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The Economic Conjuncture Before and After the Dissolution of Yugoslavia: Determinants of Economic Growth in Former Yugoslavian Countries



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Abstract

Despite adopting a socialist economic model, Yugoslavia experienced significant economic disparities among its regions. These disparities continued after the dissolution of the country, and the countries retained significant differences in economic growth. This study investigates the key determinants of economic growth in former Yugoslavian countries using panel data analysis. To this end, in this study, panel cointegration analysis with an augmented mean group estimator (AMG) was conducted using data from the former Yugoslavian countries (Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia, Serbia, and Slovenia) between 2008 and 2022. In the model, GDP per capita was used as the dependent variable, and capital formation, labor, foreign direct investments, and exports were used as independent variables. The empirical results indicate that in these countries, both exports and capital formation are strong and statistically significant drivers of economic growth, whereas foreign direct investment and labor, exhibit only marginal impacts on economic growth, suggesting that their roles in shaping macroeconomic outcomes remain limited. These findings support the export-led growth hypothesis and underscore the importance of investment in physical capital for developing economies. The study concludes that growth strategies in the region should prioritize policies that stimulate domestic investment and strengthen export competitiveness while undertaking long-term reforms to enhance labor productivity and improve the quality of foreign direct investments. These insights offer valuable guidance for policymakers aiming to achieve sustained and inclusive economic growth in former Yugoslavian countries.

Keywords

Yugoslavia · Economic Growth · GDP per capita · Dissolution · Panel Data Analysis



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The Economic Conjuncture Before and After the Dissolution of Yugoslavia: Determinants of Economic Growth in Former Yugoslavian Countries

The former Yugoslav countries have experienced different economic development since the founding of Yugoslavia due to inequalities in workforce education and geographical advantages. Despite adopting a socialist governance model, Yugoslavia struggled to achieve a balanced development policy among its regions. Notably, significant disparities in economic development emerged among the newly formed nations as Yugoslavia underwent the disintegration process during the 1990s. However, these disparities persisted after the breakup. Each country experienced distinct rates of development due to varied economic policies (Stiblar, 2013).

Following the dissolution, Slovenia has made the most successful progress among the republics. During this period, Slovenia increased its exports almost 10 times and managed to attract a significant amount of foreign direct investment (FDI) to the country. Croatia also made notable progress after Slovenia, managing to significantly increase its GDP through an increase in exports and FDI (The World Bank, 2025).

In Serbia, although relatively significant developments have been achieved, the level of prosperity is not at the desired level, and unemployment remains a major problem in this economy. Bosnia and Herzegovina, Montenegro, and North Macedonia are today considered the weakest economies in Europe. Unemployment and low GDP are major problems in these countries. These countries do not have enough export rates and have not even reached Slovenia's economic level in 1989. The situation in Kosovo was even worse than in these three republics. High unemployment, the foreign trade deficit, insufficient FDI, and low GDP were major problems in Kosovo. However, the current situation in Kosovo is better than it was before the dissolution of Yugoslavia (Conahan et al., 2020).

The main reason for this difference in development between the republics is based on the policies implemented during Yugoslavia's existence. Since the founding of Yugoslavia, Slovenia has developed in the field of industry, while the necessary investments for developing the region were not made for Kosovo. On the other hand, the performance of countries after the breakup also plays a significant role in the current development gap. In addition, the policies of the countries in the process of economic development, sectors supported by the governments, political and economic relations with Europe, the power of the private sector, and other implementations have had significant effects on the emergence of existing developmental differences (Žižmond, 1994).

Based on this, this study examines the reasons for the economic development differences that emerged between the republics after the dissolution of Yugoslavia. This study consists of four main sections. The first section, following an introduction, examines the establishment and dissolution of Yugoslavia. The economic policies of Josip Broz Tito were closely examined in the second part. It was noted that Yugoslavia's economic policies differed from those of other socialist countries, making this aspect a significant focus of the study. The third part analyzed the economic policies and outcomes of former Yugoslav countries. It was observed that while Slovenia and Croatia displayed considerable economic improvement, other nations performed below their potential. Then there is a literature review. In the final part of the study, an examination was conducted to assess the effects of capital, labor, export and foreign direct investment on the growth of former Yugoslav countries between 2008 and 2022. Through the application of the panel co-integration

analysis with AMG, this study aimed to evaluate the relationships between these variables and the economic growth experienced by the former Yugoslav countries.

The research question of the study is, "What are the key macroeconomic determinants of economic growth in the former Yugoslavian countries during the post-socialist transition period, and how do factors such as exports, capital accumulation, labor, and foreign direct investment influence this growth?". This study contributes to the existing literature by offering a focused empirical analysis of the determinants of economic growth in former Yugoslavian countries, a region with a shared socialist legacy but divergent post-transition experiences that is often understudied as a collective unit. Unlike broader studies on post-socialist or emerging economies, our research isolates the economic dynamics within this specific group of countries, highlighting both common growth drivers and structural differences.

Establishment and Breakup Process of Yugoslavia

The Kingdom of Yugoslavia, established in 1918, underwent several transformations until its final dissolution in 2003. Yugoslavia initially consisted of the republics of Serbia, Slovenia, and Croatia. After World War II, Yugoslavia was expanded under the leadership of Josip Tito to include the republics of Bosnia and Herzegovina, North Macedonia, Montenegro, Kosovo, and Vojvodina. The country adopted the name Democratic Federal Yugoslavia under Tito's influence, later changing it to the Socialist Federal Republic of Yugoslavia in 1963 (Lampe & Allcock, 2019).

Economic difficulties and the rise of Serbian nationalism in the early 1990s triggered unrest among the peoples of other republics and led to civil conflict within Yugoslavia. Consequently, Slovenia, Croatia, and North Macedonia declared their independence in 1991. Bosnia and Herzegovina followed suit in 1992. This left only the republics of Serbia, Montenegro, and the autonomous regions of Kosovo and Vojvodina within Yugoslavia's territory (Radeljić, 2011).

Kosovo declared its independence in 2008, which was de facto established in 1998 following the United Nations intervention in the Kosovo-Serbia conflict. Additionally, the republics of Serbia and Montenegro peacefully agreed to secede in 2006, marking the conclusion of Yugoslavia's dissolution process (Bilefsky, 2018).

Economic Development of Yugoslavia

Following World War II, Yugoslavia initially adopted Soviet-style economic policies, which included the implementation of 5-year development plans and state control over large-scale firms. As a result, the Yugoslav economy implemented policies that reduced the influence of the private sector. Nevertheless, the country faced significant challenges during this period. On the one hand, these policies increased poverty, and on the other hand, there were political issues with the Soviet Union. The existence of these circumstances prevented the desired benefits from being achieved through the policies implemented during this period. As a result of these circumstances, Yugoslavia began to deviate from the Soviet model and chart an independent path. Gradually, Yugoslavia moved away from strict adherence to Soviet-style policies and started to pursue different economic strategies (Doder, 1993).

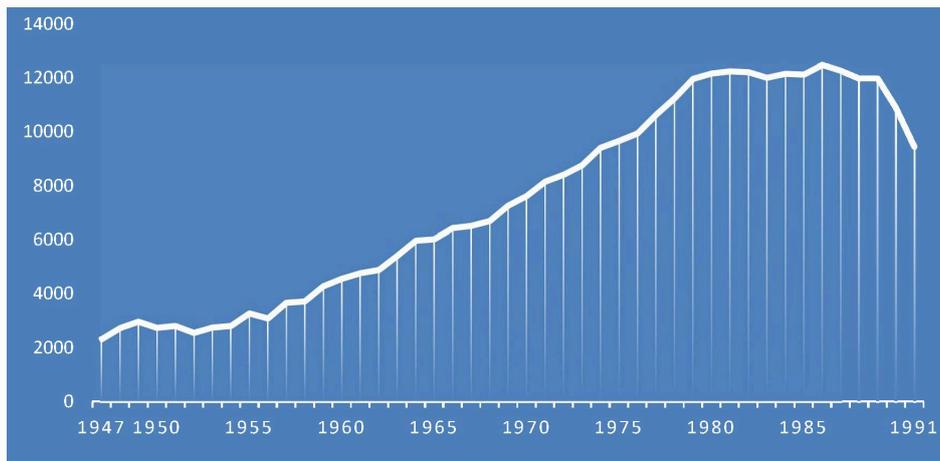
During the post-World War II period, Yugoslavia implemented a series of economic reforms aimed at reducing the central government's control over the economy and transitioning toward a market mechanism. Despite the institutions' property remaining under state control, the reforms enhanced the effectiveness of

local administrative employees. As a result, Yugoslavia experienced notable economic growth, achieving an average annual growth rate of 8.5% between 1950 and 1960 (Horvat, 1972).

Subsequently, the scope of reforms expanded in the 1960s, and Yugoslavia initiated an outward opening under state control. The Dinar was devalued to promote foreign trade by eliminating legal barriers in 1961. Moreover, Yugoslavia became a member of the General Agreement on Tariffs and Trade. However, the implementation of these reforms encountered difficulties, leading to an economic recession. The Central Bank of Yugoslavia increased the money supply in 1963 to overcome these challenges, but this caused inflation, which reached 34.6% in 1965. Despite this recession, Yugoslavia's economic performance remained relatively stable until the 1970s. They witnessed an increase in GDP per capita between 1960 and 1970, despite occasional economic fluctuations (Stojanović, 2007).

Yugoslavia faced significant challenges in the 1970s due to the oil crisis and flawed monetary policies. The oil crisis left the country unable to service its debts, causing the national debt to soar from 2 billion \$ in 1970 to 14 billion \$ in 1979. Subsequently, the debt further escalated to 18 billion \$ with the second oil crisis in 1980. To mitigate the adverse effects of the oil crisis, lowering interest rates resulted in inflation rising from 20% in 1970 to 30% in 1980. The continuation of the interest rate policy after 1980 led to hyperinflation, which reached 1289% in 1989 (Uvalic, 2010).

Figure 1
GDP per capita in Yugoslavia (1947-1991)



During the 1970s, Yugoslavia faced economic challenges, including high unemployment and inflation, which persisted through the 1980s. However, despite these difficulties, the country experienced economic growth between 1970 and 1980. Unfortunately, the previously high growth rates began to decline after the 1980s. This situation can also be seen in [Figure 1](#) (The Madison-Project, 2018).

Significantly, the 1980s witnessed a growing economic disparity between regions within Yugoslavia. For instance, Slovenia's per capita production was already five times higher than that of Kosovo as early as 1955. This gap had widened to eight times by 1989. The increasing economic disparities between developed and less developed republics led to various reactions, both within the regions and against the central government. Developed regions believed their resources were unfairly distributed, whereas undeveloped areas felt their resources were being exploited and transferred to other republics. These economic disparities played a critical role in the breakup of Yugoslavia (Boduszyński, 2010).

To better understand the development differences between the republics in Yugoslavia, it is useful to examine the macroeconomic variables in Table 1. Slovenia's economic success during that period is evident, with per capita exports reaching \$2581 in 1990. Slovenia also stood out with low unemployment rates and high wage payments. Croatia, the second republic with the most robust economy after Slovenia, had wages and per capita exports above Yugoslavia's average, and its unemployment figures were relatively low. Slovenia and Croatia played significant roles in bolstering Yugoslavia's economic performance (Stiblar, 2013).

Serbia mirrored Yugoslavia's average economic performance. Despite its economic challenges, Serbia resisted the dissolution of Yugoslavia because of its significant population and influential political and cultural position within the country. Kosovo, North Macedonia, and Bosnia-Herzegovina exhibited economic indicators below Yugoslavia's average by 1990. Although Kosovo was not officially designated as a republic in 1990, it experienced notably high unemployment rates, peaking at 38% that year (Stiblar, 2013).

Table 1

Key Indicators Before the Dissolution of Yugoslavia (1989)

	Bosnia	Croatia	Kosovo	Montenegro	North Macedonia	Serbia	Slovenia	Total
Total Product (%)	%12.4	%25.6	%1.9	%1.8	%5.4	%46.1	%19.6	%100
Export (Million \$)	2157	6533	220	640	652	5124	4904	20230
Export per capita (\$)	479	1390	110	1066	310	656	2581	857
Average Wage (YU = 100)	80	114	53	74	76	93	136	100
Unemployment Rate	%21.1	%9	%38	%22.2	%23	%16.7	%5.2	%16.1
Population (Million)	4.5	4.7	2	0.6	2.1	7.8	1.9	23.6

Source: (Stiblar, 2013)

As a result, when examining the disparities between Slovenia, the most developed region, and Kosovo, the least developed region in Yugoslavia, significant differences become evident. Slovenia's per capita exports are 23 times higher than those in Kosovo, while average wages in Slovenia are 2.5 times higher than those in Kosovo. These substantial gaps illustrate that despite Yugoslavia's establishment as a socialist country, it was unable to achieve its intended goal of promoting equitable economic development and achieving a balanced distribution of wealth among its regions. Instead, persistent economic disparities heightened tensions within the country and significantly contributed to the breakup of Yugoslavia.

Development Policies in New Republics After the Dissolution of Yugoslavia

After the dissolution of Yugoslavia, the newly established countries adopted different development policies. It is important to analyze these policies and assess their effectiveness to understand the divergent economic developments among the republics. In this regard, each country was examined individually, and its development trajectories were evaluated at this stage.

Bosnia and Herzegovina

Bosnia and Herzegovina emerged as a country most profoundly affected by the Yugoslav Wars. After the war from 1996 to 1999, the country's financial resources were depleted, and it had to redirect its investments

toward the reconstruction of its infrastructure. Since 2000, development strategies have been tried in line with European Union policies, but these efforts have not been successful (Tzifakis & Tsardanidis, 2006).

The underlying key factor for this failure was the political division in Bosnia, along with the insufficient productivity of private sector investments. Bosnia and Herzegovina could not fully realize its goals through FDI policies. Similar to North Macedonia, most FDI in Bosnia and Herzegovina comes from small or medium-sized enterprises. As a result, these investments neither made a significant contribution to the country's exports nor significantly increased the benefits obtained from the investments (Aridi, Lopez & Chua, 2019).

The economic trajectory of Bosnia and Herzegovina heavily depends on foreign currency inflows. Remittances sent by Bosnians living in Europe to their relatives in the country act as an additional economic resource, impacting Bosnia's economic development. Positive outcomes have also been observed in the overall economy when Bosnia's trade with European Union countries reached significant levels (IASCI, 2010).

Bosnia and Herzegovina's exports generally remain low, leading to an unfavorable economic situation. Presently, Bosnia and Herzegovina grapples with high inflation and unemployment rates. Significant trade deficits and debts are ongoing issues. In recent times, Bosnian governments have attempted to increase their exports by signing free trade agreements with various countries to address these problems. Despite these efforts, Bosnia and Herzegovina's exports fall significantly below its targets, posing a hindrance to its economic progress.

Croatia

Croatia experienced a transition from a state-owned socialist economic structure to a free-market economy in the early years of its independence. However, due to various factors, it was unable to achieve the desired level of sectoral development. One important factor stands out among these: the companies that took over the ownership of public institutions lacked the necessary resources to facilitate investments. The inadequacy of domestic capital forced Croatia to seek external solutions (Pleština & David-Barrett, 2022).

In this context, Croatia turned to international financial markets to accelerate growth, transfer technology, increase private ownership in its economy, and finance capital formation. Since its independence, Croatia has attracted a significant amount of FDI. However, the nature of these investments has often been unfavorable for supporting economic growth. Most FDI inflows have taken the form of acquisitions of existing companies, particularly in non-tradable sectors such as finance, retail, and real estate, which already had a large market share. The lack of domestic and foreign investment in high-value-added and high-tech sectors such as machinery, automotive, electronics, and chemicals has hindered rapid industrialization. Nevertheless, Croatia's economy continues to be an attractive investment destination (Tica, Globan, & Levaj, 2020). Indeed, the FDI of Croatia was \$1 billion in 2000 and, increased to \$5.25 billion in 2008. However, following the 2008 financial crisis, these figures began to decline, reaching \$1.2 billion in 2018. Finally, this figure had risen to \$3.67 billion in 2022 (The World Bank, 2023a).

Kosovo

The economy of Kosovo has been significantly affected by the war that began in 1999. The factories that existed before the war were heavily damaged and rendered unusable in the aftermath of the conflict. In the years immediately following the war, Kosovo's economy relied on foreign aid to stay afloat. However, when the aid started to decrease after 2003, Kosovo faced significant economic challenges (IMF, 2012). To overcome these problems, Kosovo launched a series of privatization programs and opened various sectors

to investors to increase FDI, especially in sectors such as energy, agriculture, construction, tourism, and telecommunications. However, despite all these efforts, capital inflows could not reach the desired levels due to problems such as weak infrastructure, corruption, and unreliability of institutions (Conahan et al., 2020).

Nevertheless, Kosovo has experienced significant gains, especially in the information and communication technology sector (ICT) due to the impact of FDI. The share of ICT exports service exports was 22.4% between 2009 and 2012 in Kosovo. This rate was 10.2% in Albania, 6.6% in Bosnia, 13.2% in Croatia, 7.8% in Montenegro, 40% in Serbia, 23% in Slovenia, and 26% in North Macedonia. Although the percentage of ICT exports in Kosovo decreased due to the growth of other services, it remained relatively high in 2022, accounting for 8.5% of total service exports. Kosovo exported \$220 million worth of ICT products in 2022 (The World Bank, 2023b). Considering Kosovo's qualified and cost-effective workforce in this field, it is expected that Kosovo will make significant progress in the ICT sector in the coming years. Indeed, Kosovo's National Development Strategy prioritizes support for Kosovar ICT businesses to export services abroad (European Commission, 2021). In addition, the Kosovo economy is based on investments in the construction sector, exports, retail activities, and remittances sent by Kosovo citizens living abroad to their families in Kosovo today. However, there has been no significant development in the industrial sector (SETIMES, 2011).

When it has been looked at Kosovo's export situation, it can be seen that it has performed significantly below its potential. Although rich in fertile agricultural areas and valuable mines, these sectors do not contribute much to exports because they are not well organized. Kosovo's total exports of goods and services amounted to only \$3.63 billion in 2022. Kosovo's imports are 2 times its exports. Total imports of goods and services were \$6.67 billion in 2022. In this sense, Kosovo has significant problems in its foreign trade balance (The World Bank, 2023c).

Another major macroeconomic problem for Kosovo is unemployment. Unemployment was 11.8% in 2022 in Kosovo. There is also a high rate of hidden unemployment in the agricultural sector. Indeed, unresolved political problems with Serbia and corruption in the country are considered to be the primary reasons for this situation. Kosovo's governments have been making efforts to strengthen their economic relations with Europe to resolve these economic problems. But with Serbia's various obstacles, it has not achieved anything yet. In this sense, Kosovo's economic failure is related to political problems (Goxha, 2018).

As a result, Kosovo must first resolve its political problems with Serbia to reach the level it wants economically. Secondly, given that European countries need to import agricultural products, Kosovo needs to better organize its fertile territory and increase its exports in this area. Moreover, foreign investment in Kosovo will reduce unemployment and increase Kosovo's exports. In this respect, more foreign investors should come to the country, and various incentives should be given to foreign investors in this direction.

Montenegro

Montenegro became the newest republic of the former Yugoslavia when it separated from Serbia in 2006. Montenegro mainly conducts its foreign trade with Serbia and has struggled to develop in sectors other than tourism. Therefore, Montenegro is striving to enhance its economic development by improving its tourism potential.

After independence, Montenegro opened its doors to FDI with the aim of securing sufficient capital for tourism investments. To this end, a series of legal reforms were implemented. As a result, Montenegro significantly increased FDI in the country, especially in 2008-2009. The share of FDI in national income



reached 37.2% in 2009 (World Bank, 2023a). Although this percentage has decreased over time, Montenegro still has one of the highest per capita averages of FDI among the former Yugoslav countries (Živković & Bjelić, 2017).

Montenegro's tourism sector has also made significant progress with FDI diversifying tourism activities in the country. Montenegro's tourism revenue was \$660 million in 2007, which increased to \$1.1 billion in 2017. Considering that Montenegro's total exports amounted to \$514 million in 2018, the importance of tourism in Montenegro's economy becomes even more obvious.

In conclusion, Montenegro's economy relies on tourism revenues and FDI in the tourism sector. Significant progress has been made in this area since 2007. However, hardly any other sectors have developed since gaining independence. Therefore, Montenegro needs to focus on developing production-oriented growth in different sectors as an alternative to tourism.

North Macedonia

After the dissolution of Yugoslavia, North Macedonia adopted the name "Macedonia" which led to economic sanctions imposed by Greece due to concerns over the name. This embargo had a negative impact on North Macedonia's economic prospects and led to a continuous downturn until 1995. The country faced difficulties in industrialization due to inadequate infrastructure following its independence (Azizi, 2012).

Following its independence, North Macedonia's development policy primarily focused on privatization and increasing FDI in the country. However, due to its insufficiently institutionalized financial structure, the desired results could not be achieved from privatization (Stevanovski & Dejanovski, 2013).

Another important tool for North Macedonia's development was FDI. Given limited domestic savings, foreign direct investment was considered a means to promote economic growth. In the first decade after independence, there were only symbolic levels of FDI inflows, largely tied to the privatization process of state-owned enterprises. In the second decade, the government introduced a model to attract FDI through Technological Industrial Development Zones. This program also aimed to increase exports and promote reindustrialization. Despite these efforts, the level of FDI has remained low (Osmani & Ahmeti, 2020).

An important factor deepening North Macedonia's economic problems is the inadequacy of large-scale investments. Domestic and foreign investments are predominantly in the form of small- and medium-sized enterprises. While these businesses contribute to employment generation, they cannot significantly boost exports. Furthermore, despite having a rich tourism potential with historical cities and natural beauty, North Macedonia has not established an effective promotional policy on the international stage (Nestoroska, 2012).

As a result, today, North Macedonia is a country characterized by low-tech agricultural production, dominated by small and medium-sized enterprises, with an underdeveloped industrial sector, high unemployment rates, and limited export activities.

Serbia

Serbia has been held responsible for the conflicts that erupted during the dissolution of Yugoslavia. As a result, Serbia encountered difficulties in attracting FDI and securing external debt. These challenges hindered Serbia's ability to engage in export-oriented production and compelled the country to adopt a growth strategy focused on domestic demand (Jednak et al. 2014). In the later period, Serbia's pressure on Kosovo became apparent, which in turn isolated Serbia to some extent in Europe and caused its investments

to fall well below their potential. This situation hindered Serbia's capital accumulation and the progress of the industrial sector (Radenković, 2016).

Following the resolution of conflicts with Kosovo, Serbia has adopted a growth strategy based on FDI, especially since 2001. FDI has been primarily allocated to the services sector in Serbia. Foreign companies have played a significant role in financing banking and construction investments. Unfortunately, these investments did not lead to a significant increase in Serbia's exports. In addition, FDI has both positive and negative effects on Serbia. While FDI has increased production and employment, it has also made domestic producers unable to compete and made Serbia dependent on FDI (Ratkaj, Sibinović, & Manić, 2020).

When it has been examined Serbia's other significant development policy, which is the privatization process, it can be seen that important decisions were made in 2001. But a significant portion of them remained unimplemented. Consequently, the growth of the private sector did not reach the intended level in Serbia (Uvalić, 2010). Another notable aspect of Serbia's economy is the significant developments in the ICT sector. Serbia has made significant progress in this field, and the percentage of ICT exports within the total service exports has increased from 6.5% in 2008 to 24.3% in 2022 (The World Bank, 2023b).

In summary, Serbia's economic development from the 1990s to the present has fallen short of its desired goals. Its export potential has remained largely untapped, and significant progress in industry and technology has not yet been achieved. This can be attributed to the Serbian government's inability to attract sufficient FDI and inadequately planned privatization efforts across various sectors.

Slovenia

Among the newly formed republics that emerged in the aftermath of the breakup of Yugoslavia, Slovenia stood out for having the most favourable economic conditions. However, challenges stemming from the dissolution of Yugoslavia caused economic difficulties within Slovenia, prompting the need for substantial structural economic reforms in the post-conflict period (Lorber, 2008).

After 1991, Slovenia's economy began to transition toward a market economy, and a privatization process was initiated in Slovenia. However, structural problems emerged soon. Following its independence, Slovenia embarked on a series of reforms aimed at expanding its economic relations, particularly with developed European countries. Because of these reforms, FDI increased significantly. One key factor behind the rapid increase in FDI was the availability of a qualified labor force in Slovenia. Notably, the cost of this labor force was considerably lower than the cost of qualified labor in developed countries (Žižmond, 1994).

With these policies, the private sector has grown in the Slovenian economy, and economic development has been achieved through FDI. In this context, it can be observed that Slovenia exhibited a tendency toward openness and transition to a market economy in the post-war period. Although state involvement in economic activities in Slovenia is relatively lower compared to other European Union countries, it is relatively higher compared to other former Yugoslav countries (OECD, 2005). Furthermore, Slovenia's industrial sector has displayed a relatively stronger position compared to its counterparts before the dissolution of Yugoslavia. As a result, Slovenia managed to maintain its advantageous position after the dissolution and benefited from a skilled workforce to facilitate industry-based exports (Workman, 2019).

Literature Review

In this study, a literature review was conducted with the help of a table. Some studies on the determinants of growth in the countries of the former Yugoslavia are shown in Table 2. Most of these studies concluded that capital formation, labor, exports, and foreign direct investments in EU membership have positive effects on economic growth.

Table 2
Literature Review

Research	Country and period	Variables	Method	Conclusion
Badinger (2005)	15 EU Member States 1950-2000	1. GDP growth rate 2. Capital stock 3. Integration 4. Human capital 5. Openness rate	Panel regression	Integration increases the per capita GDP in EU countries.
Chakravarty and Mitra (2009)	India 1973-2004	1. Manufacturing employment 2. Rest of employment	Vector Auto-Regression	Manufacturing is one of the most important drivers of growth in India.
Gardasevic (2013)	Montenegro 2004-2011	1. Economic growth 2. FDI	Granger causality test	FDI has a very small but positive effect on economic growth.
Mehic, Silajdzic & Babic-Hodovic (2013)	Southeast European countries 1998-2007	1. GDP 2. FDI 3. Domestic investment 4. Government balance 5. Foreign trade volume 6. Inflation	Prais-Winsten Panel Regression	FDI has a positive and statistically significant effect on economic growth. Trade openness is also a key determinant of economic growth in these countries.
Gracer (2013)	Former Yugoslav economies except Kosovo 2000-2011	1. GDP per capita growth 2. FDI 3. Population Growth Rates 4. Labor force participation rates	Summary statistics for each variable by country, then uses hypothesis tests.	Slovenia outperforms the other former Yugoslav countries in many growth-related dimensions during the transition period. Other countries display divergence from Slovenia in the means of key variables influencing growth.
Dritsaki and Stiakakis (2014)	Croatia 1994-2012	1. GDP 2. Exports 3. FDI	ARDL	There is a two-way relationship between exports and growth in both the short and long term.
Szirmai and Verspagen (2015)	Developed and developing countries 1950-2005	1. GDP 2. Manufacturing 3. Human capital 4. Population 5. Climate zone 6. Degree of openness	Panel regression	Manufacturing has a moderately positive impact on growth.
Vardari (2015)	Kosovo 2004-2014	1. GDP 2. Exports	Granger causality test	There is bidirectional causality between GDP and exports.

Research	Country and period	Variables	Method	Conclusion
Parežanin, Jednak, & Kragulj (2016)	Serbia 2000-2014	3. Imports 1. GDP 2. FDI 3. Unemployment rate 4. Exports 5. Imports	Linear correlation	The effects of FDI on GDP and exports vary in Serbia depending on the periods. Therefore, it cannot be said that foreign direct investments in Serbia have consistently increased GDP and exports in every period.
Mano-Bakalinov (2016)	North Macedonia 1993-2014	1. GDP 2. FDI 3. Government revenue 4. Trade openness 5. Population 6. External Debt 7. Debt service payment	ARDL model	An increase in population and openness has a positive effect on Macedonian economic growth.
Pilinkiene (2016)	Central and Eastern European countries 2000-2014	1. Trade openness 2. Economic Growth 3. Competitiveness.	Granger causality test and vector autoregression model	There is a mutual relationship between trade openness, economic growth, and competitiveness. Economic growth has a lasting effect on trade openness, whereas competitiveness indicators have a lasting effect on per capita GDP.
Trošt & Bojnec (2016)	Slovenia and Estonia	1. GDP 2. Exports 3. Imports	The Johansen cointegration and Granger causality test	There is a causal relationship between exports and economic growth in both countries.
Milenković, Kalaš, & Andrašić (2017)	Serbia 2001-2015	1. GDP 2. Inflation 3. Money supply 4. Public expenditures 5. FDI	Panel regression	FDI has a positive impact on GDP.
Boljanović & Hadžić (2017)	Serbia 2006-2013	1. Exports 2. Productivity 3. Labor costs 4. Exchange rate 5. Domestic investments 6. FDI	Least Squares	FDI has a positive impact on Serbia's export growth. Additionally, its positive influence on exports enhances productivity in the industrial sector.
Fetai, Mustafi, & Fetai (2017)	Western Balkan countries 1994-2015	1. GDP 2. FDI 3. School enrollment tertiary 4. Unemployed rate 5. Corruption index 6. Gross savings	OLS	The results indicate that foreign direct investments, gross savings, and domestic credit provided to the private sector have a positive impact on per capita growth.

Research	Country and period	Variables	Method	Conclusion
		7. Government expenditure 8. Inflation		
Su and Yao (2017)	158 countries 1950-2013	1. GDP 2. Manufacturing 3. Agriculture 4. Services	Granger causality test	A decline in manufacturing growth negatively affects the growth of all other sectors, both in the short and long run. In middle-income economies, the manufacturing sector is still the main engine of economic growth.
Zohaj and Avdimetaj (2018)	Kosovo 2005-2016	1. GDP 2. Export 3. Final consumption 4. FDI 5. Gross Savings 6. Government Expenditure	Pooled OLS	There is a positive relationship between foreign investment and economic growth.
Bilas (2019)	Croatia 1995-2018	1. GDP 2. FDI	Panel cointegration and Granger causality test	There is no causal relationship between real GDP and FDI.
Karami, Elahinia, & Karami (2019)	25 European economies 1995-2016	1. Economic growth 2. Manufacturing output 3. Investment 4. Labor force 5. High-Technology exports	Panel regression	Economic growth has a significantly positive relationship with manufacturing and the labor force.
Rapacki and Prochniak (2019)	EU-11 and EU-15 countries 1995-2015	1. Economic Freedom 2. Inflow of EU funds 3. Openness rate 4. FDI 5. GDP 6. Population 7. Government indicators	Blundell and Bond's GMM system estimator	EU membership is an important factor in boosting GDP growth through increasing economic freedom, accelerating market reforms, increasing EU funding, and boosting trade and FDI.
Ari (2020)	Bosnia 1994-2015	1. Renewable energy consumption 2. Economic Growth 3. Trade openness	Toda-Yamamoto Causality Test	There is no relationship between trade openness and economic growth.
Kukić (2020)	Yugoslavia 1952-1989	1. Regional economic growth 2. Capital accumulation 3. Labor 4. Total factor productivity	Regional-level panel data	More developed regions (like Slovenia and Croatia) experienced growth primarily driven by TFP and structural modernization, whereas less developed regions relied mainly on factor accumulation (labor and capital inputs).

Research	Country and period	Variables	Method	Conclusion
Ziberi and Alili (2021)	Western Balkan countries 2010-2019	1. GDP 2. Population 3. Working remittances 4. FDI 5. Unemployment rate 6. Corruption rank	OLS, fixed effects, and random effects	Worker remittances and foreign direct investments positively impact the economic growth of Western Balkan countries.
Bojat, Kovačević, & Kurušić (2021)	Serbia 2000-2019	1. GDP 2. Export 3. Import	VAR and VECM models	There is a long-term relationship between foreign trade and GDP in Serbia. Imports have a negative correlation with GDP, whereas exports have a positive correlation.
Kurteš, Amidžić, & Kurušić (2023)	Balkan countries 2000-2019	1. GDP 2. Trade openness 3. Human Capital 4. Gross fixed capital formation 5. Public debt 6. Unemployment rate 7. Population	Panel regression	There is a positive impact of trade openness and human capital on GDP.

Some important studies examining the relationship between economic integration and growth have found a positive correlation between these two variables. Badinger (2005) concluded that economic integration had a positive impact on GDP in 15 EU member countries. Rapacki and Prochniak (2019) conducted a similar study on E-11 and E-15 countries and found that EU membership increased economic growth.

When examining studies on the relationship between FDI and growth, a positive impact is highlighted once again. Milenković, Kalaš, & Andrašić (2017) concluded that FDI is effective in promoting growth in Serbia. Boljanović & Hadžić (2017) similarly demonstrated that FDI has a positive effect on both exports and growth in Serbia. Fetai, Mustafi, & Fetai (2017) identified a positive relationship between FDI and growth in Western Balkan countries. Ziberi and Alili (2021) reached the same conclusion for Western Balkan countries. However, Gardasevic (2013) found that the impact of FDI on economic growth in Montenegro is very low. Similarly, Parežanin, Jednak, & Kragulj (2016) found that FDI in Serbia contributes to growth in some periods, but this is not consistently true for every period. However, there are also studies that do not support this result.

There are also important studies examining the relationship between exports and growth. Dritsaki and Stiakakis (2014) established a mutual causal relationship between exports and growth in Croatia. The same conclusion was reached by Vardari (2015) for Kosovo, and Trošt & Bojnec (2016) for Slovenia and Estonia. In addition, it is important to clarify the distinction between the openness indicator and the export variable used in the analysis. In the relevant literature, trade openness is generally defined as the ratio of the sum of exports and imports to GDP, reflecting the overall level of integration of an economy into international trade. In contrast, the export variable employed in this study specifically measures the share of exports in GDP, focusing on the direct contribution of export performance to economic growth. Therefore, while both variables are related to external sector dynamics, openness represents a broader measure of trade exposure, whereas exports capture a more targeted aspect of outward-oriented growth.

In conclusion, most studies have found that capital formation, labor, foreign direct investments, exports, and economic integration are effective in influencing economic growth.

Empirical Analysis

Data Specification and Model

This study investigated the sources of growth in the countries that emerged after the dissolution of Yugoslavia (Serbia, Kosovo, Slovenia, Croatia, Montenegro, Bosnia and Herzegovina, and North Macedonia). For this purpose, economic growth was used as the dependent variable, and capital, labor, export, and foreign direct investment data were used as the independent variables in the model. The study covers annual data for the period 2008-2022. All data were obtained from World Bank Development Indicators, and natural logarithmic transformation was applied to series except labor. All data and variables specifications are shown in Table 3.

The analysis focuses on the period after 2008, which marks a distinct phase in the economic development of the former Yugoslavian countries. Although the broader post socialist transition began in the early 1990s, by 2008, these economies had largely completed the fundamental structural and institutional reforms associated with the transition process. Another reason for choosing this period is that the founding dates of the countries included in the panel vary significantly. For example, Montenegro and Kosovo were founded in 2006 and 2008, respectively, while Croatia was founded in 1991. The different founding periods of the countries present a significant drawback in data collection. Furthermore, the lack of consistent and comparable economic indicators across all republics limited our ability to integrate comprehensive historical data. It is also important to recognize that the onset of the 2008 global economic crisis coincided with the beginning of the analysis period, which may have had a significant impact on the macroeconomic dynamics of the former Yugoslavian countries. The crisis led to contractions in external demand, declines in investment, and structural adjustments across these economies, potentially influencing growth patterns in the following years. Therefore, while the study focuses on the post-2008 period to capture the stabilized phase of post-transition development, it also acknowledges that the initial years of the period analyzed were affected by the repercussions of the global crisis. This consideration was considered in the interpretation of the empirical results.

Table 3
Data and variable specification

Variables & symbols	Specification
Dependent Variable	
Economic growth (lnGDP)	GDP per capita (constant 2015 US\$)
Independent Variables	
Capital (lnK)	Gross capital formation (constant 2015 US\$)
Labor (L)	Population growth (annual %)
Export (lnEX)	Total goods and services export (US\$)
Foreign Direct Investment (lnFDI)	Foreign Direct Investment, Net Inflows (US\$)

In order to determine the sources of growth in the former Yugoslav countries, the model expressed in Equation 1 was used in this study. This model was developed based on existing literature.

$$\ln GDP_{it} = B_0 + \beta_1 \ln K_{it} + \beta_2 L_{it} + \beta_3 \ln EX_{it} + \beta_4 \ln FDI_{it} + \varepsilon_{it} \tag{1}$$



In the model, $\ln GDP$ is the dependent variable that corresponds to economic growth, $\ln K$ is capital formation, L is labor, $\ln EX$ is export, and $\ln FDI$ is foreign direct investment. Also, B_0 represents to the intercept and ε_{it} represents the error terms.

Basic information and descriptive statistics

Before starting the analysis, examining the descriptive statistics of the series and basic statistics, such as the correlation matrix, gives preliminary ideas about the data. Thus, examining such descriptive statistics is useful for analysis. Descriptive statistics, such as mean, skewness, kurtosis, maximum, and minimum values of the series and correlation matrix results, are shown in Table 4.

Table 4
Descriptive statistics and pairwise correlation

	$\ln GDP$	$\ln K$	L	$\ln EX$	$\ln FDI$
Observations	105	105	105	105	105
Mean	8.881681	22.15042	-0.458889	22.82700	20.38160
Median	8.698756	22.10957	-0.402006	22.75894	20.21541
Maximum	10.13765	23.43136	0.903876	24.75115	22.38142
Minimum	7.841335	20.38060	-2.517058	20.60761	15.85592
Std. Dev.	0.603932	0.871342	0.680920	1.196035	1.118331
Skewness	0.652696	-0.307436	-0.457731	-0.122681	-0.680508
Kurtosis	2.375476	1.936877	2.886753	1.658652	5.023124
Correlation	1.0000	0.6485	0.2896	0.7942	0.2762

Note: *** significant at 1 a%, ** significant at 5 a%, * significant at 10 %.

According to the statistics in Table 4, the standard deviation of the $\ln EX$ series is higher than other variables. Also, we observe that proportional difference between the maximum and minimum values is higher in the L variable compared to other series.

Among descriptive statistics, skewness and kurtosis values are also important. If the kurtosis value of the series is higher than 3, it means that the variable is sharp, and if it is less than 3, it means that the variable is flat. Skewness being 0 or close to 0 indicates that the variable has a normal distribution, positive skewness means that the series is skewed to the left, and negative skewness means that the variable is skewed to the right (Ivanovski et al., 2015). When the values in Table 4 are examined, it is observed that the $\ln GDP$ variable is skewed to the left, whereas other variables are skewed to the right. Moreover, while the $\ln FDI$ series shows a sharp feature, the other series show a flattened feature.

The correlation matrix is a test that shows the correlation relationship between all series in the analysis (Jöreskog, 1978). According to the correlation matrix results in Table 4, economic growth is positively correlated with all independent variables. So, capital, labor, export and foreign direct investment are positively correlated with economic growth.

Diagnosis and preliminary tests for co-integration analysis

If the estimator is valid, effective, and useful, the established model is suitable for interpretation, and its results become certain. Panel data analyses reveal observations that are repeated over time. Therefore, to choose the correct co-integration analysis, cross-section dependence and heterogeneity must be tested

before the analysis. According to the results obtained, it is necessary to use the correct co-integration estimator (Joshi et al., 2021).

To select the appropriate co-integration analysis and unit root tests to be used in the model, the correlation between units should be tested first. The Pesaran CD (2004) test, which gives the correlation results between units, is generally used in the literature. In this study, the Pesaran (2004) CD test was also used for each variable to evaluate cross-sectional dependence, and the results are given in Table 5.

Table 5
Results of the Pesaran CD cross-sectional dependence test

Variables	CD-test	p-value	Corr	Abs(corr)
lnGDP	16.08	0.000***	0.906	0.906
lnK	11.71	0.000***	0.660	0.664
L	9.55	0.000***	0.538	0.589
lnEX	16.01	0.000***	0.902	0.902
lnFDI	4.27	0.000***	0.241	0.260

Note: ***Denotes significance at the %1 level.

The primary hypothesis of the Pesaran CD (2004) test states that there is no correlation between the units in the series, whereas the alternative hypothesis states that there is a correlation between the units in the series. Table 5 shows that the null hypothesis of cross-sectional independence is strongly rejected based on the results of the Pesaran CD test. Therefore, it would be appropriate to use second-generation panel unit root tests that take cross-sectional dependence into account in the study. In such cases, it would be appropriate to use the CIPS and Breitung unit root tests, which also take cross-sectional dependence into account. The level forms and first differences results of the CIPS and Breitung unit root tests are shown in Table 6.

Table 6
Results of panel unit root tests

Variables	CIPS		Breitung	
	Level	First Differences	Level	First Differences
lnGDP	2.331	-2.725***	4.4847	-2.7929***
	(0.990)	(0.003)	1.0000	(0.0026)
lnK	-2.069**	-2.690***	-0.4589	-3.9419***
	(0.019)	(0.004)	0.3232	(0.0000)
L	0.339	-1.567**	-0.6991	-2.7605***
	(0.633)	(0.049)	0.2422	(0.0029)
lnEX	-0.595	-2.739***	1.5348	-2.7644***
	(0.276)	(0.003)	0.9376	(0.0029)
lnFDI	-1.187	-3.080***	-1.5306*	-4.2340***
	(0.118)	(0.001)	0.0529	(0.0000)

Note: ***significant at 1 a%, **significant at 5 a%, * significant at 10 %.

In Table 6, the first numbers represent test statistics, whereas the numbers in parentheses represent probability values. The results here show that almost all variables are non-stationary at their level. However, these series become stationary when their first differences are taken. Stationarity of all variables in the



model at their first differences is crucial for ensuring model stability. Stationary variables are essential for generating reliable and accurate forecast results within the econometric model framework.

Table 7

Homogeneity Test Results

Test	Chi-square Statistical Value	p-value
Swamy-S	9858.66	0.0000***

Note: ***Denotes significance at the %1 level.

The Swamy S test, another preliminary test to determine the correct co-integration method and to test homogeneity, was performed in the study. According to the Swamy-S test results in Table 7, the main hypothesis was rejected, and the parameters were not fixed but varied by unit. In such cases, it is necessary to rely on the results of heterogeneous tests and use heterogeneous estimation methods for co-integration analysis (Yerdelen Tatoğlu, 2018, 248).

In light of the results of the preliminary tests, it is appropriate to use the Westerlund cointegration test and the AMG estimator, which considers heterogeneity and cross-sectional dependence in the analysis.

Panel co-integration analysis results

The Westerlund cointegration test states that there is no cointegration relationship between the variables as the primary hypothesis, whereas the alternative hypothesis states that the variables move together in the long run and are cointegrated in the long run. The results of the Westerlund panel co-integration analysis are presented in Table 8.

Table 8

Results of the Westerlund co-integration test

Statistics	Gt	Ga	Pt	Pa
Value	-2.969	-7.240	-7.694	-7.613
Z-value	-1.961	1.857	-2.407	0.569
P-value	0.025**	0.968	0.008***	0.716

Note: ***significant at 1 %, **significant at 5 %

According to the analysis results in Table 8, the null hypothesis was rejected based on the p-value at the 5% significance level for the Gt statistic and at the 1% significance level for the Pt statistic. Consequently, the model has a co-integration relationship eventually. After determining the co-integration relationship, the next step is to determine the long-term coefficients with the help of the co-integration estimator. In this regard, the results of the augmented mean group estimator are presented in Table 8.

Table 9

Augmented Mean Group Estimator Results

Country	lnK	L	lnEX	lnFDI
Mean Group	0.2595647 (4.07)***	-0.0277479 (-2.85)***	0.2581648 (6.09)***	-0.0242229 (-1.99)**
Kosovo	0.6077938 (3.81)***	-0.046696 (-2.22)**	0.238804 (3.60)***	-0.0569606 (-1.52)
North Macedonia	0.3090189	-0.0575825	0.1460772	0.0007849

Country	lnK	L	lnEX	lnFDI
	(4.88)***	(-1.80)**	(3.33)***	(0.13)
Bosnia and Herzegovina	0.2159222 (2.21)**	0.0919208 (1.64)*	0.4415779 (5.53)***	-0.0682538 (-2.22)**
Croatia	0.2459074 (4.32)***	-0.0232138 (-0.96)	0.3411953 (6.11)***	0.0000785 (0.01)
Slovenia	0.0953302 (2.09)**	0.0526383 (2.01)**	0.3128385 (7.23)***	0.0136002 (2.00)**
Montenegro	0.1341214 (4.27)***	-0.1773308 (-2.47)***	0.1872834 (4.58)***	-0.0453 (-2.60)***
Serbia	0.208859 (3.59)***	-0.0339714 (-1.94)**	0.1393775 (3.30)***	-0.0135096 (-0.58)

Note: While the first row of the data in the table shows the beta coefficient for the relevant country, the numbers in parentheses in the second row show the statistical value. Also, *** denotes significance at 1 a%, ** denotes significance at significant at 5 a%, and * denotes significance at significant at 10 %.

When the AMG model results, which include the group averages of the former Yugoslavia countries, are examined in Table 9, all series are statistically significant. This result indicates that the model is significant and its interpretation is appropriate. According to the group average AMG estimation results, the coefficients of the lnK and lnEX variables are positive, whereas the coefficients of the lnFDI and L variables are negative, close to zero. It shows that lnK and lnEX have a significant and positive effect on lnGDP, whereas lnFDI and L variables have a significant and negative effect on lnGDP at a level close to zero. According to the AMG co-integration analysis results, the model representing the group average equilibrium relationship is as follows:

$$\ln\text{GDP} = 0.2595647\ln\text{K} - 0.0277479\text{L} + 0.2581648\ln\text{EX} - 0.0242229\ln\text{FDI} \quad (2)$$

When the coefficients obtained from the analysis are interpreted, it can be concluded that a 1% increase in lnEX and lnK would result in an average increase in lnGDP of approximately 0.26%. In other words, economic growth in the former Yugoslavia is highly sensitive to capital accumulation and exports. Export incentives and increased capital formation have a significant positive impact on economic growth. However, the study does not find a similarly significant effect for the lnFDI and L variables. The coefficients for the lnFDI and L variables affect economic growth statistically significantly but only marginally. The obtained coefficient indicates that the impact of foreign direct investment and the labor factor on economic growth in the former Yugoslavia is negligible. This could be due to the low level of foreign direct investment in the former Yugoslavia, irregular population growth, or high migration rates.

On a country-by-country basis, all variables in the model were significant for Slovenia, Montenegro, Bosnia, and Herzegovina, and the model was interpretable. In other countries, most variables showed significant significance. The advantages of panel data over time-series analysis emerge here, as the group average yields meaningful statistics. Consequently, panel data analysis allows for the construction of more comprehensive models with a larger number of observations.

Conclusion

The former Yugoslav countries (Serbia, Kosovo, Slovenia, Croatia, Montenegro, Bosnia and Herzegovina, and North Macedonia) experienced varying levels of economic growth and development after the dissolution of Yugoslavia. This study aims to uncover the reasons for these different levels of economic growth and the determining factors on economic growth in former Yugoslavia countries. In this context, the impact of capital formation, labor, foreign direct investments, and exports on economic growth has been analyzed using the panel co-integration analysis with an augmented mean group estimator. The analysis covers the period 2008-2022. The findings of this study offer a significant contribution to the understanding of economic growth dynamics in former Yugoslavian countries, a group of nations that share a common historical, political, and economic legacy. The analysis reveals that both exports (lnEX) and capital accumulation (lnK) are strong and statistically significant drivers of economic growth in the region, each contributing approximately 0.26% to GDP for every 1% increase. This indicates that these economies are highly responsive to shifts in external demand and domestic investment, underlining the strategic importance of trade integration and capital formation in sustaining and accelerating economic performance. On the other hand, variables such as foreign direct investment (lnFDI) and labor (L), while statistically significant, exhibit only marginal impacts on economic growth, suggesting that their roles in shaping macroeconomic outcomes remain limited.

The central implication of these results is that the former Yugoslav countries are predominantly reliant on capital deepening and outward-oriented economic strategies for generating growth. The strength of exports as a determinant of GDP growth is consistent with established economic literature, particularly the export-led growth hypothesis. This theory posits that openness to trade facilitates economies of scale, productivity gains, and technological spillovers, all of which contribute to higher output levels. For post socialist economies like those of the Western Balkans and Slovenia, exports have also played a critical role in the transition from the centrally planned systems to market economies. The liberalization of trade regimes, participation in regional and global trade agreements, and proximity to the European Union have all facilitated the expansion of exports of goods and services, particularly in the manufacturing and tourism sectors. These developments have not only enhanced the external competitiveness of these nations but have also contributed to the reallocation of resources toward more productive activities.

Similarly, the strong positive association between capital accumulation and GDP growth confirms the importance of investment in physical capital, infrastructure, and industrial capacity. This finding aligns with both neoclassical and endogenous growth theories, which emphasize capital as a vital input in the production function. In the post-conflict and post-transition context of the former Yugoslavia, capital accumulation has been crucial in rebuilding infrastructure, modernizing outdated production systems, and facilitating the adoption of new technologies. Countries like Slovenia and Croatia, which have made significant progress in institutional reform and financial market development, have seen robust investment in construction, energy, transportation, and manufacturing. These capital investments have not only increased productive capacity but also served as a stimulus for broader economic activity by improving connectivity and reducing transaction costs.

However, the weak and marginally significant role of foreign direct investment (FDI) in driving economic growth requires a more nuanced interpretation. In the case of the former Yugoslav republics, several factors may explain the underwhelming impact of FDI on GDP. The primary reason for this result can be attributed to the fact that foreign direct investments in former Yugoslav countries were predominantly made through small or medium-sized enterprises. The absence of large-scale foreign direct investments has led to lower

benefits from foreign direct investments in these countries, which in turn has limited the effectiveness of this variable on economic growth. Second, much of the FDI inflows into the region have been concentrated in non-tradable sectors such as retail, real estate, and banking, which have limited potential for productivity spillovers or export expansion. Third, the lack of strong backward and forward linkages between foreign firms and domestic enterprises has inhibited knowledge transfer and local value creation. Fourth, political instability, bureaucratic inefficiencies, and legal uncertainty in several countries have deterred long-term, growth-oriented foreign investment. As a result, while FDI inflows may have improved capital availability in specific sectors, their broader impact on economic output appears negligible.

Likewise, the limited contribution of labor (L) to economic growth, despite being statistically significant, indicates structural challenges in the labor markets of these countries. While labor is a key factor of production, its effectiveness in driving growth depends not only on its quantity but also on quality, productivity, and alignment with the needs of a modern economy. Many former Yugoslav states have experienced significant demographic shifts, including declining birth rates and rising emigration, particularly among young and skilled workers. This brain drain has resulted in a shrinking labor force and a loss of human capital that could otherwise contribute to economic expansion. In such an environment, simply increasing labor inputs is unlikely to generate meaningful improvements in GDP unless accompanied by structural reforms aimed at increasing labor productivity and participation.

Taken together, these findings reflect a broader pattern often observed in post-socialist and post-conflict economies: growth is initially driven by structural transformation, investment in physical infrastructure, and integration into global trade networks, while improvements in labor utilization and FDI effectiveness take longer to materialize. The former Yugoslav countries are at varying stages of this transformation, and the heterogeneity in institutional quality, governance, and policy implementation partly explains the uneven impact of growth determinants across the region. For instance, Slovenia and Croatia, which joined the EU earlier and undertook comprehensive market reforms, have experienced more consistent and diversified growth than other countries in the Western Balkans, where political and economic instability continues to impede progress. Integration into the EU framework may have affected their economic performance, policy environment, and external trade relations differently from the other former Yugoslavian countries. (Kukić, 2020).

From a policy perspective, the findings of this study provide a clear roadmap for economic strategy in former Yugoslavian countries. Given the pronounced impact of capital accumulation and exports on GDP growth, governments in the region should prioritize policies that stimulate domestic investment and enhance export capacity. This includes implementing fiscal and financial policies that incentivize private sector investment, such as tax reliefs for reinvested profits, access to low-interest credit for productive sectors, and increased public investment in infrastructure, especially in transport, energy, and digital connectivity, which can have strong multiplier effects on private capital formation. On the trade front, export promotion should become a central pillar of economic policy. This entails not only reducing trade barriers and improving customs efficiency but also investing in quality standards, market intelligence, and trade facilitation services to help firms, especially SMEs, access regional and EU markets. Additionally, policies should support sectoral diversification away from traditional exports toward more knowledge-intensive, high-value-added products and services, which are more resilient to global shocks and can drive sustainable long-term growth.

It is also important to acknowledge the limitations of this study. First, due to data availability constraints, particularly for the pre-1990 period, the analysis primarily focuses on the post-socialist transition era, lim-

iting the ability to fully capture long-term structural trends rooted in the socialist period. Second, although real GDP and traditional growth inputs such as labor and capital have been incorporated, some potentially influential factors such as institutional quality, political stability, education levels, initial GDP per capita, income inequality indicators, and innovation capacity were excluded due to the lack of consistent cross-country data. Future research could benefit from expanding the dataset to include more years, additional explanatory variables (e.g. inequalities, religious/sectarian status), and using dynamic panel techniques to analyze long-run equilibrium relationships and causality.

In conclusion, this study highlights the dominant role of capital accumulation and export performance in driving economic growth in former Yugoslavian countries. These findings confirm the importance of investment and trade-oriented strategies in the early and middle stages of economic development and transition. At the same time, the marginal impact of FDI and labor inputs suggests that without deeper structural reforms, these factors may remain underutilized in their potential to contribute to growth. Policymakers in the region must therefore pursue a dual strategy: consolidating gains from capital investment and export-led growth while implementing reforms that improve the effectiveness of labor and foreign investment. In doing so, the countries of the former Yugoslavia can lay the foundation for more inclusive, sustainable, and resilient economic development.



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