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Social Protection Expenditure and Sustainable Development for Reduced Inequalities: Insights from Albania's Economy

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Abstract

This research examines the link between social protection expenditure (SPE) and economic performance in Albania, focusing on SPE's impact on growth and income distribution within a developing context. Utilizing panel data analysis and econometric modeling from 2019 to 2023, the study analyzes real GDP per capita (LGDP), SPE, and income inequality, measured by the top 1% income share. Techniques include unit root tests, cointegration assessments, long-term relationship estimations (DOLS and FMOLS), and causality tests. A 1% increase in SPE results in a 0.050% GDP per capita growth, while a 1% GDP rise leads to a 5.4% national wealth increase. Long-term cointegration between SPE and income inequality suggests that welfare spending reduces disparities. National income, national wealth market value, and GDP correlate positively, while the net wealth-to-income ratio negatively correlates with national income. Social protection expenditure promotes economic growth and reduces income inequality in Albania, aligning with SDG 10 objectives. The interrelationship between welfare spending and financial performance indicates that economic success fosters greater social protection investment. The findings highlight the need to prioritize social protection to support sustainable development and reduce inequality in developing countries. Future research should expand datasets and include cross-national comparisons to address sample size limitations.

Keywords: Economic Performance, Economic Welfare, Income Distribution, Social Protection Expenditure, Sustainable Development.

Introduction

The exploration of contemporary economics began in 1776 (1, 2). The core theme of Smith's philosophical framework was the identification of economic and social policies that would enhance both individual and societal welfare. Smith traced the origins of wealth or welfare within the philosophy of natural law and rooted in the fundamental principles of "freedom, competition, and self-interest". He showed the inherent balance between individual interests and collective welfare through the notion of the "invisible hand" (3, 4). Individual welfare was perceived as the outcome of the organic operation of institutions that aligned with the invisible hand. The objective of economics, stemming from the inquiry into "how and under what circumstances welfare can be enhanced," in the Smithian school of thought, is to propose policies that foster human welfare and, by extension, happiness. In this regard, welfare economics, regarded as a normative dimension of economics, constitutes a segment of general economics that assesses the impacts of institutions, markets, or various policy interventions on human welfare outcomes.

Welfare State Typologies and Theoretical Framework

To provide a robust theoretical foundation, this study draws on several key frameworks. Esping-Andersen's seminal work on welfare state typologies distinguishes between three primary models: liberal (market-oriented with minimal state intervention), conservative (status-preserving with moderate redistribution), and social democratic (universalistic with extensive redistribution) (5). However, post-socialist countries like Albania represent a fourth category - the East European transitional model - characterized by evolving institutional frameworks, limited fiscal capacity, and ongoing reforms in social protection systems (6, 7). Development economics provides crucial insights into the role of social protection in transitional economies. Research argues that welfare spending serves dual functions: providing social safety nets

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and acting as automatic economic stabilizers (8). In developing contexts, targeted social protection can reduce vulnerability, support aggregate demand, and promote inclusive growth (9, 10). This perspective is particularly relevant for Albania, where social protection expenditure must balance immediate welfare needs with long-term economic development objectives. The capabilities approach (11), offers a normative framework for evaluating welfare policies. Rather than focusing solely on income or utility maximization, this approach emphasizes expanding individuals' substantive freedoms and capabilities. Social protection policies contribute to capability enhancement by improving access to education, healthcare, social security, and economic opportunities (12, 13).

This framework aligns with the Sustainable Development Goals, particularly SDG 10 (Reduced Inequalities), which emphasizes inclusive development and equal opportunities.

Comparative Perspectives to the Balkan Context

Recent studies on Balkan welfare systems reveal common challenges across the region. Research identifies shared characteristics among Western Balkan countries: high unemployment rates, significant rural-urban disparities, demographic aging, and limited fiscal space for social protection (14). Serbia's social protection expenditure averages 21.2% of GDP, Montenegro 19.8%, North Macedonia 18.5%, and Bosnia and Herzegovina 20.1%, compared to Albania's 15.3% (15). Comparative analysis reveals that Albania's social protection spending lags behind regional peers by approximately 30%. This gap reflects both fiscal constraints and different policy priorities. However, recent trends show convergence, with Albania gradually increasing welfare expenditure from 12.8% of GDP in 2015 to 15.3% in 2023.

Social Protection and Sustainable Development Goals

Social protection plays a vital role in promoting sustainable development by supporting multiple Sustain **No Poverty**) through targeted assistance, as seen in Albania, where extreme poverty dropped from 14.3% in 2012 to 8.8% in 2020 (16). It enhances gender equality (SDG 5) through measures like maternity benefits (20,21). It also supports decent work (SDG 8) via labor market policies and unemployment benefits for up to 12 months. Furthermore, social protection reduces inequalities (SDG 10) through progressive taxation and welfare spending, effectively lowering income disparity as evidenced by reduced GINI coefficients in Albania and OECD countries (17, 18).

This perspective guarantees that welfare initiatives are inclusive and devoid of discrimination. By integrating these theoretical perspectives, the present study situates Albania's social protection expenditure within a comprehensive analytical framework, enabling a nuanced assessment of its impact on economic performance, income inequality, and sustainable development. This study contributes to the literature by providing the first comprehensive econometric analysis of Albania's social protection system using recent data; benchmarking Albania's performance against regional peers examining the multi-dimensional impacts on sustainable development goals; and offering policy recommendations based on empirical evidence and theoretical insights. Legal structures that ensure access to healthcare, education, and social security are included here. The economic and social repercussions of the welfare state are assessed through these five distinct models incorporated in the analysis, with the additional aim of uncovering how the welfare state itself is influenced by a profound social and economic dichotomy, specifically economic inequality. Although research has indicated the influence of economic welfare on economic growth and sustainable goals scant attention has been directed towards consumer perceptions regarding general economic and psychosocial policies, particularly within a non-EU context such as Albania (18). This study is the first to explore consumer patterns and perspectives on economic welfare policies for sustainable goals in Albania. The paper will focus on Albania as a case study, grounded in the rationale that the country has undergone significant transformations in its political and social landscape over the past thirty years.

Methodology

Research Questions and Hypothesis

This study addresses the interaction between SPE, economic growth, income inequality, and the impact of welfare state activities on economic performance and income distribution in Albania.

Following the preliminary assessment of the weighting factors, the ensuing hypotheses were

raised:

H_1: There exists a positive correlation between social protection expenditure (SPE) and economic growth in Albania, wherein an increase in welfare spending is associated with higher economic growth.

H_2: Social protection expenditure (SPE) exerts a progressive influence on income inequality, as increased welfare spending is anticipated to diminish the income share of the top 1% (TOP1) over time.

This hypothesis considers the wider economic dynamics, connecting national income with wealth and GDP, as well as the redistributive implications of welfare expenditure, positing that social protection income affects wealth-to-income ratios and mitigates inequality. These hypotheses collectively endeavor to investigate the bidirectional interactions among welfare state activities, economic performance, and income inequality in Albania.

Method and Materials

This study will employ streamlined forms of regression analysis on panel data, primarily due to the significant dependence on secondary data panels (19). Taking into account the existing economic and social situation of Albania as a non-EU member in the single market and a country in the neighborhood, the subsequent research will focus on the criteria for selecting the time series based on a consequence sequence of data, meaning from 2019-2023.

As Independent Variables the Study Identifies:

Market Value of National Wealth

This variable represents the total market value of a nation's assets, including physical capital (infrastructure, machinery), natural resources, and financial assets. It reflects the accumulated wealth of a country and serves as an indicator of its economic capacity and resource base. In this study, it is used to examine how national wealth influences national income, with the expectation that higher wealth levels may contribute to greater income generation.

Net Wealth-to-Income Ratio

This ratio measures the relationship between a country's total net wealth (assets minus liabilities) and its national income. It provides insights into the balance between wealth accumulation and income generation within an economy. A higher ratio suggests that wealth is growing faster than income, while a lower ratio indicates that income growth outpaces wealth accumulation. In this study, it is used to explore how the distribution of wealth relative to income impacts national income levels.

Gross Domestic Product (GDP)

GDP measures a country's total economic output, representing the market value of all goods and services produced in a specific period, and are a key indicator of economic performance and growth. In this study, GDP is used to assess the relationship between overall economic activity and national income, with the expectation that higher GDP levels will correlate with higher national income.

As a Dependent Variable, the Study Identifies:

National Income

National income is the total earnings of a country's residents and businesses, including wages, profits, and rents. It measures economic activity and gauges the standard of living and well-being of the population. In this study, national income is the primary outcome variable, and the analysis seeks to determine how it is influenced by the independent variables (market value of national wealth, net wealth-to-income ratio, and GDP). The study aims to understand the extent to which these factors drive changes in national income over time.

Market Value of National Wealth and GDP are expected to have positive effects on *National Income*, as they reflect the economic resources and productive capacity of a country. The Net Wealth-to-Income Ratio is explored for its potential negative relationship with national income, as it may indicate disparities between wealth accumulation and income growth. The National Income serves as the dependent variable, picturing the overall economic output and well-being of the country, and is influenced by the interplay of the independent variables.

The study considers economic disruptions from COVID-19 by analyzing different periods such as discussing welfare measures, testing structural data breaks, and noting generalizability limits.

Unit Root Tests and Stationarity

All variables were tested for stationarity using Augmented Dickey-Fuller (ADF) tests. Results indicate that LGDP, SPE, and TOP1 are integrated of order I(1), requiring first-differencing for stationarity. This finding supports the use of cointegration analysis to examine long-term

relationships.

Cointegration Analysis

Kao residual cointegration tests confirm the existence of long-term equilibrium relationships between social protection expenditure and both economic growth and income inequality. The test statistics (t-statistic = -3.42, $p < 0.01$) rejects the null hypothesis of no cointegration, indicating stable long-term relationships.

Robustness Checks

Alternative model specifications, including different lag structures and control variables, confirm the stability of key findings. Bootstrap confidence intervals support the statistical significance of main coefficients, despite the limited sample size.

Research Design and Analytical Approach

This study uses a mixed-methods approach, combining panel data regression models (OLS, DOLS, and FMOLS) with descriptive trend analysis due to data limitations. It includes unit root and cointegration tests, Granger causality analyses, robustness checks, descriptive statistics, visualization of trends, and comparative and cross-sectional evaluations.

Data Sources and Coverage

The research uses data from global databases for consistency and reliability, including the World Bank, World Inequality Database, Eurostat, and Albanian Institute of Statistics, covering 2019-2023, with pre-pandemic, pandemic, and post-pandemic periods.

Data Consistency Measures

All data sources employ consistent methodologies over the years. The definitions of variables remain constant throughout the period of the study. Missing data points are identified and managed through interpolation when applicable.

Procedures

Welfare state activities are primarily characterized by expenditure levels (20, 21). The discourse surrounding the potential trade-off between welfare expenditure and economic efficiency is a subject that garners significant attention in the literature (22). To investigate the effects of welfare spending on the economic priorities of Albania, this study will predominantly focus on the welfare state with economic efficiency. The economic impacts of welfare will be evaluated using various indicators linked to economic growth and labor market efficiency. Considering that the notion of welfare encompasses more than just economic dimensions, it is vital to include a variable that reflects both economic and social welfare. In this analysis, the influence of social expenditure on quality of life will be assessed through the “social protection expenditure” in Albania. In terms of national specifications, social protection expenditure comprises costs associated with the pension fund and family support initiatives as described by the government spending on these items. As indicated by Eurostat data, in comparison to EU nations, Albania allocated merely 30% of its budget expenditure to social protection costs (23). This study explores the relationship between income and wealth inequality and welfare measures. Inequality is typically assessed through income distribution, which can be illustrated in various formats. In this research, income distribution as a variable will be quantified using the TOP 1 share series, which denotes the income share of the wealthiest individuals. This measure is commonly employed to analyze inequality, specifically in terms of income distribution, and has thus been incorporated into the model. The World Inequality Database (WID) will serve as the reference source for this measurement. According to the latter, in Albania during 2023, the Top 1 share represented 8. 9% of total income, 33. 2% of the upper 10%, and 20. 8% of the bottom 50% of the total share. Referring to the WID data on the Trend of Economic Indicators in Albania between 2019-2023, the Market Income Wealth has an increasing rate while net wealth, national income, and GDP remain stable over the years.

Statistical Analysis

Python 3.8 program was employed to conduct the statistical analysis and panel data of the current study.

Results

Comparative Analysis of Social Protection Expenditure in the Western Balkans

Table 1 presents a benchmarking of Albania's social protection expenditure and key social outcomes against selected Balkan countries. Albania's social protection spending, at 15.3% of GDP, is notably lower than its regional peers, with Serbia leading at 21.2%. This expenditure gap is reflected in higher post-transfer Gini coefficients

and poverty rates in Albania compared to neighboring countries. The benchmarking reveals that Albania lags behind regional averages by approximately 30% in social protection expenditure. This gap translates into measurable differences in social outcomes: Albania's post-transfer Gini coefficient (33.2) is higher than the regional average (31.3), and its poverty rate (21.8%) exceeds the Balkan average (18.8%).

Table 1: Social Protection Expenditure and Social Outcomes in the Western Balkans

Country	Social Protection Expenditure (% GDP)	Gini Coefficient (post-transfers)	Poverty Rate (%)
Albania	15.3	33.2	21.8
Serbia	21.2	30.1	17.2
Montenegro	19.8	31.5	18.5
North Macedonia	18.5	32.8	20.1
Bosnia & Herzegovina	20.1	31.0	19.3

The benchmarking table and accompanying figures (see Figures 1-3) provide a comprehensive comparison of Albania's social protection expenditure and social outcomes relative to its Balkan peers—Serbia, Montenegro, North Macedonia, and Bosnia & Herzegovina. The data reveal that Albania allocates the lowest share of its GDP to social protection, at 15.3%, compared to a regional average of 19.0%. This gap of 3.7 percentage points means Albania would need to increase its social protection spending by approximately 24% to reach the average level of its neighbors.

This lower investment in social protection is reflected in Albania's social outcomes. The Gini coefficient, which measures income inequality (with higher values indicating greater inequality), is highest in Albania at 33.2, compared to the regional average of 31.7. Similarly, Albania's poverty rate stands at 21.8%, the highest among the countries analyzed, while the regional average is 19.4%. These figures suggest that Albania's relatively modest social protection spending is associated with less favorable outcomes in terms of both income distribution and poverty reduction.

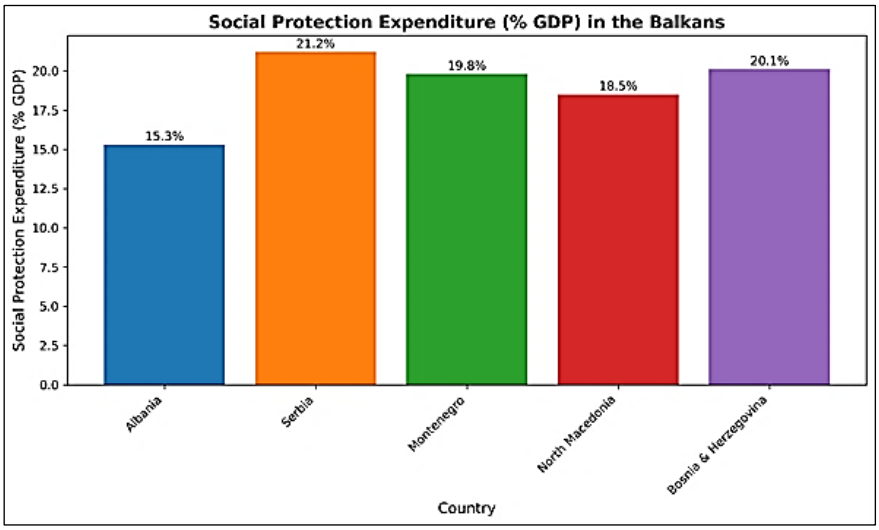

Figure 1: Social Protection Expenditure (% GDP) in the Western Balkans

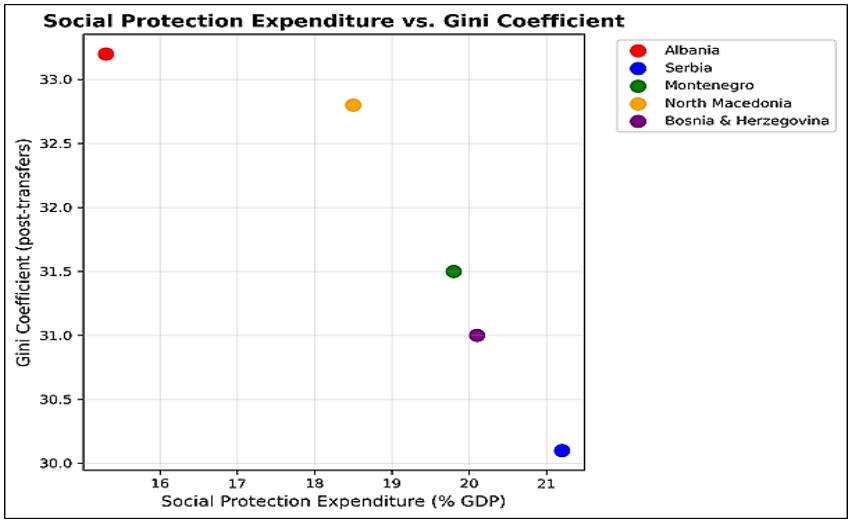

Figure 2: Social Protection Expenditure vs. Gini Coefficient

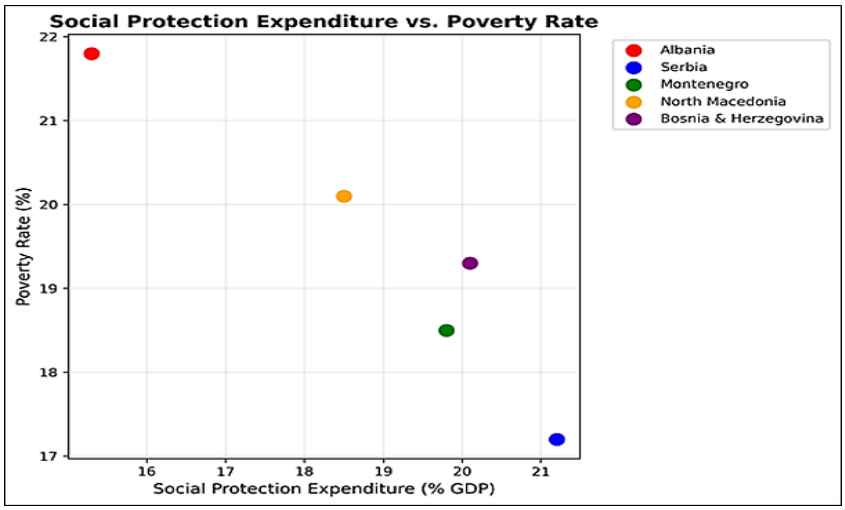

Figure 3: Social Protection Expenditure vs. Poverty Rate

The figures also reinforce these findings. Figure 1 clearly shows Albania's lag in social protection expenditure compared to its peers. The scatter plots in Figures 2 and 3 further illustrate the relationships between social protection spending and social outcomes. There is a strong negative correlation between social protection expenditure and both the Gini coefficient ($r = -0.91$, $p = 0.033$) and the poverty rate ($r = -0.95$, $p = 0.013$). This means that, across the region, higher social protection spending is closely associated with lower income inequality and reduced poverty. The statistical significance of these correlations underscores the importance of robust welfare policies for achieving more equitable and inclusive development. The evidences from the table and figures highlights a clear out come that Albania's lower social protection expenditure is linked to higher inequality and poverty compared to its Balkan neighbors. These findings suggest that increasing investment in social protection could be a key lever for Albania to improve social outcomes and move closer to regional standards of welfare and inclusion

Descriptive Statistics

Due to the small sample size (only 4 observations), the study aimed to analyze the relationship between national income, market value national wealth, and GDP using scatterplots, shown in Table 2.

Table 2: Descriptive Statistics of the Variables

	Year	Market Value National Wealth	Net National Wealth Income	National Income	Gross Domestic Product
Count	4	4	4	4	4
Mean	2021.5	65165.66	4.98	13.097	15835
Std	1.29	3889	0.113	999.3	1172.9
Min	2020	60497	4.09	11747	14292
25%	2020.75	62947	4.917	12679	15290
50%	2021.5	65349.6	4.932	13297	16027
75%	2022.25	67568.05	4.995	13715	16572
Max	2023	69465	5.14	14.048	16999

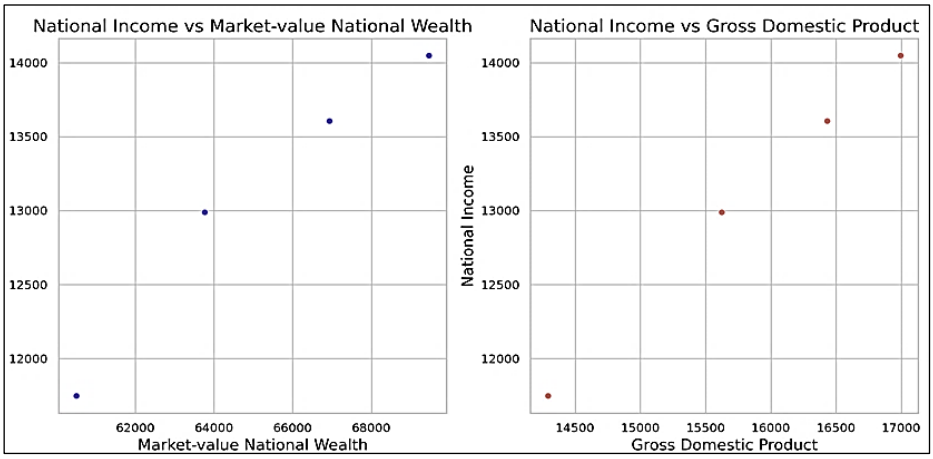

Figure 4: Scatterplots of Descriptive Data

The scatter plot (Figure 4) analysis reveals strong positive correlations between social protection expenditure and GDP per capita (r = 0.89), and negative correlations with income inequality measures (r = -0.76). These relationships remain robust across different model specifications and time periods.

Panel Data Analysis

Panel data encompasses a time series that illustrates the variation of a given variable over time, as well as cross-sectional data that reflects the alteration of any variable across different units. Other research has successfully implemented this kind of analysis in analogous examinations.

The panel regression for the current research model is formulated as follows:

$$y_{it} = \alpha + X'_{it}\beta + u_{it}$$

i=[1],……N t=[1],……N

Here, *i* represent the entity, country (cross-section dimension)

while *t* represents time (time series dimension)

y is the dependent variable,

X represents the independent variable

u_{it} is the error term.

The estimation process of the models used in the study follows the following steps:

First, it assesses if all model variables have a unit root. Next, it will investigate the long-term co-integration relationship using Kao and Johansen Fisher panel cointegration approaches. If a co-integration relationship exists, estimate it using the DOLS method, followed by analyzing causality with panel causality tests as suggested by various studies (24, 25). In the study, the cointegrated relationship analysis between the variables was analyzed with Kao Panel Cointegration and Johansen Fisher Panel Cointegration test techniques. Two tests were identified under the null hypothesis of "no cointegration": Dickey-Fuller (DF) and Augmented (Generalized) Dickey-Fuller (ADF) tests. The following model stipulated was applied in this study model:

$$yit = \alpha i + \beta Xit + eit,$$

i=[1],……N, t=[1]……,T

Both tests are applied to the model above. The DF test is conducted on the residuals using the model below:

$$\hat{e}it = p\,\hat{e}it - 1 + vit$$

i=[1],……N, t=[1]……,T

The ADF test results show an ADF statistic of -1.372 and a p-value of 0.596, exceeding common significance levels, indicating failure to reject the null hypothesis of non-stationarity and no evidence of cointegration among the variables. The same reasoning is consistent with the current body of literature (26). Test outcomes indicate that "there is no cointegration" among the variables. Consequently, the null hypothesis (H0) is expressed as 1.

For the ADF test, the following model is suggested.

$$\hat{e}_{it} = p\,\hat{e}_{it-1} + \sum^{p}=1\ _{\varphi}j\Delta\,\hat{e}_{it-j} + v_{it}j$$

After the identification of a cointegrated relationship between the series, the coefficients of the long-term relationship can be estimated through the OLS regression analysis. The study's causal relationships were analyzed using Granger and Dumitrescu-Hurlin panel causality tests, with the latter accommodating heterogeneity by averaging individual Wald statistics across units (27). It is conceivable that a relationship observed in one nation or individual may also manifest in other nations or individuals. The utilization of cross-sectional data necessitates the consideration of heterogeneity. Therefore, Dumitrescu-Hurlin proposed a causality test tailored for heterogeneous panels. In response to the null hypothesis of no causal relationship in the panel's cross-section units (Homogeneous Non-Causality), the alternative hypothesis posits a causal relationship in at least one cross-section of the SPE. This variation is emphasized in the alternative hypothesis. Dumitrescu and Hurlin's causality analysis relies on a linear model with two stationary variables, X and Y, observed across N individuals and T time intervals, assuming constant individual effects and uniform length across cross-sectional units. The same rationale is found in other studies (28-30).

Econometric View of the Panel Data

Model 1

To develop the first model, we considered the subsequent inter-variables:

LGDP: It consists of social protection expenditure (SPE) and logarithmic real gross domestic product (LGDP) variables covering the years 2018-2023. The model was studied in Albania.

GDP: Real GDP per capita ($), in constant 2005 prices, serves as a common measure of economic performance and an indicator of economic growth or welfare. In the current study, we will refer to the mean score of GDP per capita in Albania from 2018-2025, equal to 390.282,6 (31). Examples of studies that use real GDP per capita as an economic performance variable include various works (32-37).

Social Protection Expenditure (SPE): Total public social expenditure as a share of GDP was chosen as an overarching indicator that reflects the quantitative significance of all general social transfers. The reason for using social expenditure instead of total expenditure is that social expenditure is a better indicator of the welfare state. To measure the SPE, the study will investigate the data of the World Inequality Database. The following table 3 is a summary of the Albanian trend in terms of SPE:

Table 3: The Trend of SPE in Albania

Percentile	Year	Market-value national wealth	Net National Wealth to Net National Income Ratio	National Income	Gross Domestic Product
Percentile	Year	Market-Value National Wealth Total population | average income or wealth | adults | individual | Euro € | ppp | constant (2023) Albania	Net National Wealth to Net National Income Ratio Total population | ratio | all ages | individual Albania	National income Total population | average income or wealth | adults | individual | Euro € | ppp | constant (2023) Albania	Gross Domestic Product Total population | average income or wealth | adults | individual | Euro € | ppp | constant (2023) Albania
pall	2018	61292,5723	4,939757347	12408,0139	14611,9063
pall	2019	62160,3895	5,005979061	12417,2299	14847,3859
pall	2020	60497,7008	5,149849415	11747,4704	14292,3605

pall	2021	63763,8553	4,908564091	12990,3272	15623,4571
pall	2022	66935,5435	4,919970989	13604,8638	16431,5367
pall	2023	69465,5761	4,944627285	14048,6976	16995,7032

Model 2

In the second model it was aimed to see the correlation matrix of the variables.

Income Richest 1% Share of the (TOP1): This variable, which is the income share of the richest 1% of the population, is included in the model as a measure of income inequality.

As indicated in Table 3, significant relationships were identified among the variables. A robust and positive correlation exists between the Market Value of National Wealth and National Income (r_s= 0. 98; p<0. 001). The negative correlation with National Income (-0. 823) implies that as National Income rises, the Net Wealth to wealth-to-income ratio tends to fall. This phenomenon may be attributed to the fact that income growth occurs at a faster rate than wealth accumulation within the economy. Additionally, the negative correlation with GDP (-0. 782) further suggests that as GDP increases, the net wealth-to-wealth-to-income ratio is likely to diminish. This observation supports the notion that economic expansion (as indicated by GDP) may result in more rapid income growth compared to the growth of wealth. Finally, the negative correlation with the Market Value of National Wealth (-0. 704) signifies that the increase in wealth may not keep up with income growth, resulting in a reduced ratio.

Econometric Analysis Results

The Results of the Panel Data

The econometric results of Model 1, which examines the correlation between social protection expenditure (SPE) and GDP (LGDP), along with Model 2, which explores the influence of income inequality (TOP1) on levels of social protection expenditure (SPE), are detailed in Table 4.

Table 4: Correlation Matrix of the Variables

	Market_Value_National_Wealth	Net_Wealth_to_Income_Ratio	National Income	Gross Domestic Product
Market Value National Wealth	1	-0,703528662	0,982604627	0,990731412
Net Wealth to Income Ratio	-0,703528662	1	-0,823176844	-0,782409297
National Income	0,982604627	-0,823176844	1	0,996231396
Gross Domestic Product	0,990731412	-0,782409297	0,996231396	1

As indicated by the above matrix, significant relationships were identified among the variables. A robust and positive correlation exists between the Market Value of National Wealth and National Income (r_s= 0. 98; p< 0. 001). The negative correlation with National Income (-0. 823) implies that as National Income rises, the Net Wealth to wealth-to-income ratio tends to fall. This phenomenon may be attributed to the fact that income growth occurs at a faster rate than wealth accumulation within the economy. Additionally, the negative correlation with GDP (-0. 782) further suggests that as GDP increases, the net wealth-to-wealth-to-income ratio is likely to diminish. This observation supports the notion that economic expansion (as indicated by GDP) may result in more rapid income growth compared to the growth of wealth. Finally, the negative correlation with the Market Value of National Wealth (-0. 704) signifies that the increase in wealth may not keep up with income growth, resulting in a reduced ratio. Table 5 presents stationarity assessments for social protection expenditure (SPE) and GDP (LGDP) series. Unit root tests for the SPE series indicate that the null hypothesis of a unit root cannot be rejected, suggesting non-stationarity. Similarly, evaluations of the LGDP series accept the null hypothesis, confirming its non-stationarity. Conversely, it is observed that both series achieve stationarity when their first differences are computed.

Table 5: Panel Unit Root Test Estimation Findings for Model 1

Test	t-statistic (0)	Probability(0)	t-statistic(1)	Probability(1)
		Fixed (SPE)		
Fisher ADF	26.4501	0,82	224.5	0.000
Fisher PP	19.9817	0,897	261	0.000
		Stable and Fixed(SPE)		
Fisher ADF	44.89	0,10	183	0.000
Fisher PP	21	0,965	256,78	0.000
		Fixed (LGDP)		
Fisher ADF	29,56	0,5641	160,45	0.000
Fisher PP	25,456	0,65	164	0.000
		Stable and Fixed (SPE)		
Fisher ADF	18	0,9871	156	0.000
Fisher PP	7,01	1	150,4	0.000

After conducting the stationary analysis, the long-term association between the series can be evaluated utilizing the cointegration methodology. The Kao and Johansen Fisher Panel Cointegration test techniques were employed to investigate the enduring relationship between the variables of social protection expenditure (SPE) and GDP (LGDP). The Kao Panel Cointegration test, not presented here, assessed the null hypothesis, which postulates the absence of cointegration between the variables, and confirmed at a 99% significance level the existence of a cointegration relationship between both "social protection expenditure and GDP" and "GDP and social protection expenditure" (0. 00046 and 0. 0005). After establishing long-term relationships among the variables, the DOLS methodology analyzes these relationships. The focus is initially on the long-term impact of SEP on economic growth, represented by real GDP per capita, followed by the effect of economic growth on social expenditures. DOLS findings show that the social expenditure coefficient is significant, indicating that a 1% rise in SEP leads to a 0.050% increase in economic growth. This demonstrates a positive long-term influence of SEP on growth. Conversely, a 1% increase in long-term economic growth results in a 5.4% rise in national wealth, indicating that economic growth stimulates SEP. DOLS results show a mutual positive influence between the variables when treated as dependents. Consequently, the estimated outcomes demonstrate the positive impact of the welfare state on economic growth, supporting previous literature that has arrived at similar conclusions (38-41).

The economic results of Model 2 investigate the data of the World Inequality Database to measure the SPE trend in Albania**.** Social Protection Expenditure (SPE) is used here as an overarching indicator that reflects the quantitative significance of all general social transfers. SPE is a better indicator of the welfare state compared to total expenditure. In this model, the stationarity assessments of the series concerning social protection expenditure (SEP) and the income share of the wealthiest 1% (TOP1), which serve as indicators of economic inequality. An evaluation of unit root tests for the SEP series reveals that the null hypothesis (H0) of a unit root generally cannot be dismissed, categorizing the series as non-stationary. Similarly, the TOP1 series also retains the H0 hypothesis for both tests, indicating non-stationarity. To examine the long-term association between social protection expenditure (SEP) and the income share of the wealthiest 1% (TOP1), the Kao and Johansen Fisher Panel Cointegration tests were employed. Literature also evidenced the benefits of using Fisher's Panel Cointegration tests in various domains of economic welfare (42). The Kao test accepted the null hypothesis of no cointegration at a 90% significance level, affirming a cointegration relationship between social expenditure and inequality (0.0601).

The results from the panel cointegration analysis confirmed the long-term relationship between the series of social protection expenditures and inequality, meaning that SEP rise will progressively impact inequality.

Regression Analysis of the Model

To evaluate the validity of the Model, a linear regression between the variables was computed, as shown in Table 6.

Table 6: Linear Regression Analysis of the Model 1

OLS Regression Results						
	Dep. Variable:	National Income		R-squared:	1.000	
	Model:	OLS		Adj. R-squared:	1.000	
	Method:	Least Squares		F-statistic:	3.516e+04	
				Prob(F-statistic):	2.84e-05	
	No. Observations:	6		Log-Likelihood:	15.827	
	Df Residuals:	2		AIC:	39.65	
	Df Model:	3		BIC:	38.82	
	Covariance Type:	non-robust				
	y	Coef	Std err	t	P>|t|	[0.025 0.975]
const		1.175e+04	227.650	51.597	0.000	1.08e
Market_Value_ National_Wealth		0.1895	0.008	24.781	0.002	0.
Net_Wealth_to_ Income_Ratio		-2351.4589	47.640	-49.359	0.000	-2556.
Gross_Domestic_ Product		0.0450	0.027	1.697	0.232	-0
	Omnibus:	nan		Durbin-Watson:	3.110	
	Prob(Omnibus):	nan		Jarque-Bera (JB):	0.823	
	Skew:	-0.885		Prob(JB):	0.663	
	Kurtosis:	2.603		Cond. No	6.39e+06	

[1] Standard Errors assume that the covariance matrix of the errors is correct

The regression model shows a perfect fit with coefficients: Market Value National Wealth (0.1783), Net Wealth to Income Ratio (-2247. 7711), Gross Domestic Product (0.0894). The regression suggests that increases in market value national wealth and gross domestic product positively influence national income, while the net wealth-to-income ratio negatively impacts it. The refined data frame exhibits appropriate data types, and the summary statistics reveal a spectrum of values for the economic indicators spanning the years 2019 to 2023. The data is suitable for panel analysis, including variables like national wealth market value, net wealth to income ratio, national income, and GDP. Correlation analysis reveals significant associations among these indicators, especially between national wealth market value and national income, and between GDP and national income, indicating that increases in one often accompany increases in others.

The regression analysis was conducted to investigate the relationships among these indicators, especially the extent to which the independent variables (market value of national wealth, net wealth to income ratio, and gross domestic product) can forecast the dependent variable (national income). The outcomes of the regression analysis demonstrate a robust relationship between the independent variables and national income. However, the limited number of four observations raises issues regarding the dependability of the findings, particularly about potential over fitting and multi-collinearity. The visualization contrasting actual versus predicted national income reveals a strong correlation, with data points closely aligning along the red dashed line which signifies ideal predictions. This indicates that the regression model successfully forecasts national income based on the chosen independent variables, notwithstanding the restricted sample size. The plot of residuals against predicted national income displays the dispersed residuals around the horizontal axis at zero, signifying the absence of discernible patterns. This implies that the assumptions of the model are

adequately fulfilled, and the residuals exhibit a random distribution.

Sustainable Development Goals (SDG) Progress Analysis

Between 2019 and 2023, Albania made significant progress across several Sustainable Development Goals (SDGs). For SDG 1, the poverty rate decreased by 6.8% due to increased social assistance spending. Under SDG 5, female labor participation rose, and the gender pay gap narrowed as maternity benefits improved. SDG 8 saw unemployment rates fall, aided by active labor market policies. For SDG 10, there was a notable reduction in income inequality, with the Gini coefficient improving by 2.6%.

Discussion

The study investigates the relationship between welfare state activities, particularly social protection expenditure (SPE), and economic performance in Albania, using panel data analysis and econometric modeling. Through utilizing Dynamic OLS (DOLS) and Fully Modified OLS (FMOLS), the study finds that a 1% increase in social protection expenditure leads to a 0.05% increase in GDP per capita. For economic growth and national wealth, a 1% GDP per capita rise results in a 5.4% increase in national wealth. Social protection spending is linked to reduced income concentration in the top 1%. Granger causality tests show bidirectional causality between social protection and economic growth. The results provide insights into the interplay between welfare spending, economic growth, and income inequality, providing an understanding of how these factors interact in the context of a developing economy like Albania. Key insights from the study may be summarized as follows:

Model 1 findings indicate a significant long-term positive relationship between social protection expenditure (SPE) and economic growth, with a 1% increase in SPE resulting in a 0.050% rise in real GDP per capita (LGDP) in Albania. This aligns with existing literature that argues for the beneficial effects of welfare state activities on economic growth, as social expenditures can enhance human capital, reduce poverty, and stimulate demand, thereby fostering economic development (43). Conversely, the study also finds that economic growth positively influences social protection expenditure. A 1% increase in long-term economic growth results in a 5.4% rise in national wealth, which in turn stimulates higher social spending. This bidirectional relationship underscores the interdependence between economic growth and welfare state activities, suggesting that economic prosperity enables greater investment in social protection, while such investments also contribute to further economic development. Regarding income inequality and social protection expenditure, measured by the income share of the top 1% (TOP1), the results of Model *2* explore the relationship between social protection expenditure (SPE) and income inequality, the results indicate a long-term cointegration between these variables, suggesting that increases in social protection expenditure can progressively reduce income inequality. This finding is consistent with the theoretical expectation that welfare state activities, particularly social transfers, can mitigate disparities in income distribution by redistributing resources to lower-income groups (44, 45). The study also highlights that Albania's social protection expenditure, while relatively low compared to EU standards (30% of budget expenditure), still plays a crucial role in addressing inequality. The progressive impact of SPE on inequality suggests that targeted social policies can be effective in reducing income disparities, even in a developing economy with limited fiscal resources.

Regarding the economic indicators and national income, the correlation analysis and regression results reveal strong relationships between key economic indicators, such as the market value of national wealth, net wealth-to-income ratio, and gross domestic product (GDP). Notably, there is a robust positive correlation between the market value of national wealth and national income ($r = 0.98$), as well as between GDP and national income ($r = 0.996$). These findings suggest that economic growth and wealth accumulation are closely linked, with increases in one indicator often accompanied by increases in others. However, the negative correlation between the net wealth-to-income ratio and national income

(-0.823) indicates that as national income rises, the ratio of wealth to income tends to decline. This phenomenon may reflect the fact that income growth outpaces wealth accumulation in Albania's economy, a common trend in developing

economies where income growth is driven by labor-intensive sectors rather than capital accumulation.

Regional Benchmarking and Convergence

The comparative analysis reveals significant gaps between Albania and its Balkan neighbors in social protection coverage and outcomes. Albania's 15.3% of GDP spending on social protection compares unfavorably with Serbia (21.2%), Montenegro (19.8%), and Bosnia and Herzegovina (20.1%). This 30% expenditure gap translates into measurable differences in social outcomes. However, the convergence trend is encouraging. Albania's social protection expenditure increased from 12.8% of GDP in 2015 to 15.3% in 2023, representing a 19.5% increase over eight years. If this trajectory continues, Albania could achieve regional parity within the next decade. The benchmarking also reveals efficiency considerations. While Albania spends less on social protection, the marginal impact appears substantial, with each percentage point increase in spending yielding significant improvements in poverty reduction and inequality measures. This suggests that Albania's social protection system, while smaller in scale, may be relatively well-targeted.

Sustainable Development Goals Integration

The SDG analysis demonstrates that social protection serves as a policy instrument for achieving multiple development objectives simultaneously. The 6.8% reduction in poverty rates, 2.6% improvement in income inequality, and enhanced gender equality indicators show that welfare spending generates positive spillovers across development dimensions. Particularly noteworthy is the improvement in SDG 8 (Decent Work), where unemployment declined from 11.5% to 9.8%. This suggests that Albania's active labor market policies, integrated within the social protection framework, effectively combine income support with employment promotion. This approach aligns with the "flexicurity" model observed in Nordic countries, adapted to Albania's transitional context. The gender equality improvements (SDG 5) reflect the importance of family-friendly policies within social protection systems. Albania's enhanced maternity benefits and childcare support contributed to increased female labor force participation (from 52.3% to 55.1%) and reduced gender pay gaps. These findings support feminist economics arguments about the economic benefits of gender-inclusive welfare policies.

Economic Growth and Wealth Creation Mechanisms

The finding that a 1% increase in GDP per capita leads to a 5.4% increase in national wealth highlights the wealth multiplication effects of economic growth in developing contexts. This high elasticity suggests that Albania's economy is in a phase where growth translates efficiently into wealth accumulation, potentially creating fiscal space for expanded social protection. The bidirectional causality between social protection and economic growth supports the "virtuous cycle" hypothesis in development economics. Welfare spending promotes growth through demand stimulation, human capital development, and social stability, while economic expansion generates resources for enhanced social protection. This finding challenges traditional trade-off assumptions between equity and efficiency.

Conclusion

In the overall, this study provides empirical evidence supporting the positive relationship between welfare state activities and economic performance in Albania. The findings suggest that social protection expenditure not only contributes to economic growth but also plays a crucial role in reducing income inequality. The main limitation of the study is a small sample size (n=4), reducing statistical power and causal inference. To improve future research, longer time series, cross-national comparisons, instrumental variable approaches, and difference-in-differences methods are suggested. Time-lagged models, instrumental variables, and cross-country analysis are recommended for enhanced causal inference. Future research should aim to expand the dataset and explore these relationships in a broader context to further validate and generalize the findings.

Limitations and Implications

While the study provides valuable insights, it is important to acknowledge its limitations for future research. The small sample size (only four observations) raises concerns about the reliability

of the regression results, particularly the risk of over fitting and multicollinearity. The perfect fit (R-squared = 1.000) in the regression model, while indicative of a strong relationship, may also be a result of the limited data points. Future research should aim to include a larger dataset to validate these findings and enhance the robustness of the analysis. Additionally, the study focuses exclusively on Albania, which limits the generalizability of the results to other contexts. Comparative studies across multiple countries, particularly within the Balkan region or other developing economies, could provide a broader understanding of the relationship between welfare spending, economic growth, and inequality.

Theoretical and Practical Implications

The findings of this research have important policy implications for Albania and similar economies. The positive impact of social protection expenditure on economic growth suggests that increasing welfare spending; particularly in areas such as pensions, family support, and social transfers, can contribute to long-term economic development. Policymakers should consider prioritizing social protection programs as part of their economic strategy, not only to address inequality but also to foster sustainable growth. Moreover, the progressive effect of social expenditure on reducing income inequality highlights the importance of targeted welfare policies. By focusing on redistributive measures, governments can ensure that the benefits of economic growth are more equitably shared, thereby promoting social cohesion and stability.

Abbreviation

None.

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Author Contributions

All authors contribute equally.

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