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DETERMINANTS OF ECONOMIC GROWTH IN THE REPUBLIC OF KOSOVO

Arta Krasniqi Markaj, PhD (c),
Faculty of Business and Economics,
South East European University,
Tetovo, North Macedonia
ak29109@seeu.edu.mk

Shenaj Haxhimustafa, Full professor
, Faculty of Business and Economics,
South East European University,
Tetovo, North Macedonia
s.daut@seeu.edu.mk

ABSTRACT

This paper examines the factors influencing Kosovo's economic growth from 2009 to 2022, specifically investigating the relationship between export, capital formation, consumption, and economic growth using co-integration analysis and the Vector Autoregressive Model (VAR). The findings indicate that exports of goods and services, as well as household consumption, negatively affect economic growth. Conversely, gross capital formation positively impacts economic growth. The study underscores the complexity of economic growth, highlighting the varied significance of different determinants in different contexts. Key findings reveal that while export and gross capital formation are significant contributors to economic growth, household consumption shows an insignificant relationship to GDP. This research contributes to the ongoing debate on the critical factors influencing economic growth, providing empirical evidence from the context of Kosovo and enhancing our understanding of these dynamics, thus offering new insights for policymakers.

Keywords: Capital formation, consumption, economic growth, export, Republic of Kosovo, VAR.

JEL classification: E60; O11

INTRODUCTION

Determinants of economic growth encompass a multifaceted array of factors that collectively shape a country's ability to expand its economy. Among these factors, investment in physical and human capital stands out as a fundamental driver of productivity enhancement and long-term growth. Countries that prioritize infrastructure development, technology adoption, and investments in education and healthcare often experience higher levels of economic performance. Additionally, openness to trade and globalization can spur economic expansion by expanding market opportunities, promoting specialization, and facilitating the transfer of knowledge and technology across borders. Strong institutions and good governance are indispensable in creating a level playing field, ensuring property rights protection, and fostering an environment conducive to entrepreneurship and investment. Demographic trends, natural resource endowments, social and income inequality, and environmental sustainability also influence economic growth trajectories. By addressing these determinants holistically and implementing policies that promote inclusivity, innovation, and sustainability, policymakers can foster an environment conducive to robust and resilient economic growth, but this paper focuses on the following variables in particular: GDP, exports of goods and services, household consumption and gross capital formation.

Various factors contribute to economic growth, specifically direct and indirect factors. Direct variables, such as the expansion of human resources through programs like raising the population and investing in human capital, influence economic growth. Additionally, growth is driven by the augmentation of employed capital and technological advancements. Indirect factors also play a role, encompassing institutions such as financial institutions and private administrations, the size of aggregate demand, saving and investment rates, the effectiveness of the financial system, budgetary and fiscal policies, labor and capital migration, and the overall government efficiency (Boldeanu and Constantinescu, 2015). According to Haller (2012), unlike development, economic growth can be understood as a restricted rise in national income per capita. It entails a detailed examination, particularly in quantitative terms, of this progression, emphasizing the functional connections among endogenous variables. More broadly, economic growth is the increase in GDP, GNP, and NI that results in a greater level

of national wealth, which includes productive capacity expressed both in absolute and relative terms per capita. This also encompasses structural modifications within the economy. An open research question for this paper is what are the specific factors as analyzed through a VAR model that affect economic growth, and what are the influences of economic activities that may have potential adverse effects on the GDP growth of the Republic of Kosovo? The hypotheses of this study can be presented as follows:

H1: Exports of goods and services positively impact economic growth;

H2: Gross capital formation positively impacts economic growth; and

H3: Household consumption positively impacts economic growth.

To support the hypotheses of this study, it is crucial to emphasize the substantial impact on economic growth and the advantage of fostering sustainability. This study was conducted with the specific goal of assessing the contribution to the GDP growth of the Republic of Kosovo. To address the open-ended research questions, the primary objective is to identify the factors influencing economic activities and to determine the adverse effects. The research utilizes a VAR model to analyze the influences of economic growth in the Republic of Kosovo.

To summarize, the introduction provides a comprehensive overview of the intricate factors driving economic growth, delineates hypotheses regarding the impact of exports, gross capital formation, and household consumption, underscores the study's aim to assess their contribution to GDP growth in Kosovo.

The remainder of the paper is structured as follows: Section 2 presents a review of the relevant literature, Section 3 outlines the research methodology, Section 4 presents the results and Section 5 offers the conclusion.

THEORETICAL AND EMPIRICAL LITERATURE

A compilation of economic studies conducted in the 18th and 19th centuries by Adam Smith, David Ricardo, and Robert Malthus likely pertains to the foundational contributions made by these economists to classical economics. Each of these thinkers played a significant role in shaping economic thought during this period. Together, the contributions of Smith, Ricardo, and Malthus form a significant part of classical economic thought, influencing subsequent generations of economists and providing a theoretical foundation for understanding economic systems and policies (Smith, 1776; Ricardo, 1817; Malthus, 1798). The Neo-Classical theory of economic growth is closely associated with the work of economists Robert

Solow (1956) and Trevor Swan (1956), whose contributions significantly influenced the understanding of long-term economic growth. The Neo-Classical theory has been influential in shaping discussions on economic growth, providing insights into the role of capital, technology, and convergence in determining the long-term prosperity of nations (Solow, 1956; Swan, 1956).

Economic growth entails a rise in quantitative measures of an economy, such as an increase in output per capita over a specific period. In the 1950s and 1960s, economic development was perceived as a progression through consecutive stages of economic growth (Todaro & Smith, 2015). As highlighted by Vojtovic (2013) it is important to recognize that the determinants of economic growth can vary both spatially and temporally. Dewan and Hussein (2001) asserted in their panel study that comprehending the drivers of growth and the impact of policies on growth is essential for achieving and sustaining high economic growth. Their research, which combines cross-sectional and time series data, focused on 41 middle-income developing countries, to construct an empirical model of growth. The authors advocated for trade liberalization and the adoption of technological advancements to enhance efficiency and drive economic progress.

Moore and Vamvakidis (2007) used the Hodrick-Prescott (HP) filter: Cobb-Douglas function of production with two factors, capital and labor, and simulation of growth. This study delved into the factors impacting recent and potential growth in Croatia, exploring influential policies. Estimating the country's potential growth rate at 4–4½ percent based on current productivity trends, the analysis underscored the necessity of enhancing the business environment. To achieve growth aligned with the authorities' goals, it emphasized the crucial need for additional measures to alleviate administrative burdens, address legal uncertainties, and combat corruption. The study also highlights the need for policies that would speed privatization and fiscal consolidation to reduce the role of the state in the economy, as well as the importance of luring in more Greenfield foreign direct investment. Ciccone and Jarociński (2010) concluded that numerous factors influencing both the hindrance and facilitation of economic growth have been proposed. They found that the PWT 6.2 revision of income estimates for the years 1960 to 1996, when compared to PWT 6.1, results in substantial changes to the roles of international commerce, geography, demography, and the government. According to their conclusion, agnostic empirical growth assessments cannot adequately account for the large margins of uncertainty in worldwide income estimates. In a study conducted by Çetinkaya and Erdogan (2010) the relationship between two key indicators,

imports and exports, was examined using the VAR Analysis. Their analysis revealed a causal relationship between these variables: imports affected GDP, while exports were influenced by GDP. Moreover, the findings indicated a two-way causality between exports and imports. These causal relationships were further supported by the results of the variance decomposition test. Próchniak (2011) in his study focused on 10 countries in Central and Eastern Europe, including the V4 countries, Romania, Slovenia, Bulgaria, Estonia, Latvia, and Lithuania, spanning the years 1993-2009. Próchniak identified several determinants of economic growth in the region, including investment, the educational level of the workforce, sound fiscal policies, the development of the financial sector, low inflation and interest rates, a high share of output from the private sector, demographic structure, rapid advancements in information technology and communications, and a favorable institutional environment characterized by significant progress in structural reforms and market liberalization, as well as economic freedom.

Employing a spatial approach to identify output determinants, Supińska (2013) found that human capital and its evolution played a significant role in driving economic growth across the regions of 10 Central and Eastern European (CEE) states during the period of 1990-2008. Zafar and Zahid (2013) conducted a study investigating the impact of key macroeconomic variables on economic growth through multiple regression analysis spanning from 1959–1960 to 1996–1997. They found that primary education plays a crucial role as a precursor to rapid economic growth. Additionally, increasing the stock of physical capital and fostering economic openness were identified as contributors to growth. However, their findings also revealed a negative relationship between budget deficits and external debt with economic growth. This suggests that relying on domestic resources is preferable for financing growth and underscores the importance of implementing long-term growth-oriented policies to achieve sustainable economic growth.

In the realm of intangible output determinants, political factors are scrutinized for their potential impact on economic growth. A study conducted by Radu (2015) focusing on Central and Eastern European (CEE) countries revealed that economic growth during the period of 1990-2010 was influenced by factors such as political certainty, stability, and political freedom. Fetai et al. (2017) aimed to evaluate the key determinants and policies influencing economic growth in the Western Balkans from 1994 to 2015. They employed techniques such as pooled OLS, fixed and random effects models, and the Hausman-Taylor model with instrumental variables (IV). Their findings indicated that domestic lending to the private sector, gross

savings, and foreign direct investment have a favorable effect on per capita growth. On the other hand, there was a negative correlation between per capita growth and the starting point of growth, unemployment, corruption, and overall government final consumption.

Ioan, Mozi et al. (2020) investigated the impact of imports, exports, inward financial direct investment, and outward financial direct investment on sustainable economic growth, as indicated by various macroeconomic indicators (such as gross domestic product, gross domestic savings, and gross domestic capital), utilizing the least squares panel method. Data from a sample of ten Central and Eastern European (CEE) nations spanning from 2005 to 2016 were analyzed. The findings underscored the significant contribution of the examined factors to the sustainable economic growth of CEE countries.

To investigate productivity growth, Ziesemer (2020) presented a semi-endogenous model that took into account the effects of both domestic and international corporate and public research and development (R&D) initiatives. When small nations were analyzed using Cobb-Douglas production functions, overseas research and development became an important source of steady growth. Furthermore, the vector error correction model (VECM) may use the production function as a long-term connection. Austria, Canada, France, Italy, and Portugal made up the sample of five countries that are the subject of this study. The Cobb-Douglas model used by small countries showed that exogenous technical changes and foreign R&D are major factors influencing long-term growth rates. However, if the positive effects of external technical advances are outweighed by the influence of foreign R&D, the growth rate can be limited, which could result in low or negative growth outcomes.

Ziberi and Alili (2021) explored the impact of typical macroeconomic indicators on the economic growth of Western Balkan countries. This research used a static panel empirical analysis using the GDP growth rate as the dependent variable, covering the years 2010-2019. Remittances, foreign direct investments, unemployment, population growth, and corruption control were important independent variables. A notable finding was the positive effect of an increasing share of remittances on economic growth, suggesting that even when used for non-investment purposes, remittances may contribute to domestic production. The study also revealed a non-linear relationship between foreign direct investments and economic growth, possibly linked to underdeveloped capacities in harnessing the positive impact of FDIs.

Spahiu and Spahiu (2022) investigated the influence of various factors on the Gross Domestic Product (GDP) growth in Kosovo in the post-Covid-19 period. Utilizing data from

several secondary sources and fixed effects regression analysis, the study looked at how consumption, remittances, imports, exports, and inflation affected Kosovo's GDP growth. The results showed that, in the post-pandemic economic lockup period, consumption, remittances, and exports greatly impacted GDP growth, whereas imports and inflation showed a modest inverse relationship. Additionally, the Hausman test statistics favored the fixed-effect model selection over the random-effect model, highlighting its superior performance.

To summarize, numerous studies have explored the factors influencing economic growth. This research aims to fill that gap by developing an empirical growth model to investigate the determinants that constrain economic growth.

METHODOLOGY

The study utilizes data spanning from 2009 to 2022 for the Republic of Kosovo, sourced from the World Bank database, with all variables estimated in log form. To assess the presence of a unit root in the series, the standard Dickey-Fuller (DF) test was applied. The Johansen Co-integration test was then employed to confirm the existence of a long-run relationship among the variables. Upon establishing co-integration, VAR (Vector Autoregression) estimation was chosen as it was deemed suitable due to the interrelated nature of the variables and the potential presence of endogeneity bias in the structural equation. Below is a list of the variables used in this research.

Economic Growth (GDP): The dependent variable, represented by Gross Domestic Product (GDP) at purchaser's prices, includes the total value of goods and services produced within an economy, gross value added by resident producers, and adjustments for product taxes minus subsidies. The data on economic growth (GDP) were obtained from World Bank indicators. ***Export:*** An independent variable representing the total value of goods and various market services supplied to the global market. The data on exports were obtained from World Bank indicators. ***Gross Capital Formation:*** An independent variable formerly known as gross domestic investment, encompassing expenditures aimed at enhancing fixed assets, including land improvements, acquisitions of plant and machinery, and the development of structures such as schools, offices, hospitals, and residential homes. The data on gross capital formation were obtained from World Bank indicators. ***Household Consumption:*** Another independent variable, representing the market value of all goods and services acquired by households, excluding purchases related to dwellings but including durable items. The data on household consumption were obtained from World Bank indicators.

The empirical model in this analysis is as follows:

$$\text{LnY} = \beta_0 + \beta_1 \text{LnX}_1 + \beta_2 \text{LnX}_2 + \beta_3 \text{LnX}_3 + \mu$$

Y = economic growth; β_0 = constant; $\beta_1 \beta_2 \beta_3$ = coefficient X_1 = Export; X_2 = Gross capital formation; X_3 = Household Consumption; μ = error term.

$$\text{LnGDP} = \beta_0 + \beta_1 \text{Ln Export} + \beta_2 \text{Ln GrossCapitalFormation} + \beta_3 \text{Ln HouseholdConsumption} + \mu$$

This paper undertakes a natural logarithmic transformation on each variable to maintain the co-integration relationship of the original variables intact while mitigating the impacts of heteroscedasticity and dimensionality to some extent. To explore the enduring equilibrium and immediate associations between Kosovo's economic growth (GDP), export, gross capital formation, and household consumption, this study examines the integrated dynamic response of each variable system.

To summarize, this study analyzes data from 2009 to 2022 for Kosovo, sourced from the World Bank, with variables in Ln form, using the Dickey-Fuller test for unit root presence, the Johansen Co-integration test for long-run relationships, and VAR estimation to address variable interrelatedness and endogeneity bias.

RESULTS AND IMPLICATION

An essential instrument for determining if the variables under investigation are stationary is the enhanced Dickey-Fuller test. A large number of time series variables in macroeconomics are non-stationary. Any shock imparted to a stationary series eventually dissipates, enabling the variable to return to its long-term equilibrium. If a time series is non-stationary, time affects either its variance or its mean, or both. These variables will deviate from their equilibrium path over an unlimited time horizon. Because it is unclear whether there is a long-term or short-term correlation between the variables, the Johansen Co-Integration Test is used. If a long-term correlation is found, the Vector Error Correction Model (VECM) can be employed; in the case of a short-term correlation, the Vector Autoregressive Model. The significance of the independent variables and their ability to reject or accept the null hypothesis is then evaluated using the Vector Autoregressive Model (VAR). This entails figuring out how dependent and independent variables relate to one another as well as assessing the model's overall relevance.

Dickey-Fuller test

The Dickey-Fuller test employed in this paper serves as a statistical tool to examine the presence of a unit root within a time series dataset. A unit root indicates that the time series is

non-stationary, implying the existence of a stochastic trend. A variable is stationary if its mean, variance, and covariance are constant over time.

The MacKinnon approximate p-values help assess the null hypothesis of a unit root, with lower p-values indicating a rejection of the unit root hypothesis. The remarks specify the order of integration, denoting whether the variable is integrated of order 1 (I(1)) or order 0 (I(0)). The first differences of LnGDP (D LnGDP) exhibit a MacKinnon approximate p-value of 0.000, leading to the rejection of the unit root hypothesis and suggesting that LnGDP is integrated of order 1 (I(1)).

Variable	MacKinnon approximate p-value	MacKinnon approximate p-value (First differences)	Remark OI
D LGDP	0.725	0.000***	I(1)
D LEXP	0.751	0.000***	I(1)
D LGROSSCAPITAL	0.748	0.000***	I(1)
D LHOUSEHOLD	0.915	0.003***	I(1)

Table 1: Results of the Dickey-Fuller test for unit root

Note: ***, **, and * indicate significance at the 1, 5 and 10 % levels, respectively I(1) indicates the order of integration.

LnEXP with a MacKinnon approximate p-value of 0.000, leading to the rejection of the unit root hypothesis and suggesting that *LnEXP* is integrated of order 1 (I(1)). *LnGROSSCAPITAL* with a MacKinnon approximate p-value of 0.000, leading to the rejection of the unit root hypothesis and suggesting that *LnGROSSCAPITAL* is integrated of order 1 (I(1)). *LnHOUSEHOLD* with a MacKinnon approximate p-value of 0.000, leading to the rejection of the unit root hypothesis and suggesting that *LnHOUSEHOLD* is integrated of order 1 (I(1)).

Therefore, all variables are stationary after the first differences (Growth, Export, Gross capital formation, Household Consumption). Typically, the optimal lag order of the VAR model is determined through two main methods: the AIC and SC information criterion test and the LR (likelihood ratio) test. We performed AIC and SC information criterion tests.

VAR Lag Order Selection Criteria

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	58.7226		1.3e-09	-9.12043	-9.18027	-8.95879
1	86.7053	55.966*	2.2e-10	-11.1176*	-11.4168*	-10.3094*
2			-7.8e-26*			

Table 2: Results of the Lag Selection Criteria

The Akaike Information Criterion (AIC), Hannan-Quinn Information Criterion (HQIC), and Structural Bayesian Information Criterion (SBIC) consistently indicate lag 1 as the optimal choice for the VAR model. The convergence of these selection criteria reinforces the confidence in choosing lag 1 as the appropriate order for the model. Consequently, relying on these lag selection criteria, lag 1 emerges as the most fitting choice for the VAR model order, demonstrating a consensus across various criteria and suggesting its effectiveness in capturing the underlying relationships within the data.

Johansen co-integration test

In this study, we aim to estimate either a VAR model or VECM, considering four key variables, namely GDP, exports, gross capital, and household data. Given the uncertainty regarding whether these variables exhibit a long-run or short-run association, we plan to conduct the Johansen Co-Integration Test. If a long-run association is established, we will employ the Vector Error Correction Model (VECM); conversely, if a short-run association is found, we will utilize the Vector Autoregressive Model (VAR).

Maximum Rank	Null	Alternative	LL	Eigenvalue	Trace Statistic	5% Critical Value
0	$r = 0$	$r = 1$	71.307144	.	36.3993*	47.21
1	$r \leq 1$	$r = 2$	80.320892	0.75011	18.3718	29.68
2	$r \leq 2$	$r = 3$	85.978658	0.58123	7.0562	15.41
3	$r \leq 3$	$r = 4$	88.431842	0.31437	2.1499	3.76
4	$r \leq 4$		89.506782	0.15242		

Table 3: Johansen Co-Integration Results

The co-integration test holds significant importance as it examines the theoretical relationships among all variables. If variables exhibit co-integration, it implies a long-term co-movement among them, eventually reaching equilibrium, even if they display different short-term movements. Co-integration also indicates that a linear combination of the original variables results in a stationary error term. This test proves valuable in validating untested hypotheses or theories.

Maximum Rank	Null	Alternative	LL	Eigenvalue	Max Statistic	5% Critical Value
0	$r = 0$	$r = 1$	71.307144	.	18.0275	27.07
1	$r \leq 1$	$r = 2$	80.320892	0.75011	11.3155	20.97
2	$r \leq 2$	$r = 3$	85.978658	0.58123	4.9064	14.07
3	$r \leq 3$	$r = 4$	88.431842	0.31437	2.1499	3.76
4	$r \leq 4$		89.506782	0.15242		

Table 4: Johansen Co-Integration Results

This table presents the results of the Johansen Co-Integration Test, which is employed to determine the maximum rank of co-integration in a multivariate time series. The maximum rank refers to the number of co-integrating vectors in the system. In this case, the null hypothesis ($r = 0$) is tested against alternative hypotheses of increasing rank ($r = 1, 2, 3, 4$). The likelihood ratio (LL), trace statistic, and 5% critical values are provided for each hypothesis.

When the absolute value of the test statistic surpasses the critical value, it allows us to reject the null hypothesis, revealing the presence of co-integration and thereby indicating a long-term relationship among the variables under examination. Conversely, if the absolute value of the test statistic falls below the critical value, we cannot dismiss the null hypothesis, indicating a lack of co-integration and implying a short-term association among the variables. This principle serves as a reliable guideline in our analysis.

Vector autoregressive model

The table below displays the Vector Autoregressive (VAR) value estimates for the dependent variable GDP, considering various lagged variables (LnGDP, LnEXP,

LnGROSSCAPITAL, LnHOUSEHOLD) at lag 1 and 2. The coefficients represent the estimated impact of each lagged variable on GDP, along with their standard errors and corresponding probabilities. In this analysis, the null hypothesis is set at the maximum rank of 0. With a test statistic value of 36.3993, below the 5% test critical value, we fail to reject the null hypothesis. This indicates an absence of co-integration among the variables, implying a short-run association. Similarly, the maximum statistic value also falls below the 5% test critical value, reinforcing the conclusion of no co-integration or short-run association among the variables, including GDP, exports, gross capital and household consumption. The consistency between the test statistic and the maximum statistic underscores the absence of co-integration. Consequently, we opt to employ an unrestricted Vector Autoregressive Model instead of a Vector Error Correction Model. Having established that our four variables, including GDP, exports, gross capital and household consumption, are not co-integrated, we can proceed to implement an unrestricted Vector Autoregressive Model.

Dep. Variable: GDP				
Variables	Lags	Coefficient	Std. Error	Prob.
LnGDP	L1	2.921964	1.344638	0.030***
LnEXP	L1	-1.16779	.2508175	0.000***
LnGROSSCAPITAL	L1	.4235944	.2540206	0.095*
LnHOUSEHOLD	L1	-1.370549	.8370715	0.102
LnGDP	L2	.3890209	.9695368	0.688
LnEXP	L2	-1.01956	.2580955	0.000***
LnGROSSCAPITAL	L2	1.259653	.3800138	0.001***
LnHOUSEHOLD	L2	.2384006	.7815904	0.760
_cons		-16.58364	6.13504	0.007***

Table 5: Vector Autoregressive value estimates

Note: ***, **, and * indicate significance at the 1, 5 and 10 % levels, respectively.

The coefficient for *LnEXP* at lag 1 is -1.16, with a standard error of .250 and a probability of 0.000. This suggests a statistically significant negative impact of *LnEXP*. The coefficient for *LnGROSSCAPITAL* at lag 1 is .423, with a standard error of .254 and a probability of 0.095. This suggests a statistically significant positive impact of *LnGROSS*. The coefficient for *LnHOUSEHOLD* at lag 1 is -1.370, with a standard error of .837 and a

probability of 0.102. This suggests a nonsignificant negative impact of *LnHOUSEHOLD*. These significance levels provide a measure of confidence in the estimated coefficients.

The coefficient for *LnEXP* at lag 2 is -1.01, with a standard error of .258 and a probability of 0.000. This suggests a statistically significant negative impact of *LnEXP*. The coefficient for *LnGROSSCAPITAL* at lag 2 is 1.25, with a standard error of .38 and a probability of 0.001. This suggests a statistically significant positive impact of *LnGROSSCAPITAL*. The coefficient for *LnHOUSEHOLD* at lag 2 is .238, with a standard error of .781 and a probability of 0.760. This suggests a nonsignificant negative impact of *LnHOUSEHOLD*.

Initial hypotheses assessment results are as follows: H1, suggesting that Exports of goods and services have a positive impact on economic growth, is not approved. H2, which posits that Gross capital formation positively impacts economic growth, is approved. Finally, H3, proposing that Household Consumption positively impacts economic growth, is not approved.

1. Export Impact on Economic Growth (Hypothesis H1):

The coefficients for *LnEXP* at lag 1 and lag 2 both show statistically significant negative impacts on economic growth. Considering the assumption that exports of goods and services have a positive impact on economic growth, it may be necessary to explore other factors or variables that could mitigate the negative impact of exports on economic growth, such as improving the quality or diversity of exported goods and services or enhancing trade agreements to increase market access.

2. Gross Capital Formation Impact on Economic Growth (Hypothesis H2):

The coefficients for *LnGROSSCAPITAL* at lag 1 and lag 2 both indicate statistically significant positive impacts on economic growth. The positive impact of gross capital formation on economic growth needs to be confirmed and further explored. Policymakers could consider implementing policies to encourage and facilitate investment in capital assets, such as infrastructure projects, research and development initiatives, and incentives for businesses to invest in technology and innovation.

3. Household Consumption Impact on Economic Growth (Hypothesis H3):

The coefficients for *LnHOUSEHOLD* at lag 1 and lag 2 show nonsignificant impacts on economic growth. The assumption that household consumption positively impacts

economic growth needs to be reevaluated. Further analysis may be needed to understand why household consumption does not appear to have a significant effect on economic growth and identify potential factors influencing consumer spending patterns. Additionally, policies aimed at boosting household income or consumer confidence could be explored to stimulate domestic demand and contribute to economic growth.

Granger causality Wald tests

For the first equation, GDP and exports are considered. The chi-squared statistic is 24.299 with 2 degrees of freedom, resulting in a p-value of 0.000, indicating statistical significance. This suggests that exports Granger cause GDP.

Similarly, in the second equation, GDP and gross capital formation were analyzed. The chi-squared statistic is 38.918 with 2 degrees of freedom, also yielding a p-value of 0.000, indicating statistical significance. Thus, gross capital formation Granger causes GDP.

In the third equation, GDP and household consumption were examined. The chi-squared statistic is 5.4696 with 2 degrees of freedom, resulting in a p-value of 0.065, which is above the typical threshold of 0.05 for statistical significance. Therefore, household consumption does not Granger cause GDP at a statistically significant level at 5% but at a 10% level of significance.

Finally, the fourth equation includes all variables. The chi-squared statistic is 45.972 with 6 degrees of freedom, resulting in a p-value of 0.000, indicating overall statistical significance. This suggests that at least one of the included variables Granger causes GDP. These results provide valuable insights into the causal relationships between GDP and the other variables under consideration.

The results of the Granger causality Wald tests offer crucial insights into the drivers of economic growth. Firstly, the significant Granger causality from exports and gross capital formation to GDP underscores the pivotal roles these variables play in shaping the trajectory of economic expansion. Policies aimed at fostering export-oriented industries and incentivizing investments in capital assets could yield substantial benefits for overall GDP growth. Secondly, while household consumption did not exhibit significant Granger causality with GDP in the 5% level of significance in this analysis, its enduring importance in driving economic activity cannot be underestimated. Sustained trends in consumer spending can have profound implications for economic growth and consumer confidence, warranting attention from

policymakers seeking to stimulate domestic demand. Lastly, the collective significance of the equation incorporating all variables emphasizes the intricate interplay among various factors influencing GDP dynamics.

Equation	Excluded	chi2	Prob.
LnGDP	LnEXP	24.29	0.000***
LnGDP	LnGROSSCAPITAL	38.91	0.000
LnGDP	LnHOUSEHOLD	5.46	0.065
LnGDP	ALL	45.97	0.000

Table 6: Granger causality Wald tests

Note: ***, **, and * indicate significance at the 1, 5 and 10 % levels.

This highlights the necessity of adopting a comprehensive approach to economic analysis, considering multiple variables simultaneously to inform effective policy responses. Overall, leveraging these insights can aid policymakers in crafting targeted interventions and strategies to promote sustainable economic growth and resilience.

To summarize, the Dickey-Fuller test reveals that all variables are stationary after first differences. Optimal lag order for the VAR model is determined through AIC and SC information criterion tests, consistently indicating lag 1. The Johansen Co-Integration Test finds no long-term association among the variables, suggesting the use of an unrestricted VAR model. The VAR model estimates indicate a statistically significant negative impact of exports on economic growth, a positive impact of gross capital formation, and a non-significant impact of household consumption. Granger causality tests show that exports and gross capital formation significantly influence GDP, while household consumption does not, at the 5% level. This highlights the importance of export-oriented policies and capital investment, while considering the complex interplay of multiple factors influencing economic growth.

LIMITATIONS

Addressing the research problem faces potential limitations and challenges in comprehensively evaluating the determinants of economic growth in Kosovo, including but

not limited to data availability and quality, the complexity of the economic system, potential endogeneity issues, and external factors such as geopolitical events and global economic conditions, which may influence the accuracy and generalizability of the findings.

CONCLUSION

The results reveal an unexpected negative correlation between exports and economic growth, diverging from conventional understanding. This prompts a thorough investigation into potential factors mitigating this adverse association. Strategies focusing on enhancing the quality and diversity of exported goods and services, alongside initiatives aimed at improving trade agreements to broaden market access, emerge as critical in reversing this trend and fostering economic growth through exports. It is worth noting the contextual challenges faced by the global economy during our study period, including significant events such as the financial crisis, the COVID-19 pandemic, and the conflict in Ukraine, which might have contributed to the contrasting effects observed in our analysis.

The findings confirm the positive correlation between gross capital formation (previously known as gross domestic investment) and economic growth. This underscores the significance of policies directed towards promoting investments in capital assets. Introducing measures to expedite infrastructure expansion, nurture research and development endeavors, and incentivize corporate investments in technology and innovation hold substantial potential in bolstering ongoing economic expansion.

Contrary to expectation, the results indicate a lack of significant impact of household consumption on economic growth. This prompts a reassessment of the notion that consumer expenditure propels economic expansion. Further examination is warranted to uncover the underlying determinants shaping consumer behavior and to identify potential policy interventions. Exploring strategies to bolster household income and enhance consumer confidence could potentially stimulate domestic demand and, consequently, contribute to overall economic growth. It is worth considering that the turbulent period under investigation, particularly the impacts of events like the COVID-19 pandemic and the conflict in Ukraine, have led to heightened inflation globally, influencing household spending behaviors and purchasing power.

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