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THE EFFECTS OF MACROECONOMIC AND FINANCIAL DEVELOPMENT ON INCOME INEQUALITY: EVIDENCE FROM THE WESTERN BALKANS

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Abstract

Using data from 1996 to 2019 covering five Western Balkan countries and applying the linear panel data estimation method, this paper examines the effect of macroeconomic indicators and financial market development on income inequality. Regression results with Driscoll-Kraay standard errors demonstrate that income per capita increases income disparities. Theoretically, there are grounds for both a positive and negative relationship between economic growth and income inequality. In addition, contrary to prevailing literature, our analysis finds no significant impact of financial market development on income inequality, while the rule of law is found to have no effect on income inequalities in these countries. We depart from previous literature by bringing new evidence on the relationship between income inequality and economic growth in the specific context of Western Balkan countries. We study this relationship in an integrated framework and rely on a larger time span, both of which are seemingly important for comprehending the income inequality-economic growth nexus. Certainly, the obtained results bear important policy implications as discussed in this paper.

Keywords: *income inequality, economic growth, financial market development, rule of law, Western Balkan countries*

1. Introduction

Income inequality, as a global phenomenon, has garnered significant attention among scholars and policymakers in both advanced and developing countries. Since Kuznets' pioneering work in 1955, numerous researchers have endeavored to analyze the determinants of inequality and its consequences within complex economic environments. Kuznets posited a long-term trend in inequality, initially characterizing it as increasing during the early stages of economic development, as societies transitioned from agricultural to industrialized economies. This trend was followed by a period of stabilization before narrowing in later phases. However, empirical studies have revealed mixed evidence regarding the relationship between income inequality and economic growth (Acemoglu and Robinson 2002, p.183). Kuznets' hypothesis, presented

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in the form of an inverted U-shaped curve, initially seemed to align well with historical data, particularly when inequality was high in the early 20th century, decreased during world wars, and then began to rise again in the 1970s. Now, it appears that inequality follows a U-shaped trajectory (Keeley 2015, p.65).

Meanwhile, transition economies in Europe and the former Soviet Union, transitioning from centrally planned to market economies, underwent a period of rapid political and economic transformation. The increase in inequalities within these transition economies significantly contributed to the overall widening of income disparities. The main components of the transition process, as defined by the IMF (2000), included the liberalization of prices and trade, macroeconomic stabilization, restructuring and privatization of state enterprises, as well as legal and institutional reforms in these countries. At the onset of the market transition, the Western Balkan (WB) countries encountered significant difficulties and constraints, experiencing hyperinflation, declining growth, and increasing unemployment. Milanovic (1998), in his book, demonstrates that prior to the transition, household income was primarily derived from the state and social transfers, resulting in a higher share of gross income compared to market economies. Consequently, the Gini coefficient was lower than that of OECD countries and countries at similar development levels.

Therefore, countries in transition are particularly vulnerable to income inequalities as they undergo deep structural transformations from state-led economies to market economies. This paper seeks to re-examine income inequality determinants in the Western Balkan countries by incorporating financial market development and institutions into the equation. Given the potential effects of income inequality on these fragile economies, understanding its determinants is crucial. We conduct an empirical analysis of the Western Balkan region using recent data spanning from 1996 to 2019. Building upon prior research highlighting the influence of economic growth on income distribution, our study develops an empirical model that also incorporates other critical factors in this relationship. By addressing this aspect, our aim is to provide a comprehensive analysis of the determinants of income distribution in Western Balkan countries. Specifically, this article focuses on the determinants of income inequality and the impact of financial market development and the rule of law on income inequality in the Western Balkan region.

Despite a large number of empirical studies on the relationship between income inequality and economic growth, the evidence remains inconclusive. The increasing income disparities, coupled with financial liberalization, have sparked further research on the finance-inequality nexus. It's important to note that this relationship is also contingent on the level of institutional quality. The literature review reveals that financial market development may have either a widening or narrowing effect on inequality. Additionally, there may exist a "threshold effect" where finance initially increases income inequality up to a certain point, beyond which its effect diminishes. By including the main determinants in our analysis and utilizing a reliable and consistent estimator that allows for a relative generalization of our findings, we aim to offer a more precise understanding of the factors contributing to income inequality in the Western Balkan countries. Specifically, in this paper, we investigate two research questions:

- What is the impact of economic growth on income inequality in the Western Balkan countries?
- What is the impact of financial market development and the rule of law on income inequality in the Western Balkan Countries?

The remainder of the paper is divided into seven parts and structured as follows.

Section 2 provides a brief review of the literature on the relationship between financial development, institutions, and income inequality.

Section 3 examines existing studies on inequality in transition countries, with specific reference to the impact of financial market development on the income inequality phenomenon in the Western Balkan region.

Section 4 presents the data and the variables. It provides information on sources of data, variable definition and presents descriptive statistics.

In section 5, we explain research methodology and the model with specific reference to methodological issues following previous research.

In section 6, we present the results of empirical models estimated and refer to main conclusions stemming from the obtained results.

Detailed discussion of the results is provided in section 7. We draw relevance from previous studies and pay attention to the specific context of investigation on which we draw important policy implications

Finally, the concluding section analyses the key findings and compares them with the existing literature on developed countries and those concerning the Western Balkan region.

2. Literature Review

Greater income inequality is widely recognized as detrimental to major socioeconomic and political objectives. The literature review demonstrates that globalization, particularly trade and financial liberalization, are significant factors driving income inequality. Additionally, technological change, redistributive policies, changes in labor market institutions, and education are identified as sources of inequality (Dabla-Norris et al. 2015, pp.18-22). According to Cornia and Court (2004, pp.14-20), it is crucial to distinguish between "traditional" causes of inequality and "new" causes. Traditional causes include factors such as arable land area, urban bias, and inequality in education. New causes are associated with liberal economic regimes and policies implemented in developing countries during the 1980s and 1990s, such as new technology, trade liberalization, financial liberalization, privatization, and changes in labor market institutions. While traditional causes are responsible for the initial level of inequality in different countries, the recent increase in inequality in some countries is attributed to the new causes corresponding to rapidly changing liberalizing economic regimes. Therefore, new causes are claimed to be responsible for the worsening situation. However, many authors have also acknowledged that the institutional framework and chosen economic policies have an impact on determining the pattern of income inequality.

Although many theoretical and empirical studies suggest that high income inequality has adverse effects on growth (Alesina and Rodrik 1994; Atem and Jones 2015; Berg and Ostry 2017), there is a widely held belief that inequality is necessary for economic growth (Li and Zou 1998; Forbes 2000; Scholl and Klasen 2019). Moreover, Davis and Hopkins (2011) argue that the inconclusive results regarding the relationship between income inequality and economic growth are due to omitted variable bias, with the key omitted variable in this relationship being the quality of institutions.

Banerjee and Duflo (2003) provide evidence for an inverted U-shaped curve, while Deininger and Squire (1998) reveal a strong negative relationship between initial inequality in asset distribution and long-term growth. Atems and Jones (2015), employing a comprehensive cross-country panel, find that a shock to the Gini coefficient leads to a permanent increase in income inequality. Panizza (1999), using regional data, confirms a negative relationship between inequality and economic growth for US states. However, Li and Zou (1998), in contrast to the research by Alesina and Rodrik (1994), show that income inequality is positively associated with growth.

Many liberal economists, echoing the view expressed by Arthur Okun (1975), argue that countries cannot achieve perfect equality and perfect efficiency simultaneously; there must be a trade-off between equality and efficiency. Proponents of this view contend that income inequality is necessary for economic growth because it fosters savings, which subsequently fuel investments. As growth increases, even those at the bottom of the income distribution will benefit, and eventually, inequality will decrease.

Alternatively, Seven and Coskun (2015, p.39), inspired by Galor and Zeira's (1993) work on capital market imperfections, argue that the financial system and institutions should operate effectively to present opportunities for growth, improve income distribution, and reduce poverty. Therefore, since the early 1990s, empirical growth literature has incorporated various factors such as financial market development, trade openness, and institutional quality into the growth equation (Cingano 2014, p.44). The increasing recognition of the importance of finance and institutions on growth and inequality has led to a plethora of research indicating how different types of institutions, through financial flows, can shape income disparities.

Studies examining the relationship between financial development and income inequality yield mixed results. A literature review reveals that while some aspects of finance decrease income inequality, other indicators can increase it, or there may be a threshold effect where, after a certain threshold level is achieved, financial development reduces income inequality. Thus, three significant theories on the link between financial development and income inequality exist.

The first claim is based on the Kuznets curve, also known as the Greenwood-Jovanovic hypothesis (1990), which suggests that estimation in nonlinear regression between financial market development and inequality may demonstrate a threshold effect. Similar to Kuznets' theoretical approach, in the early stages of economic development, financial markets grow slowly and only the wealthy have access to credit markets. As financial markets expand, aggregate savings and economic growth increase, benefiting the wealthy more. This process exacerbates disparities between the rich and the poor. Finally, in the maturity phase of development, as financial markets become accessible to lower-income individuals, income inequality begins to decrease, following an inverted U-shaped curve. Some studies confirm the nonlinear regression between financial development and income inequality (Greenwood and Jovanovic 1990; Dong-Hyeon and Shu-Cin 2011; Law, Tan, and Azman-Saini 2014; Biyase and Chisadza 2023).

The second view is based on the expectation that as financial market development increases economic growth across all segments of the population, this will lead to a decrease in income inequality. Research by Beck, Demirgüç-Kunt, and Levine (2007) confirms the importance of financial development for the poor, increasing the income of the poorest quintiles and decreasing overall income inequality. Ben Naceur and Zhang's (2016) research demonstrates that financial depth, access, efficiency, and stability significantly reduce income inequality, while domestic and external financial liberalization exacerbates it. Therefore, the ratio of private credit to GDP and the ratio of the total value of stock market trades to GDP reduce income inequality. Weychert's (2020) study suggests that financial access reduces income inequality, and the level of financial inclusion is shown to decrease income disparities (Omar and Inaba 2020; Demir et al. 2022).

The third view is related to the existence of asymmetric information and legal constraints for the poor, where they are affected by a lack of access to finance. Research by Seven and Coskun (2016) does not confirm the income-reducing hypothesis, indicating that even though financial systems have developed in terms of size and liquidity over the last two decades, the poor in emerging countries did not benefit from it. Similarly, research by Jauch and Watzka (2016) and De Haan and Sturm (2017) contradicts theoretical models suggesting that financial market development worsens income inequality.

In addition, discussions on inequality in recent years have placed a lot of emphasis on the necessity of good governance and institutions. Chong and Gradstein (2004) argue that income inequality may undermine institutions by empowering rich elites, while poor institutional quality may lead to greater income inequality. The findings suggest a strong negative relationship between institutional quality and income inequality (Davis and Hopkins 2011; Huynh and Tran 2023).

Within the institutional framework setting, Bennet and Nikolaev (2016) have investigated the Engerman-Sokoloff hypothesis, which proposes that factor endowments influence the rule of law, leading to income inequality. The authors argue that the elite class established weak legal institutions to protect their interests, while the middle class promoted stronger institutions. Their findings demonstrate that the elite's influence on the rule of law contributed to an increase in income inequality. Amendola, Essaw, and Savoia (2013) provide evidence that property rights increase income inequality in the majority of developing countries, particularly in low democracies, implying that relevant institutions in these countries favour minorities. Similarly, Perera and Lee (2014) have found that corruption, democratic accountability, and bureaucratic quality indicators are positively and statistically significantly associated with the Gini index, suggesting that improvements in these factors have worsened the income distribution in the selected developing countries.

In this context, the financial and institutional framework in the Western Balkan countries is crucial, as it impacts the gap between the rich and the poor possibly contributing to increased or decreased inequalities. Given the objectives of this research, in the sections to follow, we provide an overview of empirical literature on the relationship between income inequality, financial market development, and the rule of law in transition countries.

3. Finance-Institutions-Inequality Nexus in Transition Economies

As substantiated in the empirical literature, the initial transition period was characterized by a sharp decline in economic output and increases in inequality in Central and Eastern European (CEE) countries. Critics argue that the macroeconomic policies adopted after the fall of communism have neither produced significant growth nor balanced growth in CEE countries. Poor macroeconomic policies have been identified as the main determinant of deteriorating income growth and distribution. How macroeconomic indicators changed the pattern of inequality in the transition period has long been an issue of interest for academics and policymakers.

Aghion and Commander (1999, p.290) argue that the policies adhered to in Central Europe have led to a rapid increase in income inequality with slow growth, and discrepancies in income distribution persist among the private sector. Bartlett (2009, p.35) argues that entrepreneurs in the Western Balkan countries faced many difficulties in developing businesses, with a lack of access to finance being among the most important ones. Since loans were channelled to larger companies, small businesses needed high collateral and faced higher interest rates, which in turn enabled only a marginal number of companies to develop into competitive medium-sized companies. Moreover, Bartlett (2009, p.35) emphasizes that while large companies were linked to economic and political elites and established their monopoly positions in the

market, they also affected economic policy in a way that harmed the development of small businesses for many years in most Western Balkan countries.

Overall, a sharp increase in income inequality in Central and Eastern European countries prevailed for a long period, not only in the aftermath of communism. Comparing data from the 1987-1988 period to the 1993-1995 period, Milanovic (1998) reports that in transition countries, the average Gini coefficient rose sharply from 24 to 33. Similarly, Heyns (2005), in her review of inequality in CEE, concludes that income inequalities had increased regardless of age, education, and health status. The latest empirical evidence indicates similar patterns of income inequality and economic growth relationships in transition economies. Brzezinski's (2018) empirical research demonstrates that the main driver of inequality in CEE was falling full-time employment, while Velkovksa, Trenovski, and Kozheski (2020) find strong evidence to support the persistence of the Kuznets curve hypothesis in selected Balkan countries, attenuated by the slow growth dynamics over the last decade in these countries.

A more in-depth empirical analysis of the relationship between GDP and inequality, assessing various influencing factors such as labor market institutions, market power control of companies, social benefits, and taxes in Eastern Europe, reveals that inequality declined in countries with high taxes, strong labor rights, and effective control of market power alongside steady economic growth (Jovanovic 2015). Carvalho, Nepal, and Jamasb (2016), using the LSDVC technique, estimate how market reforms impact the human development index. Their study demonstrates that reforms in transition countries are very complex with diverse, although predominantly worsening impact on the human wellbeing. On the other hand, Bandelj and Mahutga (2010) find that privatization is an important factor of influence, strongly related to patterns of inequality growth. Precisely, the results of their research indicate that privatization has increased income inequality in post-socialist European countries. Thus, evidence from transition and emerging market economies indicates that neither banks nor stock markets reduce inequality, implying that financial market development fails to reach poor individuals (Seven and Coskun 2016). Koczan (2016) argues that the transition process has thus been more traumatic for people in the Western Balkans. Analyzing poverty perceptions on the household level, the author attempts to explain the dissatisfaction of people even in years with high growth and acknowledges subjective perception as the reason behind feeling poorer than actually being poor by definition. A recent study (Roy-Mukherjee and Udeogu 2021) concluded that in the presence of an effective institutional framework, economic growth is inversely related to income inequality in the Western Balkan countries, suggesting that improving institutional quality as well as the level of unionization seems to reduce both within-country and cross-country income inequality. However, research by Kovac and Verbic (2023) shows that there is no statistically significant relationship between government efficacy, corruption, and wealth inequality, although the long-run impact of domestic credit on wealth inequality is negative. Their sample includes worldwide statistics on wealth inequality, including transition economies.

The inconclusive results regarding the relationship between income inequality and economic growth in transition economies are noteworthy. In view of this, it is essential to reconsider and re-examine the empirical evidence on this matter. Existing literature highlights significant methodological drawbacks, mainly stemming from data constraints in transition economies. Specifically, there is a substantial lack of empirical evidence on the income inequality and economic growth relationship in the context of less developed Western Balkan countries, while the relationship between financial development and income inequality in transition countries remains fairly under-researched.

More precisely, the empirical literature is far from conclusive when it comes to examining the impact of both financial market development and institutional quality on income inequality in Western Balkans. Given the theoretical premises and the literature review, however, both factors are considered important in mitigating increasing income disparities in transition countries. The importance of these factors has been previously assessed only to a very limited extent, mainly due to insufficient data on WBs.

Overall, the impact of financial market development and institutional quality on income inequality in WB countries has been substantially under-researched, while the effects of these institutional factors have not been studied in an integrated framework. This article contributes to the existing empirical literature on income inequality in several ways. First, it examines which factors influence income inequality in the specific context of the WB region. Second, it includes data on income inequality and institutional factors covering larger time period. Third, it estimates the effects of institutional factors on income disparities in a single model covering WB countries which postulate the important and a very specific context of this research.

The WB region is unique as it reflects a group of transition economies that embarked on the course of

economic transition fairly lately compared to Central and Eastern European countries. The transition from socialism to capitalism in most WB countries has been disrupted by war, leading to physical devastation of productive resources, economic isolation, and stagnation, with far-reaching consequences on these countries' prospects for growth and integration into the European and global economic structures. The stop-and-go pattern of growth in WB countries has been associated with deep structural problems prevalent in these economies, resulting in bleak outcomes of transition reform and EU integration processes in most of these countries (Silajdzic and Mehic 2016; Silajdzic and Mehic 2022). Steady growth performance at the beginning of transition was accompanied by persistently high unemployment rates and growing income disparities. WB countries were hard hit by the outbreak of the financial crisis in 2008, from which they are still recovering. These developments have left many deprived of employment opportunities, while unbalanced growth patterns are linked to prolonged deindustrialization (Damiani and Uvalic 2014; Uvalic 2014; Bartlett and Uvalic 2022) and seemingly associated with growing income inequalities.

Nevertheless, financial market development and progress in institutional transformation in these countries have been considered important in mitigating unbalanced growth patterns. Therefore, in this analysis, an attempt is made to analyse the income inequality and economic growth relationship and investigate whether or not financial market development and the rule of law have helped in reducing income inequalities in these countries.

While previous literature analysing the impact of financial market development on economic growth suggests that financial market development underpins economic growth in Western Balkan countries, only a few papers analyse the determinants of income inequality in this region while the effect of financial market development on income inequality remains fairly under-researched. As demonstrated by the empirical literature review, data insufficiency presents a major drawback when it comes to income inequality studies covering the WB region.

In this paper, we rely on panel data with a longer time period and study the income inequality and economic growth relationship in an integrated framework. Specifically, this paper contributes to recent literature by analysing the effect of financial market development and institutional quality on income distribution among WB countries, using static panel estimators and covering a longer time period.

4. The Data

Our dataset consists of an unbalanced panel dataset for the period 1996–2019. The countries belonging to the Western Balkans are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, The Republic of North Macedonia, and Serbia (European Cluster Collaboration Platform). However, due to data unavailability for certain variables, we do not include Kosovo in this study.

Consistent with most of the literature, in this study, economic growth is proxied by GDP per capita, which is calculated as gross domestic product divided by the population. We obtain the data on income per capita from the Penn World Tables (PWT - version 10.01). Although there are other measures of income inequality, the Gini coefficient is the most widely used in the literature and is available for a longer time period. The data on the Gini coefficient we use here are new and improved high-quality data taken from the Standardized World Income Inequality Database (SWIID) prepared by Frederick Solt (2020) version 9.1.

Following previous literature on the matter (Beck, Demirgüç-Kunt, and Levine 2007; Huang, Lin, and Yeh 2009; Ben Naceur and Zhang 2016; Seven and Coskun 2016; Jauch and Watzka 2016; De Haan and Sturm 2017; Weychert 2020), we use domestic credit to the private sector by banks (% of GDP) as a proxy for financial market development. The data on this indicator are obtained from the Development Indicators Database of the World Bank, which is available from 1996.

Following earlier literature and conceptual propositions on the importance of institutional quality in comprehending the income inequality and economic growth relationship, we use the rule of law as a proxy for institutional quality (Greenwood and Jovanovic 1990; Chong and Gradstein 2004; Law, Tan, and Azman-Saini 2014; Bennet and Nikolaev 2016). Data for the rule of law is sourced from the Worldwide Governance Indicators compiled at the World Bank. The definition of the rule of law (Kaufmann, Kraay, and Mastruzzi 2010, p.4) is given as "capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence."

Variable definitions, measurements, and sources of data for each of the variables are provided in Table 1.

The summary statistics for the non-logarithmic forms of the dependent and explanatory variables of the unbalanced panel covering the period 1996-2019

are presented in Table 2. It demonstrates the wide range and significant discrepancies of per capita income levels in the sample, ranging from just over $1464 (Albania in 1997) to about $7684 (Montenegro in 2019). The overall sample mean is approximately $4345.

Regarding inequality, the mean of the Gini coefficient equals 50.06, with the maximum value (above

Table 1. Variable definitions, measurements and sources

Variable	Definition of Variable	Measurement	Source
GDP per capita	Real GDP at constant national prices, obtained from national accounts data for each country divided by population	Real GDP at constant 2017 national prices (in mil. 2017US$) divided by population.	Penn World Tables (PWT - version 10.01)
GINI	The Gini coefficient measures income inequality; min is 0; max is 100 percent, or 1.0	Gini index of inequality in equivalized household (pre-tax and pre-transfer) income.	SWIID (2020) version 9.1.
CREDIT	Domestic credit to private sector by banks (% of GDP)	Financial resources provided to the private sector by other depository corporations such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment.	IMF, International Financial Statistics and data files, and World Bank and OECD GDP estimates.
LAW	Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Measure is constructed from diverse views on governance of many stakeholders worldwide, including tens of thousands survey respondents and experts. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	World Bank (Worldwide Governance Indicators)
GOV	Government consumption of a country (% of GDP)	Government consumption at constant national 2017 prices/GDP at constant national 2017 price	Penn World Tables (PWT - version 10.01)
UNEMPL	Unemployment, total (% of total labour force)	Modelled ILO estimate	World Bank
AGRI	Agricultural land (% of land area)	The share of land area that is arable, under permanent crops, and under permanent pastures.	World Bank
NATRES	Total natural resources rents (% of GDP)	The sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	World Bank

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std.	Min	Max
GINI	101	50.06	2.74	46.1	55.3
GDP	129	4345.09	1371.13	1464.29	7684.18
CREDIT	117	37.36	17.05	3.26	86.45
LAW	114	-0.36	0.29	-1.27	0.32
GOV	122	18.05	4.52	9.45	29.94
UNEMPL	130	21.77	7.27	9.01	38.8
AGRI	125	41.02	6.99	16.59	52.46
NATRES	121	1.34	17.05	3.26	86.45

Source: Author's own calculation.

55.3) corresponding to Macedonia, and the minimum (below 46.1) corresponding to Albania in 1996. Given the substantial discrepancies in income inequality and economic growth levels across time and among countries included in the sample, we consider and examine alternative models while carefully considering the goodness of fit of individual models estimated.

5. The Model and Methodology

Our measure of income inequality is expected to be a direct function of income per capita, domestic credit to the private sector by banks (% of GDP), rule of law, and a vector of factors (Z) commonly examined in the income inequality literature:

$$GINI = f(GDP, CREDIT, LAW, Z)$$

To avoid inefficient estimators, stationarity is checked for each variable. All variables except unemployment are stationary. While the unemployment variable is not stationary, the difference of this variable is stationary.

Our estimation strategy utilizes linear static panel data models where all explanatory variables are dated contemporaneously with income per capita and the Gini coefficient variables. In order to assess the effect of financial development and institutions on income inequality, fixed effects and random effects models are utilized.

Initially, income inequality is regressed on GDP per capita and related indicators. Then, control variables are included in regression models. Extended model for income inequality takes the following form:

$$lGINI_{it} = \beta_1 + \beta_2 lGDP_{it} + \beta_3 lCREDIT_{it} + \beta_4 lLAW_{it}$$
$$+ \beta_5 llAGRI_{it} + \beta_6 D.UNEMPL_{it} + \beta_7 lNATRES_{it} + u_{it}$$

All variables are in natural logarithmic forms where *i* denote country and *t* stands for time. $GINI_{it}$ denotes the Gini coefficient, $CREDIT_{it}$ is proxy for financial development, GDP_{it} is GDP per capita (constant 2017 US$) and LAW_{it} is proxy for quality of institutions.

The set of control variables is added following commonly accepted cross-country income inequality literature. Control variables are taken from the World Bank Development Indicators Database. Since data on wealth inequality and land Gini are not available for countries in our sample, we use agricultural land (% of land area) data, which refers to the share of land that is arable. This variable may serve as a determinant in the inequality equation since increasing inequality promotes agricultural expansion. Thus, government consumption shares in GDP, agricultural land, unemployment, and natural resources (% rent) are considered as control variables.

Most of the cross-section studies use OLS, while studies using panel data employ estimators such as fixed effects, random effects, GMM, etc. Although the GMM estimator has been employed to handle endogeneity issues, Hansen (2008, p.1) states that GMM is a large sample estimator and thus is not suitable for our small sample dataset with only five units.It is important to control for unobserved heterogeneity or individual-specific effects to get valid parameters. Hsiao (2007, p.10) states that individual-specific effects can be random or fixed.

6. Empirical Analysis

In this section, we present the empirical results of the research, with a focus on estimation results and model diagnostics. We estimate the model where income inequality is the dependent variable and start with a baseline model. First, we estimate the effect of GDP per capita, the rule of law, and credit on income inequality. Table 3 presents the results of the empirical estimation of five different model specifications, each with the Gini coefficient as the dependent variable. Each model specification consists of a given set of explanatory variables for credit and the rule of law, along with a given set of control explanatory variables for the analyzed time frame.

In the first model specification (Model 1), income per capita, credit, and the rule of law variables are included. The poolability test obtained by comparing fixed effect estimates and pooled regression rejects the null hypothesis that all fixed effects are jointly 0, indicating that country effects are present. A Hausman test is performed to decide whether fixed or random effects models fit better. Estimation of the model takes into account the results of the assumption tests of heteroscedasticity, autocorrelation, and cross-sectional dependence. Utilizing a one-way random effects Driscoll-Kraay model using Stata 17 statistical software package, we find that income per capita and the rule of law are significant. The estimated coefficient of credit has a negative sign; however, it is insignificant.

In the second model specification, agricultural land (% of land area) data is added as a control variable. In line with diagnostic tests, as the Hausman test suggests, we use a one-way error component model with fixed effects. Suspecting heteroscedasticity, cross-sectional dependence, and autocorrelation in the data, a one-way fixed effects model with standard

Table 3. The estimation of models with FE and RE (Dependent variable lGINI)

	Model (1)	Model (2)	Model (3)	Model (4)	Model(5)
GDP	0.091***	0.069***	0.091***	0.085***	0.062***
	(0.017)	(0.020)	(0.016)	(0.015)	(0.009)
CREDIT	-0.007	-0.001	-0.007	-0.005	0.002
	(0.004)	(0.004)	(0.004)	(0.003)	(0.002)
LAW	-0.029**	-0.015	-0.029*	-0.020	-0.007
	(0.012)	(0.013)	(0.014)	(0.015)	(0.012)
AGRI		-0.039***			-0.038***
		(0.008)			(0.005)
GOV			0.003		0.004
			(0.009)		(0.001)
UNEMPL				0.002***	0.001***
				(0.001)	(0.001)
NATRES					0.006***
					(0.001)
Constant	3.100***	3.424***	3.089***	3.145***	3.476***
	(0.165)	(0.178)	(0.115)	(0.123)	(0.098)
Obs.	91	91	91	89	89
Groups	5	5	5	5	5
R-squared	0.217	0.763	0.646	0.655	0.832

***, ** and * denote significance at 1%, 5% and 10% respectively.

errors is used. Results reveal that indicators for financial development and institutional quality are insignificant. On the other hand, the estimated coefficient for agricultural land is significantly negative at the 5% level. We re-run the analysis by substituting the control variable of government expenditure. The effect of the size and type of government spending is important in determining the relationship between income inequality and government expenditure. However, the results summarized in Table 3 demonstrate that while income per capita and the rule of law are significant, credit and government expenditure variables are not significant.

Considering the importance of assessing the impact of employment patterns on income inequality, Model 4 includes unemployment as a variable. Results clearly demonstrate that the rule of law and credit have a negative sign but are not statistically significant. While the coefficient estimate of unemployment has a positive sign, its impact is small.In the extended Model 5, which integrates natural resources (% of rent), we check for the previously tested determinants. The regression parameter indicates a significant positive relationship between the Gini coefficient and income per capita. Agricultural land is found to have a significant negative impact on income inequality. The positive effects of unemployment and natural resources suggest that they contribute to the suggested growing income disparities in the Western Balkan countries. Lastly, the obtained coefficient of the credit variable is negative, although not significant at the 5% level. Hence, its negative impact on the Gini coefficient has no significant effect. The rule of law indicator has a statistically significant and negative effect on income inequality in the Western Balkan countries in the first and third models. However, it is important to note that this finding is not consistently robust across the various models employed in this study. Moreover, the statistically significant effect of the rule of law variable in the first model need be interpreted with caution taking into consideration the random effect method of estimation applied in the first model, as well as the low level of R squared and the low goodness of fit obtained for the first model. Last but not least, in the third model the estimated coefficient of the rule of low variable is significant only at the 10% level, which seems noteworthy given the small sample size. In view of these, we conclude that improvements in financial market development and in the rule of low have not been associated with decreasing income inequalities in WB countries.

7. Discussion of Results

The findings based on the application of panel data regression in five different equations consistently reveal a positive and highly significant parameter of income per capita. Increases in economic growth underpin income inequality in the countries of the Western Balkans, indicating that economic growth plays a major role in the rise of income inequality. We find that, despite differences in specification of the estimated models, we obtain stable and consistent results when it comes to examining the relationship between economic growth and income inequality. The differences in models or methods of estimations used do not affect the sign, significance or the magnitude of the main variable of interest. This result is consistent with previous research claiming a positive relationship between economic growth and income inequality (Li and Zou 1998; Forbes 2000; Scholl and Klasen 2019). Thus, the suggested positive impact of economic growth on income inequality is in line with theoretical proposition suggesting that economic growth and income inequality go hand in hand, bringing further empirical evidence that support the proposition that income inequality is an inherent weakness of the free-market system. In other words, improvements in economic efficiency are not necessarily associated with improvements in social equity. The theoretically proposed 'trickle- down effect' of economic growth on income inequality seems loose. Essentially, the results of this research highlight the importance of structural weaknesses of the economy that underpin income disparities. Economic policy leading to more balanced growth both in terms of sectoral as well as spatial distribution seems essential for more fair and just distribution of income and wealth. This is to say that the negative impact of economic growth on income inequality is conditional. Income disparities may rise even in times of steady and persistent growth and even over long time span, as seems to be the case of Western Balkan countries. Hence, many economists posit the view that countries simply choose economic growth over fairness in view of the substantiated trade-off between equity and efficiency in the economic literature.

Effect of financial markets development on the Gini coefficient is suggested to be negative in all models. However, the obtained coefficient on this variable is not statistically significant. Similarly, the rule of law variable appears to have no mitigating effect on income inequality in Western Balkans. As noted earlier, the significant coefficient is obtained only in certain models, but this finding is not consistently robust across all models and highlights the need for further research.

Regarding control variables, agricultural land is found to have a significant negative impact on the Gini coefficient across various models, while the value of the regression parameter for government expenditure is not statistically significant. Unemployment and natural resources (% rent) significantly contribute to income disparities in the Western Balkan countries. With regard to the latter variable, the positive impact of unemployment rate on income inequality has been a priori expected. However, given the slow dynamics of employment growth in WB countries over the course of transition, the obtained result seems particularly worrying.

An important policy implication stemming from this analysis is that rising inequality is an inherent component of GDP per capita growth in the Western Balkans. Despite the acknowledged importance of financial market development and institutional framework for growth, the study did not find significant evidence suggesting that these important market and institutional developments play a role in reducing income inequalities in the region. This underscores the need for further investigation into the structural weaknesses of these economies. Understanding the underlying reasons behind the obtained statistically insignificant results is complex phenomenon and is beyond the scope of this research. It seems plausible to conclude that problems in transition countries need to be understood before we draw any conclusions pointing to the sources of income inequality growth in the Western Balkans region.

8. Conclusion

In summary, determining the factors influencing income inequality in the Western Balkan countries is a complex task, and the direction and strength of these determinants may vary depending on several factors. Regression results with Driscoll-Kraay standard errors demonstrate that income per capita increases income disparities. Based on the results obtained from different models, it can be concluded that income per capita underpins income inequality in the WB countries. This result aligns with theoretical expectations, as there is no trickle-down effect, particularly in economies characterized by high unemployment, low competitiveness, and sectoral imbalances, as is the case for most WB countries. Considering the depth and the complexity of the structural weaknesses associated with these economies as demonstrated by the previous literature reviewed in this paper, it comes as no surprise that this research finds that economic growth feeds income inequality.

Financial market development, proxied by domestic credit to the private sector by banks, has a negative sign; however, the estimated parameters are not statistically significant at the 5% level. Therefore, caution is warranted in interpreting these results, given the sample size and degrees of freedom. Contrary to prevailing literature, our analysis finds no significant impact of financial development on income inequality in these countries. This finding raises concerns as it suggests that financial instruments may not be effectively used to reduce income disparities.

The strong implication resulting from this research is that the character of up-to-date financial market developments seems ineffective, and additional and alternative financial instruments need to be developed to better serve the interests of the poor and vulnerable segments within these societies. Likewise, institutional quality may play a more prominent role in shaping income inequality in the Western Balkan countries.

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