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ESTIMATION OF THE IMPACT OF CONSUMER SPENDING ON THE ECONOMIC GROWTH OF THE WESTERN BALKAN COUNTRIES–PANEL ANALYSIS

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ABSTRACT

Consumer spending plays a vital role in sustaining long-term economic growth, especially in economies where domestic consumption serves as the main driver, such as those of the Western Balkan countries. This study examines the key determinants of consumer spending and its influence on economic growth across six Western Balkan economies—Kosovo, Albania, North Macedonia, Montenegro, Bosnia and Herzegovina, and Serbia—over the period 2000–2020. Grounded in macroeconomic theory and supported by a broad body of empirical literature, the research applies a panel data econometric approach using secondary data derived from the World Bank Development Indicators. To ensure robustness, several models were employed, including Pooled OLS, Fixed Effects, and Random Effects, with the Hausman–Taylor test identifying the most appropriate specification. The empirical results reveal that consumer spending exerts a positive and statistically significant impact on economic growth across the region, confirming the World Bank's classification of these economies as consumption-led. Furthermore, the analysis highlights the varying effects of macroeconomic variables such as inflation, unemployment, employment, population growth, savings, foreign direct investment, and remittances. While inflation and savings display a positive and significant association with GDP growth, variables like employment, remittances, and FDI show limited short-term effects, though their long-term potential remains evident. This study enhances the theoretical and empirical understanding of growth dynamics in transitional economies. It also offers relevant policy implications, emphasizing the need to promote employment and wage growth, strengthen savings and investment channels, improve remittance efficiency, and maintain macroeconomic stability to ensure sustainable and inclusive economic development in the Western Balkans

KEYWORDS: Gross Domestic Product, Consumer Expenditure, Panel, Fixed, Random Effects Model, Growth, Western Balkan.

1. INTRODUCTION

Consumer spending is the most important driving force behind sustainable economic development and growth. The impact of consumer spending on economic growth originates from developments in macroeconomic perspectives. However, an important question is whether, beyond the effects of income (including expected income) on consumption, households also base their consumption decisions, in part, on the value of their assets or net wealth (Caceres, 2019).

(Caceres, 2019) It analyzes the existence of "wealth effects" arising from net capital (in the form of housing, financial assets, and total net worth) on consumption. These effects suggest that changes in the value of assets, such as property or financial investments, can influence household consumption decisions. When the value of these assets increases, households may feel wealthier and thus more inclined to spend, even if their income remains unchanged. The study uses longitudinal data at the household level from the Panel Study of Income Dynamics (PSID), covering around 7,000-9,000 families in the U.S., with the analysis conducted over the period 1999-2017 The study finds that wealth effects are relatively large and significant for housing wealth, i.e., real estate, but less so for other types of wealth, including stocks. Another empirical study that attempts to assess household expenditures utilizes the Ordinary Least Squares (OLS) method, applied to a linear regression model to estimate household demand functions (total household consumption expenditures, food consumption expenditures, and non-food household consumption expenditures). The results show that household socio-economic characteristics, ownership of productive assets, wealth conditions, and controls on the location of the household economy are among the key drivers of consumer expenditures. Another study utilizes panel data from 2005–2018 for 10 developing Asian economies, including Bangladesh, Cambodia, India, Indonesia, Malaysia, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam. Given the heterogeneous nature of the region, the study applies a variant of the popular St. Louis equation model, using the panel framework of the Autoregressive Distributed Lag (ARDL) model, based on the Pooled Mean Group (PMG) and Dynamic Fixed Effect (DFE) models developed by Pesaran and Shin, to study the fundamental relationships. Both the PMG and DFE models suggest a strong positive relationship between money and household consumption expenditures, both in the long term and in the short term. After allowing for control variables such as government final consumption expenditure and interest rates, the relationships remain stable. (Mahanty, Rout, & Mishra, 2021). At the same time, accommodative monetary policies have directly reduced income and wealth inequality; however, there is little evidence that low interest rates have led to a generalized increase in household debt, supporting the view that the overall economic expansion is sustainable according to this perspective (Dossche, Forsells, Rossi, & Stoevsky, 2018). According to the perspectives of the development of macroeconomic schools of thought, the importance of consumer spending in sustainable economic growth and economic development becomes evident. Furthermore, based on the World Bank's assessments, the Western Balkan countries (the WB6) — including the Republic of Kosovo, North Macedonia, Albania, Bosnia and Herzegovina, Montenegro, and Serbia, which are also the countries analyzed in this study — are characterized as economies primarily driven by consumption. Consumption represents a highly important component and a solid foundation for economic growth and economic development. Therefore, the main scope of the topic addressed in this research focuses on the determinants of consumer spending and the impact of consumer spending on economic growth, while also considering related variables such as the employment rate, unemployment rate, population growth rate, inflation, foreign direct investment, and savings. At the same time, these variables also represent the conceptual variables of the econometric model, which are considered sufficiently suitable to explain the effect on economic growth. The conceptual variables of the econometric model have been selected based on a review of the empirical literature.

Based on the importance of this topic, the main objective of this study is to reflect the theoretical aspects of the determinants of consumer spending and to assess the impact of consumer spending on economic growth in the Western Balkan countries, using secondary data for the six Western Balkan countries for the period 2000-2020. The panel data have been sourced from the World Bank Indicators.

The research objectives are as follows

1. To elaborate on the importance of consumer spending and its trends for the period under analysis (2000-2020);
2. To elaborate on the quantitative importance of the key determinants of consumer spending for the Western Balkan countries.
3. To assess the correlation of the conceptual

variables;

4. To assess the importance of employment vs. unemployment in consumer spending.

The research questions raised in this study are as follows

1. What are the determinants of consumer spending?
2. What is the weight of the determinants of consumer spending in the economic growth of the Western Balkan countries?
3. What are the main challenges of the determinants of consumer spending in the Western Balkan countries?
4. Does employment vs. unemployment have an effect concerning the rising population growth rate and consumer spending?

Decisions regarding consumer spending are motivated by a range of factors, but the main determinant is household income. In principle, households base their consumption on their current and expected disposable income, which comes from labor compensation and returns from their wealth, including both financial and non-financial assets. Disposable income also reflects employment rates and private remittances. Therefore, a higher employment rate leads to an increase in disposable income, and similarly, the higher the private remittances, the greater the opportunities for consumer spending. For this reason, the analysis of this study includes both employment rates and private remittances, which, alongside consumer spending and the growing population rate, are expected to have a positive impact on the economic growth of the Western Balkan countries The hypotheses raised in this study have theoretical and empirical grounding presented earlier in the research subject.

The hypotheses in this study are

H1: Consumer spending has a positive impact on the economic growth of the Western Balkan countries.

H2: The conceptual variables related to (i) the growing population rate; (iii) the total employment rate; (iv) personal remittances, and (v) foreign direct investments have a positive impact on the economic growth of the Western Balkan countries.

H3: Inflation and the unemployment rate harm the economic growth of the Western Balkan countries.

H4: Savings have a positive impact on the economic growth of the Western Balkan countries.

The hypotheses raised in this study are based on theoretical foundations and are supported by macroeconomic schools of thought. However, the hypotheses are tested using the Fixed Effect, Random Effect, and Hausman-Taylor econometric models, with panel data provided by the World Bank indicators, covering the period from 2000 to 2020.

This study is of great importance not only because it enriches macroeconomic theory, but also because it provides a guide for policymakers in order to stimulate consumer spending and, consequently, achieve sustainable economic growth. Not coincidentally, the World Bank also classifies the Western Balkan countries as economies primarily based on consumption, which is why it is essential to stimulate the growth of consumer spending.

Despite a considerable body of empirical and theoretical research examining the relationship between consumer spending and economic growth, there remains a notable gap in understanding this linkage within the specific socioeconomic and structural context of the Western Balkan economies. Existing studies have predominantly focused on advanced economies or large emerging markets, where institutional stability, financial development, and income structures differ substantially from those of transitional economies in the Western Balkans. Consequently, the unique economic composition of this region—characterized by small market size, high dependence on remittances, limited industrial diversification, and a consumption-driven growth model—has often been underexplored in the global economic discourse.

Furthermore, previous literature has rarely conducted a comprehensive and comparative panel data analysis encompassing multiple Western Balkan countries to simultaneously assess the interaction between consumer spending and a broad range of macroeconomic determinants such as inflation, savings, employment, population growth, and foreign direct investment. Most available studies address these variables in isolation, failing to capture their joint and dynamic influence on long-term economic performance.

This study fills that gap by providing an integrated econometric assessment of consumer spending determinants and their impact on economic growth across six Western Balkan countries—Kosovo, Albania, North Macedonia, Montenegro, Bosnia and Herzegovina, and Serbia—over the period 2000–2020. By contextualizing the findings within the region's transitional economic landscape, the research contributes novel empirical evidence and offers policy-oriented insights tailored to the developmental challenges and opportunities of small, open, and consumption-led economies in

Southeast Europe

2. LITERATURE REVIEW

The economies of the Western Balkan countries are economies with inherited economic problems, characterized by high unemployment rates, slow economic growth, and numerous issues in reforms and the implementation of the rule of law. When it comes to consumer spending, it is of great importance for the economic development of the respective countries. Consumer spending is the first pillar in the equation for calculating Gross Domestic Product (GDP). At the same time, consumer spending is of great importance for sustainable economic growth and economic development. Consumption mainly depends on income, meaning that an increase in income is expected to raise consumer spending as well. However, alongside the economic theories that explain the determinants of consumer spending, factors such as inflation accompanied by price increases, interest rates for loans, employment, and unemployment, and remittances received from the diaspora are just a few of the factors that influence the growth of disposable income, as well as the increase in consumption. Consumer spending encompasses a wide range of microeconomic and macroeconomic factors that influence its increase or decrease. Referring to the importance that consumer spending has on economic growth, it is essential to also examine the factors or determinants of consumer spending. From this perspective, the scientific research objectives have been raised, which encompass more specific segments that are addressed in this study.

(Aryusmar , 2020) it analyzes the effect of household consumption, investments, government spending, and net exports on the Gross Domestic Product (GDP) of Indonesia, using linear regression analysis with data from the 2014-2019 quarters. The study concludes that there is a significant positive effect between household consumption and GDP, while the variables of investment, government spending, and net exports do not have a significant effect on GDP. (Radulescu, Serbanescu, & Sinisi, 2019) they use Panel Least Squares and Pool Least Squares to assess the impact of exogenous variables on economic growth measured by Gross Domestic Product per capita and their effect on the unemployment rate in both the short and long term, with data from eight EU countries for the period 2004-2017. The study concludes that private consumption is positively linked to economic growth in the short term, but does not support the job creation process in the same way, as the savings rate cannot determine the positive effects on employment. Kharroubi & Kohlscheen (2017) use the Fixed Effect econometric model and show that while factors such as the increase in credit and rising house prices can boost consumption in the short term, the incidence of consumption-led growth and increasing debt service ratios significantly reduce growth in the medium and long term.

Household consumption is generally considered the ultimate goal of economic activity, and the level of per capita consumption is often seen as a central measure of a nation's productive success. Thus, consumption is one of the main determinants of citizens' well-being at the global level. This study used a multivariate counteraction approach to analyze the macroeconomic determinants of household consumption expenditures in Ghana. The sample period consists of annual time series data from 1961 to 2013. The Vector Autoregressive model and the Johansen counteraction approach were used to capture the short-term and long-term relationships between selected macroeconomic variables and household consumption in Ghana. The counteraction analysis revealed a significant long-term relationship between real household consumption and the selected macroeconomic variables, with a marginal propensity to consume of 0.7971. The counteraction analysis revealed a significant long-term relationship between real household consumption and the selected macroeconomic variables, with a marginal propensity to consume of 0.7971. Granger causality, impulse response analysis, and variance decomposition indicated that, in the short term, household consumption is influenced only by changes in price levels, while there is a significant effect on the real exchange rate and real economic growth. The findings reported in this study are valuable for understanding the macroeconomic role of household consumption expenditures in the Ghanaian economy (Bonsu & Muzindutsi, 2017).

According to (Sugiarto & Wibow, 2020), from the demand side, household final consumption expenditures are the leading cause of economic slowdown in the case of Indonesia. One effort is the maintenance of stability in the macroeconomic factors that influence it. The study in question utilizes a panel data regression model with the First Difference Generalized Method of Moments (FD-GMM) approach, applied to data from 33 provinces from 2010–2019. The application of FD-GMM provides robust estimations. The results of the parameter significance test provide evidence that the real lag of HFCE, regional real gross domestic product (RGDP), and government expenditures have

a significant positive effect on real HFCE. Meanwhile, both inflation and unemployment rates have had a significant negative impact. Research by (Alp & Seven, 2020) explores the dynamics of household final consumption in Turkey by analyzing the relationship between household final consumption and wealth in Turkey, which stems from capital channels and the housing market during the period from the first quarter of 1998 to the second quarter of 2016. The study uses the common time series methods ARDL and FMOLS to analyze long-term relationships. Subsequently, variance decomposition and impulse response analysis are used to verify the effects of shocks. The study concludes that income, loans, and housing wealth positively influence consumption, while interest rates and stock market wealth are negatively associated with consumption in the case of Turkey. Another research analyzes a different dimension of household expenditures or private consumption, specifically the study by (Batrancea, 2021), which uses a sample of 28 countries within the European Union and assesses the extent to which economic growth and inflation impact economic growth and household consumption during the period from December 2019 to October 2020. This research applies the generalized method of moments panel and panel least squares (with cross-sectional weights, fixed effects over time) and concludes that economic stability and household consumption were significantly shaped by indicators of economic growth and inflation. Specifically, the negative impact of inflation was much stronger than the positive impact of economic growth, and the opposite applies in the case of household consumption. Specifically, the negative impact of inflation was much stronger than the positive impact of economic growth, and the opposite applies in the case of household consumption. The study concludes that there may be policy implications regarding the strategies that public authorities, companies, and individual consumers can apply to stimulate national economies in times of crisis.

3. RESEARCH METHODOLOGY

In this part of the research, the econometric model modified and adapted for this study is specified, based on a wide range of theoretical and empirical studies presented in the literature review section. It is emphasized that, based on the documented literature review and international authors, the econometric model in this study has been adapted and specified. This research is primarily based on international literature reviewed by publishers such as Emerald, Sage, Elsevier, and other international platforms, as well as national and regional literature. This study utilizes a quantitative research method, with secondary data being used, which has been sourced from the World Bank indicators for the period 2000-2020. In the analysis of this study, the Western Balkan countries included are: The Republic of Kosovo, Albania, North Macedonia, Montenegro, Bosnia and Herzegovina, and Serbia. Based on the research background, this study is empirical, and the data consist of panel data. The econometric model used for testing the hypotheses and primarily for achieving the objective of the research is based on economic and empirical theory and has been adapted and modified according to Arapova (2018), who uses panel data to test the effect of the determinants of consumer spending on economic growth in Asian countries. Furthermore, the econometric model has also been modified and adapted based on the research of Varlamova & Larinova (2015) and Amadeo (2020).

This study aims to apply econometric models to analyze the respective data. Since the dataset consists of panel data, the econometric models applied in this study include: The Pooled OLS model, the Fixed Effects model, the Random Effects model, as well as the use of the Hausman-Taylor test to determine which model is more appropriate between the fixed effects and random effects models. Additionally, GMM (Generalized Method of Moments) and IV 2SLS (Instrumental Variables Two-Stage Least Squares) models are also applied. Below, we present the main equations that represent the respective models included in the analysis of this research.

The model is specified through the initial OLS equation as follows

$$\gamma_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \quad (1)$$

Where Y represents the Gross Domestic Product (GDP), iii denotes the countries included in the study, and it represents the period, which in our case covers secondary data from the World Bank indicators for the period 2000–2020. Alongside the parameters β_0,β_1, X represents the set of factors influencing GDP, **which in our analysis include**

- Household consumption expenditures;
- The increasing population growth rate;
- The total employment rate;
- The total unemployment rate;
- Inflation;
- Foreign direct investments;
- Savings;
- Remittances.

The Fixed or Random Effects models are

presented in the second equation, while the third equation represents the Hausman-Taylor model.

$$\gamma_{it} = x_{it}\beta + \gamma_{it} \_\_\_\_(2)$$

$$\gamma_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \_\_\_\_(3)$$

From the schematic presentation of the variables used in the model, we define: Gross Domestic Product (GDP) as the dependent variable, and the independent variables in the model are as follows: (i) Household consumption expenditures; (ii) Population growth rate; (iii) Total employment rate; (iv) Personal remittances; (v) Savings; (vi) Foreign direct investments; (vii) Inflation; (viii) Unemployment rate.In addition to the empirical model, the relevant tests have also been conducted, which, according to the literature, are necessary to test the significance of the model. Since the econometric models used in panel data analysis also include GMM and IV 2SLS, below are the findings from these models and the tests for their significance.

4. RESEARCH RESULTS

In this section of the paper, the results of the study are presented, where the econometric models have been generated using the STATA software package. **The results are as follows**

Table 1: The Empirical Results of the Econometric Model GMM, FE, IV.

	(xtivreg2/GMM2s)	(xtivreg2/FE)	(ivreg2)
Variables	**GrossDomesticProduct (GDP)**	**GrossDomesticProduct (GDP)**	**GrossDomesticProduct (GDP)**
Consumer expenditures			0.0438**
			(0.0218)
Unemployment	0.534**	0.475**	-0.0322
	(0.252)	(0.189)	(0.110)
Population growth	-0.542	-0.254	0.265
	(0.877)	(0.895)	(0.866)
Employment			-0.0774
			(0.141)
Savings	0.506***	0.446***	0.0790
	(0.172)	(0.139)	(0.0627)
FDI(ForeignDirect Investments)	0.337	0.511	0.723*
	(0.235)	(0.344)	(0.371)
Inflation	0.792***	0.668***	
	(0.152)	(0.140)	
Remittances	0.0375	-0.00970	
	(0.218)	(0.208)	
Constant			4.975
			(7.794)
Observations	86	86	86
R-squared	0.316	0.330	0.084
Number of ID	6	6	

The table above presents the empirical results obtained from the econometric models, including IV GMM, IV for the random effects model, and IV reg 2. Based on the results, we have presented the value of the coefficient and the value of the variables, or more specifically, the significance of the variables in the respective econometric models.

The econometric analyses have been adapted and modified, and they have been applied, including 86 observations for 6 countries in the Western Balkans. The variables are divided into dependent variables, with Gross Domestic Product (GDP) being the dependent variable, and independent variables, which include consumer expenditures, employment, unemployment, remittances, foreign direct investments, inflation, savings, and population growth.

Evaluated according to the coefficient of determination, assessed with R-squared, we observe that the IV GMM model has a coefficient of 0.316, while the instrumented variable model for the two-stage regression, specifically IV 2SLS, has a coefficient of determination of 0.330, and the IV model has a coefficient of 0.084. Based on the value of the coefficients and their significance, it is highlighted that, according to the findings, the important variables in the IV model at this stage of the analysis are consumer expenditures and savings.

To present the significance of the model, in terms of the econometric conditions, we begin with the

coefficient of determination, R, which in our case is 0.2679. This means that the independent variables explain about 27 percent of the variation in GDP, and the remaining 73 percent remains unexplained. Additionally, the R-squared (R^2) for our model represents the measure of how well the model fits, or the coefficient of determination, taken as the proportion of the model's SS in the total SS. This indicates that the model explains about 0.1918% of the variation in GDP, leaving the remaining percentage unexplained.

4.1. Empirical Results of the POOLED OLS Mode

The variables used in the model include secondary data obtained from the World Bank indicators for the case of the Western Balkan countries. The selected variables in the model justify their selection as they have been chosen based on the research objective and the hypotheses raised in the study. The dependent variable in the model is Gross Domestic Product (GDP), while the independent variables are: unemployment, consumer expenditures, population growth, employment, inflation, savings, foreign direct investment (FDI), and remittances. The model comprises 86 observations, which include one independent variable, Gross Domestic Product (GDP), and 8 independent variables for the 6 Western Balkan countries: Kosovo, North Macedonia, Albania, Montenegro, Serbia, and Bosnia and Herzegovina.

Table 2: Empirical Results of the POOLED OLS Model.

Source	SS	df	MS	Number of obs =	86
				F(8, 77) =	**3.52**
Model	**277.605275**	**8**	**34.7006594**	**Prob > F =**	**0.0016**
Residual	**758.778699**	**77**	**9.85426882**	**R-squared =**	**0.2679**
				Adj R-squared =	**0.1918**
Total	**1036.38397**	**85**	**12.1927526**	**Root MSE =**	**3.1392**
GDP	**Coef.**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**
unemployment	**.2403362**	**.1154303**	**2.08**	**0.041**	**.0104851** **.4701873**
cosumer spending	**-.0019351**	**.0233479**	**-0.08**	**0.934**	**-.0484267** **.0445565**
population growth	**-.8973915**	**.8631151**	**-1.04**	**0.302**	**-2.616073** **.8212903**
employment	**.1688043**	**.136761**	**1.23**	**0.221**	**-.1035217** **.4411302**
Inflation	**.5973373**	**.1450146**	**4.12**	**0.000**	**.3085764** **.8860982**
savings	**.1490414**	**.0717268**	**2.08**	**0.041**	**.0062149** **.2918678**
fdi	**.3963509**	**.3697161**	**1.07**	**0.287**	**-.3398479** **1.13255**
remittances	**.2655284**	**.1406851**	**1.89**	**0.063**	**-.0146114** **.5456683**
_cons	**-15.30964**	**8.357768**	**-1.83**	**0.071**	**-31.95209** **1.3328**

In this case, the model demonstrates that the variables do not adequately represent the expected changes or impact on the dependent variable, in our case, GDP.

On the other hand, the importance or specific weight of the variables, i.e., how much an independent variable influences the dependent variable, is assessed using the p-value. This is typically presented in the form of the corresponding p-value for each variable.

Therefore, based on the findings of the Pooled OLS model, as the first entry model in the econometric analysis of panel data, in our study and under the conditions of our analysis, **the significant variables in the model based on the p-value condition (greater than 0.05) are** unemployment, inflation, savings, and remittances.

The Pooled OLS model estimates that a one percent increase in unemployment will positively impact the Gross Domestic Product by 0.2403362. This finding contradicts economic theory, as an increase in unemployment is expected to reduce the Gross Domestic Product. Inflation is expected to have a positive effect on GDP, meaning that a one percent increase in inflation will increase GDP by 0.5973373 percent.

A one percent increase in remittances will raise the GDP of Western Balkan countries by 0.2655284, or approximately 2.6 percent. After the Pooled OLS model, we will continue with the interpretation of the

results of the random effects, fixed effects, 2SLS, and GMM models.

All econometric models are based on relevant tests that assess the significance of the models and the variables included in the analysis.

4.2. Empirical Results of the Econometric Model with Random Effects

In this section of the paper, the empirical findings or the results of the econometric model with random effects are presented.

Table 3: Empirical Results of the Econometric Model Random Effect RE.

Random-effects GLS regression				Number of obs	=	86
Group variable: id				Number of groups	=	6
R-sq: within = 0.2969				Obs per group: min	=	9
between = 0.5246					avg =	14.3
overall = 0.2679					max =	19
				Wald chi2(8)	=	28.17
corr(u_i, X) = 0 (assumed)				Prob > chi2	=	0.0004
GDP	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
unemployment	.2403362	.1154303	2.08	0.037	.014097	.4665754
consumer spending	-.0019351	.0233479	-0.08	0.934	-.0476962	.0438259
population growth	-.8973915	.8631151	-1.04	0.298	-2.589066	.7942831
employment	.1688043	.136761	1.23	0.217	-.0992424	.4368509
Inflation	.5973373	.1450146	4.12	0.000	.3131139	.8815607
savings	.1490414	.0717268	2.08	0.038	.0084593	.2896234
fdi	.3963509	.3697161	1.07	0.284	-.3282794	1.120981
remittances	.2655284	.1406851	1.89	0.059	-.0102093	.5412662
_cons	-15.30964	8.357768	-1.83	0.067	-31.69057	1.071282
sigma_u	0					
sigma_e	2.359666					
rho	0 (fraction of variance due to u_i)					

Based on the p-value of the independent variables in the model, the condition of a p-value less than 0.05 is met only by some of the independent variables, which are considered statistically significant. These include: unemployment, inflation, savings, and remittances.

The other variables are insignificant under the conditions of our analysis in the random effects model. The next model used in the panel data analysis is the fixed effects model, which in most cases is considered the more appropriate econometric model when dealing with small panel datasets and analyses, as is the case in this study. Meanwhile, the findings show that a one percent increase in unemployment will lead to an increase in GDP by 0.2403362.

A one percent increase in inflation will result in a GDP increase of 0.5973373, a one percent increase in savings will raise GDP by 0.1490414, and, on the other hand, a one percent increase in remittances will increase GDP by 0.2655284.

4.3. Econometric Results of the Fixed Effects Model

The Fixed Effects model presents 86 observations across 6 data groups in the panel used in this study. The coefficient of determination, R-squared, in the Fixed Effects model is 0.6038, which implies that 60 percent of the independent variables specified in the model explain the variation in the dependent variable.

We can conclude that the selected variables sufficiently account for the changes in the dependent variable.

Table 4: Econometric Results of the Fixed Effects Model.

Fixed-effects (within) regression			Number of obs	=	86
Group variable: id			Number of groups	=	6
R-sq: within = 0.6038			Obs per group: min	=	9
between = 0.5119			avg	=	14.3
overall = 0.0677			max	=	19
			F(8,72)	=	13.72
corr(u_i, Xb) = -0.9763			Prob > F	=	0.0000

GDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
unemployment	.3766873	.1230222	3.06	0.003	.131447	.6219276
consumer spending	.452966	.0671998	6.74	0.000	.3190056	.5869264
population growth	.286881	.777163	0.37	0.713	-1.262365	1.836127
mployment	.0872769	.1475931	0.59	0.556	-.2069446	.3814984
Inflation	.3781165	.1285566	2.94	0.004	.1218436	.6343894
savings	.3568627	.0824089	4.33	0.000	.1925835	.5211419
fdi	.3293208	.2790409	1.18	0.242	-.2269371	.8855788
remittances	-.156186	.1643791	-0.95	0.345	-.4838698	.1714979
_cons	-15.74709	8.38083	-1.88	0.064	-32.45397	.9597925
sigma_u	15.677734					
sigma_e	2.359666					
rho	.97784835	(fraction of variance due to u_i)				

F test that all u_i=0: F(5, 72) = 12.85 Prob > F = 0.0000

The significance of the variables is determined by the p-value, where the condition that the p-value should be less than 0.05 is emphasized for the independent variable to have an impact on the dependent variable. Based on the p-value condition, in the Fixed Effects econometric model, **the significant variables are**

- Unemployment,
- Customer spending,
- Inflation and
- savings.

To assess the weight of the significant variables on economic growth, evaluated through the independent variable of Gross Domestic Product (GDP), we also analyze the beta coefficient for the respective variables. The unemployment variable has a beta coefficient of 0.3766873, which means that a one percent increase in unemployment will positively impact economic growth by 0.3766873, under the conditions of our analysis. This finding, under the current conditions of the analysis, is contradictory to economic theory, which posits that an increase in unemployment negatively affects economic growth. However, in the discussion section, we provide additional references and discussions from both local and international authors to justify the findings in this econometric model. Based on the beta coefficient, a one percent increase in consumer spending will positively influence economic growth in the Western Balkan countries by 0.452966. This also aligns with and justifies the stance of the World Bank, which classifies the Western Balkan countries as economies primarily based on consumption. Inflation, as another independent variable in the model, is also significant. However, the positive coefficient suggests that a one percent increase in inflation will raise the economy of the Western Balkan countries by 0.3781165. We are aware that a moderate increase in inflation positively impacts economic growth. However, the discussions leading up to the findings highlight contradictions with economic theory. The savings variable is also

very important in the model, as it satisfies the p-value condition of being less than 0.05. Based on the beta coefficient, in this econometric model, a one percent increase in savings will positively affect economic growth by 0.3781165.

Economic theory suggests that the main source of investment is savings. In this regard, savings are expected to have a positive impact in the context of an expanding economy.

However, if the economy is under recessionary conditions, an increase in savings presents the paradox of thrift, which is recognized in macroeconomic theory. This paradox occurs because an increase in savings would suspend all investment opportunities, leading to a negative impact on economic growth.

4.4. Results of the Hausman Test

The test that assists in choosing between the Fixed Effects and Random Effects models is undoubtedly the Hausman test. In the following table, we present the results of the Hausman test for the analysis conducted in this study.

Table 5: Testi Hausman.

	Coefficients			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
unemployment	.3766873	.2403362	.1363511	.0425478
consum spend.	.452966	-.0019351	.4549011	.0630134
Popul. growth	.286881	-.8973915	1.184272	.
employment	.0872769	.1688043	-.0815274	.0554991
Inflation	.3781165	.5973373	-.2192208	.
savings	.3568627	.1490414	.2078213	.040577
fdi	.3293208	.3963509	-.0670301	.
remittances	-.156186	.2655284	-.4217144	.0850188

b = consistent under Ho and Ha;,B=inconsistent under Ha, efficient under Ho; Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 70.62

Prob>chi2 = 0.0000

(V_b-V_B is not positive definite)

Based on the results of the Hausman test, which determines the appropriate model specification, the findings Prob > chi² = 0.0000 indicate that the Fixed Effects model is statistically more significant than the Random Effects model. For this reason, at this stage of the analysis, the Fixed Effects model is selected as the most appropriate to continue with further discussions.

The Hausman test in our panel allows us to reject the null hypothesis, since the p-value (Prob > chi²) is less than 5%.

The Hausman test implies the following

- •H□: Random effects are consistent and efficient.
- H□: Random effects are inconsistent

Therefore, we choose the Fixed Effects (FE) model. The test results imply that the estimators of the Fixed Effects model will be consistent and efficient, making it the most appropriate model for analyzing the panel data in this study. Nevertheless, in this study, we have also conducted additional specific tests for the respective models, which suggest that the Fixed Effects model is appropriate and does not present issues related to the normality of the data. The study continues with the application of the IV 2SLS model and the GMM estimator, which are presented in the following sections of this part. In the Two-Step GMM model, we have a total of 86 observations. The dependent variable is Gross Domestic Product (GDP), while the independent variables include: unemployment, population growth, inflation, savings, foreign direct investment, and remittances. It is important to highlight that in the 2-Step GMM model, the instrumented variable is unemployment. The included instruments are population growth, inflation, savings, foreign direct investment, and remittances, while the excluded instruments are consumer spending and employment. The identification tests based on the probability values under our model conditions show that the model is stable, with the significant variables being unemployment, inflation, and savings. In both the IV

2SLS and 2-Step GMM models, the excluded variables are consumer spending and unemployment. However, based on the hypotheses of this study, the main model for hypothesis testing will be the Fixed Effects model. Relying on the evaluation tests of the respective models presented earlier in the study, the Fixed Effects model is confirmed to be the most appropriate, always within the framework and conditions of this research.

Table 6: Test of Parameter Constancy.

Random-coefficients regression				Number of obs =	77
Group variable: id				Number of groups =	5
				Obs per group: min =	14
				avg =	15.4
				max =	19
				Wald chi2(8) =	125.75
				Prob > chi2 =	0.0000

GDP	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
unemployment	-.4230796	.6626298	-0.64	0.523	-1.72181	.875651
consumer spending	.6741967	.1515369	4.45	0.000	.3771899	.9712035
population growth	11.88057	8.854188	1.34	0.180	-5.473317	29.23446
employment	-.2924295	.5084736	-0.58	0.565	-1.28902	.7041605
Inflation	.3900508	.1268019	3.08	0.002	.1415236	.6385781
savings	.341543	.2213967	1.54	0.123	-.0923865	.7754724
fdi	-.0126607	.4142648	-0.03	0.976	-.8246047	.7992834
remittances	.3025667	.2272657	1.33	0.183	-.1428659	.7479992
_cons	15.21999	32.13616	0.47	0.636	-47.76573	78.20572

In this case, based on the test findings, we reject H□, which means that slope homogeneity is not present under the conditions of our analysis.

Modified Wald Test for Groupwise Heteroskedasticity in the Fixed Effects Regression Model

The Modified Wald Test is applied to test for heteroskedasticity in the Fixed Effects regression model, and the results obtained from the test are presented below.

H0: sigma(i)^2 = sigma^2 for all i

chi2 (6) = 141.70

Prob>chi2 = 0.0000

Based on the findings of the test, where the probability value (p-value) is Prob>chi2 = 0.0000

The results demonstrate that the panel data do not present issues of heteroskedasticity in the Fixed Effects model. The null hypotheses of each test are decisively rejected. The errors exhibit both groupwise heteroskedasticity and serial correlation, regardless of whether they are adjusted by Fixed Effects or by Generalized Least Squares (GLS) estimators. This indicates that, even though the panel data might not have heteroskedasticity problems in the Fixed Effects model, there are still concerns with the error terms that need to be addressed, such as serial correlation and heteroskedasticity across groups.

Wooldridge test for autocorrelation in Panel Data

H0: no first-order autocorrelation

F(1,5) = 3.829

Prob > F = 0.1077

Based on the results, we fail to reject the null hypothesis of no serial correlation at the 5% significance level. Therefore, we conclude that the model does not have issues with serial correlation.

Fixed Effects model significance test

F= 12.854867

Probability>F= 6.139e-09

Table 7: Testi Pooled OLS kundrejt RE-Breusch and Pagan Lagrangian Multiplier Test for Random Effects.

Estimated results:		
	Var	sd = sqrt(Var)
gdp	12.19275	3.491812
e	5.568023	2.359666
u	0	0
Test: Var(u) = 0		
	chibar2(01) =	0.00
	Prob > chibar2 =	1.0000

In this case, we prefer the OLS model over the Random Effects (RE) model. We accept the null hypothesis that the Random Effects model is not suitable, based on the results of the relevant tests $\Omega\mu 2 = 0$.

Table 7: Test for Normality of Residuals.

Skewness/Kurtosis tests for Normality					
				joint	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
__00000B	86	0.0000	0.0000	30.09	0.0000

There is sufficient evidence to reject H□ at the significance level of 1 % since the probability is Prob>chi2 is 0.0000.

5. DISCUSSION OF FINDINGS AND HYPOTHESIS TESTING

Referring to the results obtained from the empirical models, specifically the results from the panel data econometric models: POOLED OLS, Fixed Effect, Random Effect, based on the tests and the significance of the models, the Fixed Effect model emerges as the most important. Therefore, it will be taken as the basis for hypothesis testing.

H1: Consumer spending has a positive impact on the economic growth of Western Balkan countries

Based on the beta coefficient, a one percent increase in consumer spending will positively affect the economic growth of Western Balkan countries by 0.452966. This finding also supports and justifies the views of the World Bank, which characterizes the Western Balkan countries as economies primarily driven by consumption. The first hypothesis of the study is accepted, and it is concluded that consumer spending positively impacts the economic growth of Western Balkan countries. In line with our findings, both theoretical and empirical literature suggest that other studies support this relationship, highlighting the significant role of consumption in driving economic growth in the region. (Chai, 2018) They align with the findings since they consider that consumer spending has a significant impact on the economy. These relationships highlight how household consumption is influenced by various economic factors, and in turn, plays a crucial role in shaping overall economic dynamics. Other authors (Honea & Marisennayya, 2019) it highlight the direct relationship between disposable income and family size with consumption. The study also suggests a strong positive link between money and household consumption expenditures, both in the long term and short term. This indicates that as disposable income increases or family size changes, household consumption tends to rise accordingly, reflecting the important role that income and family structure play in shaping consumption patterns. Consumer expenditures are considered to have a positive effect on economic growth according to (Handriyani, Sahyar, & Arwansyah, 2018) household consumption has a positive impact on economic growth. (Bonsu & Muzindutsi, 2017) They conclude that there is a significant long-term relationship between real household consumption and selected macroeconomic variables, with a marginal propensity to consume of 0.7971. Also (Batrancea,

2021) It concludes that economic stability and household consumption were significantly shaped by indicators of economic growth and inflation. Specifically, in the case of economic sentiment, the negative impact of inflation was much stronger than the positive impact of economic growth, whereas the opposite applies to household consumption in European countries. Another finding with different variables from this study is a study by (Li, Wu, & Xiao, 2020), because their analysis includes several other predicted variables as determining factors in consumer spending. According to the findings of the study in question, online shopping, digital payments, online credit acquisition, purchasing financial products online, and business insurance are the main intermediary variables through which digital finance impacts household consumption under the conditions of the analysis cited above

H2: The conceptual variables interconnected, such as (i) the increasing population growth rate; (iii) the total employment rate; (iv) personal remittances; and (v) foreign direct investments, have a positive impact on the economic growth of the Western Balkan countries

Based on the findings of the econometric model, variables such as population growth, employment, personal remittances, and foreign direct investments have been found to be insignificant under the conditions of our analysis, and thus, the hypothesis of the study is rejected. Although the findings in this study show that the increasing population growth rate is statistically insignificant in the econometric models under the conditions of the panel of Western Balkan countries, other studies suggest that population growth could have a positive impact on economic growth, but under specific conditions of growth and economic development. Many empirical studies conclude that there is a positive relationship between GDP growth and population growth. (Szymańska, 2022) It concludes that the population in the Western Balkans region for respective countries reflects the advancement of demographic changes and aging in the region. Specifically, the comparison of calculated measures with the study concludes that the demographic structure in the region has shifted towards "the elderly," with the percentage of people aged 65 and above exceeding 14% in 2020. The employment rate in the study, according to econometric findings, is statistically insignificant. However, other empirical studies regarding the impact of employment on economic growth show a positive effect. Specifically, Keynesian theory supports that increased employment boosts the economy by raising demand for goods and services, which expands production. In contrast to our findings in this study, where remittances are statistically insignificant according to the econometric models, other studies have found that remittances play a vital role in the economy. A study from (Ekanayake & Moslares, 2020) emphasizes that remittances are an important source of income for many developing countries and, as a global aggregate, workers' remittances are the largest source of foreign funding after foreign direct investments. Moreover, migrant workers' remittances also represent a significant source of financing for low- and middle-income countries, as highlighted in the study by the authors (Cazachevicia, Havranek, & Horvath, 2020). Regarding foreign direct investment (Trpeski, Cvetanoska, & Kozheski, 2021). They find a positive impact of Foreign Direct Investment (FDI) on the economic growth of the Western Balkan countries. Other studies (Abduvaliev, 2023) It also emphasizes the importance of foreign direct investment in economic growth and highlights that improving the institutional quality of a country complements the improvement of the investment climate, resulting in a significant increase in inflows of foreign direct investment, while (Muharremi, 2020) comes to the conclusion that the optimal geographical position of Albania and the Western Balkan countries plays a crucial role in attracting foreign investment from neighboring countries, particularly from European Union member states.

H3: Inflation and the unemployment rate hurt the economic growth of Western Balkan countries

The unemployment variable has a beta coefficient of 0.3766873, which means that a one percent increase in unemployment would positively affect economic growth by 0.3766873 under the conditions of our analysis. This finding, under the current conditions of the analysis, contradicts economic theory, which generally posits that an increase in unemployment hurts economic growth. Inflation, as another independent variable in the model, is statistically significant; however, the positive coefficient suggests that a one percent increase in inflation would increase the economic growth of Western Balkan countries by 0.3781165. We are aware that a moderate increase in inflation can have a positive impact on economic growth. Based on the respective coefficients of the variables in the econometric models, the null hypothesis of the study is rejected, and the alternative hypothesis is accepted. According to (Blanchard & Johnson, 2013) as long as inflation remains low and not overly persistent, it is reasonable for workers and firms to ignore past

inflation and assume that the price level this year will be approximately the same as last year. However, if the opposite occurs, then it becomes necessary for governments to undertake anti-inflationary measures. In line with our findings regarding inflation is the study by (Shiferaw, 2023), According to the findings of the study in question, it is concluded that unemployment hurts Gross Domestic Product, while inflation significantly increases Gross Domestic Product. As for unemployment, in contrast to our findings, there is the study by (Kukaj, 2018) which presents the relationship between unemployment and economic growth in the Western Balkan countries. According to the results, it is suggested that for every one percentage point increase in the unemployment rate, Gross Domestic Product decreases by 0.5 percentage points in the case of the Western Balkan countries.

H4: Savings have a positive impact on the economic growth of the Western Balkan countries.

The savings variable is very important in the model because, as we demonstrated, it satisfies the condition p, with a value lower than 0.05. Based on the beta coefficient, in this econometric model, a 1% increase in savings will have a positive impact on economic growth by 0.3781165. Economic theory suggests that the primary basis for investments is savings. In this regard, savings under the conditions of an expanding economy are expected to have a positive impact. However, if the economy is under recessionary conditions, the increase in savings presents the savings paradox, which in macroeconomic theory is known as the paradox of thrift. This is because it suspends all opportunities for investments, and this would result in a negative impact. Other empirical studies also find a positive relationship between savings and economic growth. Also (Çetin, et al., 2023) It concludes that natural resources, economic growth, savings, the current account balance, and the development of the financial sector are interrelated. However, natural resources, economic growth, and the current account balance negatively impact financial development, while savings stimulate financial development. Other studies (Larissa, et al., 2020) It conclude that net savings have a positive impact on Gross Domestic Product (GDP). The World Bank also considers savings as an opportunity for recovery from crises (World Bank, 2023). Also (Ribaj & Mexhuani, 2021) Savings stimulate investments, production, and employment and, consequently, generate greater sustainable economic growth. (Win, 2017) It also finds that domestic savings and FDI have a positive, statistically significant, and inelastic impact on real GDP, both in the long term and in the short term.

6. DISCUSSION

Family consumption expenditures are a crucial pillar in economic growth. Economic theory presents the determining factors of consumer spending and is supported by economic schools of thought over the years. Consumption is the first and one of the most critical components in the conventional equation for calculating economic growth. Generally analyzed, economic growth is assessed based on the expenditure approach, using the simple equation where Gross Domestic Product (GDP) is equal to consumption + investments + government spending + exports - imports, or net exports. From this equation, it is evident that consumption has a significant impact on a country's economic growth. Therefore, with the increase in consumption, the economy is expected to grow as well. Consumption is divided into private consumption, or household consumption as explained by economic theory, and public consumption, which is carried out by the government. However, total consumption is expected to have a positive impact on the country's economic growth. Economic theory suggests that consumption can be divided into two types: consumption that primarily depends on income, meaning that as income increases, so do consumption expenditures for goods and services, and consumption that is independent of income, according to which consumption occurs even if income is zero. In the case of the second type of consumption, which is independent of income, we are referring to households that are social cases supported by the state budget, such as those benefiting from social schemes, or families that do not generate income but still need to secure basic life expenses. These include spending on food, and various costs to ensure clothing, housing, or shelter. Primarily, independent expenditures are defined by economic theory as expenses that occur when individuals are not employed. These expenses often relate to basic needs, such as food, shelter, and clothing, and are typically supported by social safety nets or government assistance programs when individuals lack income from employment.

Regardless of the different types of consumer spending, specifically the approach to consumption, the consulted theory suggests that, whether in time-series analysis or various long-term econometric panel analyses for different countries around the world, consumption consistently proves to have a significant positive impact on economic growth for

the respective countries. This reflects the general consensus that increased consumer spending can drive higher demand, investment, and overall economic expansion. Different reports from the World Bank, the International Monetary Fund, and other relevant international institutions often categorize the Western Balkan countries as economies primarily based on consumption. Consumption, dependent on national income, significantly influences the economic growth of the Western Balkan countries. This consumption-driven growth model highlights the crucial role of household spending and domestic demand in driving the economies of the region.

Consumption is generally linked to other macroeconomic variables. This means that since consumption is a primary function of income, an increase in income will positively affect long-term consumption growth. In other words, since consumption depends on disposable income, a critical discussion arises when it comes to clarifying national income. The relationship between income and consumption is critical in understanding how economic growth can be sustained and how policies related to income distribution can influence consumption patterns and overall economic performance. The development of financial markets, the creation of jobs, and the increase in the overall employment rate contribute to raising per capita income, thereby increasing the potential for higher spending. On the other hand, income growth is also dependent on credit easing and the level of deposits in a country. For this reason, consumer spending, specifically consumption, represents a crucial pillar for sustainable economic development. By fostering a favorable environment for credit access and financial growth, countries can ensure a cycle of increasing consumption, which, in turn, supports broader economic stability and growth.

This study aims to reflect the theoretical aspects of determining consumer expenditures and evaluate how consumer spending impacts economic growth. By referring to the consulted economic theories from various books and empirical theories provided by different international and national authors, the econometric analysis includes, in addition to the consumption variable, other related variables that influence economic growth. These variables include employment, unemployment, savings, inflation, foreign direct investments, remittances, and the growing population rate. The variables under analysis have been interpreted both in theoretical terms and in terms of their impact on economic growth based on empirical literature. This study focuses on the Western Balkan countries, including Kosovo, North Macedonia, Albania, Montenegro, Bosnia and Herzegovina, and Serbia. These countries, with economies in prolonged transition and many having extended or pending EU membership status, experience a significant effect of consumption on economic growth. To assess the impact of consumption on economic growth, this study has utilized panel data covering the period from 2000 to 2020. The analysis conducted pertains specifically to these two decades, and it is worth noting that the panel does not include the global economic crisis caused by COVID-19, followed by the conflict crisis, specifically the Russia-Ukraine war, as this topic falls outside the focus of the study and remains a potential avenue for future research.

This study concludes that the increase in consumer spending positively affects the economic growth of the Western Balkan countries. The study also concludes that rising inflation and unemployment have a positive impact on economic growth, which is attributed to moderate inflation and the orientation of employment policies towards sustainable employment and jobs where the multiplier effect will help not only in increasing per capita income but also in boosting production, fostering innovation, and improving productivity in the private economic sector, as the private sector is considered the driving force of economic growth. On the other hand, the study concludes that an increase in savings positively affects economic growth. Specifically, savings as a function of income in the long term are transformed into investments, and this effect of increased savings during expansionary periods is expected to positively influence the growth of investments, thereby boosting the overall economy.

7. RECOMMENDATION

This study, based on the analysis, research, and presentation of findings and empirical results, following a thorough examination of the determinants of consumer spending and a rigorous econometric analysis that evaluated how consumer spending affects economic growth in the Western Balkan countries, further offers several recommendations for policymakers and the broader community to guide policies toward increasing consumer spending. It is suggested that active labor market policies be promoted with the aim of increasing the employment rate in the country. This is because higher employment contributes to increased income, which in turn boosts consumer demand for goods and services. In line with

employment growth, it is also recommended to increase the average wage in the respective countries, as this would provide a solid foundation for income growth and consequently for increased consumer spending. Inflation reflects the rate of price increases. In this context, it is recommended that the objectives set by the governments of the respective countries keep inflation under control through the use of monetary and fiscal policy. To increase consumer spending, financial stability also plays an important role through credit and interest rates. Therefore, it is suggested to increase deposits, which serve as the foundation of bank lending, and, on the other hand, Central Banks should pursue an anti-inflationary but not restrictive interest rate policy so as not to harm consumption. The study also signals the need to regulate or streamline the channels of remittances or personal transfers from emigrants to the country, as remittances represent a solid basis for promoting sustainable economic growth, especially if they are directed not only toward consumption but also toward long-term investments.

The Western Balkan countries undoubtedly need to implement judicial reforms and enforce contract law to promote a favorable business climate and attract foreign direct investment. Foreign direct investment helps reorient domestic businesses toward new development strategies, thereby increasing productivity through enhanced competitiveness. Population growth is also beneficial for economic growth; therefore, social and economic policies should be promoted to stimulate this growth. In conclusion, consumer spending is the main pillar of economic growth in the Western Balkan countries.

8. RESEARCH LIMITATIONS

This study includes a detailed analysis of macroeconomic variables and evaluates their impact on the economic growth of the Western Balkan countries by applying econometric models of panel data, such as the fixed effects model, the random effects model. However, there are also limitations. One of them is the fact that the recent global crisis of the COVID-19 pandemic and the Russia-Ukraine war are not included in the empirical study analysis, as their impact on the respective economies would have added another dimension to the study, which is not the goal of this study. This remains an opportunity for future studies. Unlike the empirical analysis, the review of the literature on the brief history of economic development of the Western Balkan countries includes the theoretical aspect of the impact of the global COVID-19 crisis, followed by the Russia-Ukraine conflict and its impact on the Western Balkan countries.

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