Westhuizen, C. (2012) "Poverty, inequality, and the nature of economic growth in South Africa", *Working Paper* 12/151, Development and Poverty Research Unit Working Paper Development Policy Research Unit, University of Cape Town
5. Braun, M.; Parro, F.; Valenzuela , P. (2019) "Does finance alter the relation between inequality and growth?" *Economic Inquiry* 57 (1), pp. 410–428.
6. Breunig, R.; Majeed, O. (2020) "Inequality, poverty, and growth", *International Economics* 161, pp.83–99 (Brueckner, M.; Lederman, D. (2018) "Inequality and economic growth: the role of initial income", *Journal of Economic Growth* 23 (3) pp.341–366.
7. Castelló-Climent, A. (2010) "Inequality and growth in advanced economies: an empirical investigation", *Journal of Economic Inequality* 8 (3), pp.293–32.
8. Cingano, F. (2014) "Trends in income inequality and its impact on economic growth", *OECD Social, Employment and Migration Working Papers* ,No.163, OECD Publishing.
9. Chen, W. and Kinkyo, T. (2016) "Financial Development and Income Inequality: Long-Run Relationship and Short-Run Heterogeneity", *Emerging Markets Finance and Trade*, 52(3), pp. 733-742.
10. Chong, A., & Gradstein, M. (2004)"Inequality and Institutions", *Working Paper*, No. 506, Inter-American Development Bank, Research Department, Washington.
11. Dabla-Norris, E.;Kochhar, K.; Suphaphipha, N.; Ricka, F.; Tsounta, E. (2015) *Causes and consequences of income inequality: a global perspective. International monetary fund (IMF) staff discussion Note,* 15/13, Washington DC: IMF.
12. Deininger, K.; Squire, L. (1998) "New ways of looking at old issue: inequality and growth", *Journal of Development Economics,* Vol.57, issue 2, pp.259-287.
13. Easterly, W. (2001) "The middle class consensus and economic development", *Journal of Economic Growth, 6*(4), pp.317–335.
14. Easterly, W. (2002) "Inequality does cause underdevelopment: New evidence", *SSRN Electronic Journal*
15. Ferreira, F., Lakner, C., Lugo, M.A., Özler, B. (2018)"Inequality of opportunity and economic growth: how much can cross-country regressions really tell us?", *The Review of Income Wealth* 64, pp.800–827.
16. Frank, K.M. (2009) "Inequality and growth in the United States: evidence from a new state-level panel of income inequality measures", *Economic Inquiry*, Vol.47, Issue 1, pp.55-68.

17. Hall, R. E.; Jones, Ch. (1999) "Why do some countries produce so much more output per worker then others" *The Quarterly Journal of Economics*, Vol. 114, no. 1 (https://www.jstor.org/stable/2586948)
18. Halter, D.; M. Oechslin, M.; Zweimüller, J. (2014) "Inequality and growth: The neglected time dimension", *Journal of Economic Growth* 19 (1), pp.81–104.
19. Iancu, A.; Pecican, E. Șt.; Olteanu, D. (2009) "Calcule de regresie privind convergența economică și evidențierea contribuției factorului instituțional", *Studii Economice*, Academia Română - Institutul de Cercetări Economice, București.
20. Kaldor, N. (1956) "Alternative theories of distribution", *Review of Economic Studies*, Vol. 23 (2), pp. 83–100.
21. Kaufmann, D.; Kraay, A. and Mastruzzi, M. (2011) "The Worldwide Governance Indicators: methodology and Analitical Issues", *Hague Journal on the Rule of Law*, 3, pp.220-246.
22. Klasen, S. (2008) "The efficiency of equity", *Review of Political Economy*, Vol.20, pp.257–74.
23. Kranzinger, S. (2020) "The decomposition of income inequality in the EU-28", *Empirica*, 47, pp.643-668.
24. Kuzmar, S., & Piątek, D. (2019) "Institutional determinants of inequality in chosen post-socialist countries: The role of political freedom", *Ekonomia i Prawo. Economics and Law, 18*(3), pp.295–315.
25. Kuznets, S. (1955) "Economic growth and income inequality", *American Economic Review*, 45:1, pp.1–28.
26. Law, S.H.; Tan,H.B. and Azman-Saini, W.N.W. (2014) "Financial Development and Income Inequality at Different Levels of Institutional Quality", *Emerging Markets Finance and Trade*, 50 (Supplement 1),pp. 21-33.
27. Lewis, W. (1954)"Economic Development with Unlimited Supplies of Labour", *Manchester School* ,Vol.22, Issue 2, pp.139-191.
28. Marrero, GA., Servén, L. (2021) "Growth, inequality, and poverty: a robust relationship?", *Empirical Economics* 63, pp.725-791.
29. Marques, A.M (2022)" Is income inequality good or bad for growth? Further empirical evidence using data for all Brazilian cities", *Structural Change and Economic Dynamics*, 62, pp.360-376.
30. Milanovic, B. (2016) *Global Inequality: A New Approach for the Age of Globalization*, Cambridge, Massachusetts: Harvard University Press.
31. Niyimbanira, F. (2017)"Analysis of the impact of economic growth on income inequality and poverty in South Africa: the case of Mpumalanga province", *International Journal of Economics and Financial Issues* 7 (4), pp. 254–261.
32. North, D.C. (1994) "Institutional change: A framework of analysis", *Economic History*, 9412001.
33. North, D. C. (2005) *Understanding the Process of Economic Change*. Princeton University Press.
34. Ostry J.D.; Berg, A. and Tsangarides, C.G. (2018) "Redistribution, inequality, and growth. New evidence", *Journal of Economic Growth*, Vol.23, No.3, pp.259-305.
35. Panizza, U. (2002) "Income, inequality and economic growth: evidence from American data", *Journal of Economic Growth* 7 (1), pp.25–41.
36. Perotti, R. (1996) "Growth, income distribution and democracy: what the data say", *Journal of Economic Growth* 1 (2), pp.149–187 .
37. Persson, T.; Tabellini, G. (1994) "Is inequality harmful for growth? Theory and evidence", *American Economic Review* 84 (3), pp. 600–621.
38. Ravallion, M.(2014) "Income inequality in the developing world", *Science* 344(6186), pp.851–855.
39. Rodrik, D. (1999) "Where did all the growth go? External shocks, social conflict, and growth collapses", *Journal of Economic Growth* 4, pp.385-412.
40. Røed, K., & Strøm, S. (2002) "Progressive taxes and the labour market: Is the trade–off between equality and efficiency inevitable?" *Journal of Economic Surveys,* 16(1), pp.77–110.
41. Royuela, V.; Veneri, P.; Ramos, R. (2019) "The short-run relationship between inequality and growth: evidence from OECD regions during the Great Recession", *Regional Studies* 53 (4), pp. 574–586.
42. Rutherford, M. (2001)"Institutional Economics: Then and Now", *Journal of Economic Perspective*, Vol.15, No.3, pp.173-194.
43. Shin, I., (2012) "Income inequality and economic growth", *Economic Modelling,* Vol. 29, pp. 2049-2027.
44. Scholl, N.; Klasen, S. (2019) "Re-estimating the relationship between inequality and growth", *Oxford Economic Papers* 71 (4), pp.824–847.

45. Shahbaz, M. (2010) ”Income inequality, economic growth and nonlinearity: a case of Pakistan”, *International Journal of Social Economics* 37 (8), pp.613–636.
46. Solimano A. (1998) ”Alternative theories of distributive justice and social inequality: liberal, socialist and libertarian perspectives”. In: Solimano A, editor. *Social inequality: values, growth, and the state*. Ann Arbor MI: University of Michigan Press.
47. Solow, R. M. (1956) ”Contribution to the Theory of Economic Growth”, *Quarterly Journal of Economics*, 70, pp. 65-94.
48. Stiglitz, J. E. (2013) ”The price of inequality”, *New Perspectives Quartelrly* 30(1).
49. Szczepaniak, M. (2020) ”Redistribution and the alleviation of income inequalities: The case of the European Union”, *Ekonomia i Prawo. Economics and Law, 19*(1), pp.149–161.
50. Szczepaniak, M. Geise, A.; Barriyah, N. (2022) ”Impact of institutional determinants on income inequalities in Indonesia during the Era Reformasi”, *Journal of Asian Economics*, 82, 101526.
51. Ullah, M. A., & Ahmad, E. (2016) ”Inequality and corruption: Evidence from panel data”, *Forman Journal of Economic Studies,* 12, pp.1–20.
52. UNU-WIDER, World Income Inequality Database (WIID). Version 2023.(https://doi.org/10.35188/UNU-WIDER/WIID-300622)
53. Wan; G.; Lu, M.; Chen, Z. (2006) ”The inequality–growth nexus in the short and long run: empirical evidence from China”, *Journal of Comparative Economics* 34 (4), pp. 654–667.)
54. World Bank. GDP per capita (1990-2022) (PPP, 2007 constant international USD) (https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=RO) [04 January 2024]
55. Worldwide Governance Indicators, 2023 (www.govindicators.org)