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Fiscal Sustainability of the Western Balkans in the Context of EU Integration

A Comparative Analysis with Selected EU Member States

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Abstract

This thesis examines fiscal sustainability in the Western Balkan (WB) countries within the context of European Union (EU) integration. While EU accession requires countries to meet specific fiscal criteria, there is still no universally accepted method for measuring and comparing fiscal sustainability. This study aims to address that gap by developing a Fiscal Sustainability Index (FSI), which consists of five indicators: public debt, primary balance, real Gross Domestic Product (GDP) growth, revenue as a percentage of GDP, and the old-age dependency ratio. The index is calculated for six Western Balkan countries, along with three EU member states that share a similar historical background and face challenges comparable to those of the Western Balkans, covering the period from 2021 to 2023.

The thesis is structured in two main parts. First, the FSI is calculated for all countries over the three-year period, followed by a detailed comparison of their results for the year 2023. Second, an econometric analysis is conducted using Ordinary Least Squares (OLS) regression. In this analysis, the Fiscal Sustainability Index is the dependent variable, while tax revenues, foreign direct investment (FDI), and interest payments are used as explanatory variables. A regional dummy variable is also included to examine whether there are consistent differences between the Western Balkans and EU member states.

The results reveal significant variations in fiscal sustainability across the Western Balkan countries, with Kosovo and Bosnia and Herzegovina outperforming both other countries in the region and some EU member states. These findings suggest that EU membership alone does not guarantee stronger fiscal sustainability. According to the regression analysis, only tax revenue shows a statistically significant effect, while FDI, interest payments, and the regional dummy do not seem to be statistically relevant in this context analysis. These results underscore the importance of robust domestic revenue systems in achieving fiscal sustainability, rather than relying primarily on foreign direct investment or EU financial support.

This thesis contributes to the existing literature by developing a practical index for cross-country comparisons and offers new insights that enrich the ongoing discussion on fiscal sustainability.

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I. Introduction [1]

This thesis analyzes the fiscal sustainability of Western Balkan countries, with a particular focus on their efforts toward European Union accession. As these countries move closer to EU accession, sustainable public finances become increasingly important not only to fulfill formal criteria, but also to support sustainable long-term development. Fiscal sustainability refers to a government's ability to manage public spending and tax policies in a way that prevents unsustainable debt accumulation and ensures future economic stability.

For countries seeking to join the EU, meeting fiscal standards requires more than achieving numerical targets. It involves broader institutional reforms that strengthen economic governance and improve public trust. A key challenge addressed in this research is the lack of a clear and consistent framework to measure fiscal sustainability across countries that are at different stages in the accession process. Most studies focus on single indicators such as the debt-to-GDP ratio or annual budget deficits. However, these measures alone do not fully capture the complexity of fiscal systems.

This study seeks to bridge that gap by constructing a Fiscal Sustainability Index, which combines several key indicators into a single composite score. This allows for a more structured and cross-country analysis over time. The focus is on six Western Balkan countries, and their results are compared with three EU member states: Romania, Bulgaria, and Croatia. These countries were selected because they have experienced the accession process and faced similar challenges in managing public debt, implementing reforms, and adapting to EU fiscal rules. Their experiences offer valuable insights for current EU candidates.

The topic is especially timely, considering the growing levels of public debt, demographic shifts, and increasing pressure on public finances. For countries preparing for EU membership, having a clear view of their fiscal strengths and weaknesses is essential. The Fiscal Sustainability Index is not only a tool for comparison, but also a potential resource for shaping policy discussions and planning future reforms. Institutions including the International Monetary Fund (IMF) the European Commission, and

[1] The language and grammar of this thesis have been reviewed and improved with the assistance of Grammarly Premium to ensure clarity and linguistic accuracy.

the Organisation for Economic Co-operation and Development (OECD) have developed different tools for assessing fiscal sustainability, from stress-testing and forecasting models to early warning systems and composite indicators. Still, there is no universal method, especially for countries outside the EU, and no universally accepted method for integrating institutional and demographic dimensions into such assessments.

The Fiscal Sustainability Index includes five main indicators: public debt, the primary balance, real GDP growth, the revenue-to-GDP ratio, and the old-age dependency ratio. These were chosen to reflect both current economic performance and longer-term structural pressures. The index enables cross-country comparison regardless of differences in size, institutional capacity, or fiscal structure. In addition, the thesis uses econometric analysis to test the impact of tax revenue, foreign direct investment, and interest payments on fiscal sustainability. A second model includes a regional dummy to investigate whether Western Balkan countries differ systematically from EU member states in their fiscal performance.

The structure of the thesis starts with a review of the theoretical and conceptual foundations of fiscal sustainability and outlines the methodology used to construct the index, including the criteria for indicator selection. The empirical section presents the dataset, normalized indicator values, and resulting index scores for the selected countries. This is followed by an econometric analysis exploring the relationship between the independent variables and fiscal sustainability. The final section draws key conclusions and provides practical recommendations for improving fiscal management and advancing the EU integration process. The goal is to assess how closely Western Balkan countries align with EU fiscal expectations and to identify the most critical drivers of fiscal performance. This approach aims to support better fiscal policymaking and contribute to the broader dialogue on fiscal governance in the context of European integration.

The analysis highlights important differences in fiscal sustainability across the countries included in the study. Kosovo has the highest index score, reaching 0.699, which appears to be impacted mainly by its low public debt and favorable demographic structure. In contrast, North Macedonia ranks the lowest, with a score of 0.215, reflecting weak results across all five indicators used in the index. Among the EU member states, Croatia achieves the best score, but still remains below both Kosovo and Bosnia and Herzegovina. The regression results suggest that only tax revenue is statistically significant to fiscal sustainability. Foreign direct investment and interest payments do not show a significant influence on fiscal sustainability in the short term, and the regional dummy variable is also statistically insignificant.

II. Theoretical Background and Policy Context

2.1 Understanding Fiscal Sustainability

Fiscal sustainability has become a central concern in how modern states manage their economies and plan for long-term stability of public finances. One of the most widely used definitions states that "the sustainability of public finances also referred to as fiscal sustainability, is the ability of a government to sustain its current spending, tax and other-related policies in the long run without threatening its solvency or defaulting on some of its liabilities or promised expenditures" (European Commission, 2020)[2]. That means that a government is able to meet its financial obligations now and in the future, without needing to make sudden or extreme changes to its spending or taxation levels and without risking to collapse. In other words, if existing laws and policy decisions remain unchanged, public finances should remain stable and not result in a debt burden that becomes unmanageable. For countries in the Western Balkans aspiring to join the European Union, fiscal sustainability is both a strategic priority and a formal requirement of the EU accession criteria.

Fiscal sustainability can be examined from various perspectives, but it is commonly discussed in terms of short-term and long-term perspectives, each focusing on different aspects of a country's fiscal position. "Short-term sustainability focuses on a government's capacity to meet its existing debt and maintain primary balances that prevent debt from growing uncontrollably. Long-term sustainability, on the other hand, examines structural challenges such as demographic pressures, pension liabilities, and health care costs, which can undermine a government's fiscal position over time" (Escolano, 2010)[3]. However, numbers alone do not tell the full story. As highlighted by Cottarelli and Escolano (2014)[4], factors like political stability, strong institutions, and public trust in fiscal policy are also

[2] European Commission (2022). *Fiscal Sustainability Report 2021*. Institutional Paper 171, Directorate-General for Economic and Financial Affairs.
[3] Esconalo (2010). *A Practical Guide to Public Debt Dynamics, Fiscal Sustainability, and Cyclical Adjustment of Budgetary Aggregates*
[4] Cottarelli C.; Escolano L. (2014) *Debt Dynamics and Fiscal Sustainability*

essential for maintaining long-term sustainability. Even when a country achieves important numerical goals, such as low debt or a balanced budget, it may still be exposed to risks if its political and institutional foundations are weak. A lack of transparency or frequent shifts in policy can reduce trust in the government's ability to manage public finances effectively. For this reason, any serious assessment of fiscal sustainability must go beyond economic indicators and consider the quality of governance and the credibility of fiscal institutions.

Fiscal sustainability remains a key concern for major international institutions such as the International Monetary Fund, the World Bank, and the European Commission, due to its central role in preserving macroeconomic stability. The European Commission reviews the fiscal situation of each member state through the Stability and Growth Pact (SGP). It also publishes regular Fiscal Sustainability Reports to identify any risks that could affect the long-term soundness of public finances. In practice, assessing fiscal sustainability often involves tracking a set of key indicators, such as the primary balance, interest payments, GDP growth, and the public debt-to-GDP ratio.

2.2 Fiscal Policy Framework in the European Union

The coordination of fiscal policy remains a fundamental pillar of the European Union's broader strategy to maintain macroeconomic stability, particularly within the framework of the Economic and Monetary Union. Since the adoption of the Stability and Growth Pact[5] in 1997, EU member states have been expected to follow a set of fiscal rules that translate the Maastricht criteria into operational commitments. Its main purpose is to prevent the accumulation of excessive budget deficits and unsustainable levels of public debt, as these could weaken the functioning of the euro area and generate broader negative consequences for the rest of the Union.

The Stability and Growth Pact sets clear fiscal benchmarks, requiring member states to keep their general government deficit below 3% of GDP and public debt under 60%. These reference values aim not only to encourage responsible fiscal behavior, but also to ensure that governments retain sufficient space to respond to economic shocks without endangering overall stability. Beyond these numerical thresholds, the Stability and Growth Pact provides a broader framework for overseeing national fiscal

[5] European Commission, Stability and Growth Pact, Directorate-General for Economic and Financial Affairs

policies, including mechanisms for monitoring, coordination, and, when necessary, corrective action through established procedures and institutional supervision. While the Stability and Growth Pact is primarily associated with its numerical thresholds, it is structured around two main components that define how fiscal discipline is promoted and enforced. The first, known as the preventive arm, seeks to support responsible fiscal planning by encouraging member states to adopt medium-term budgetary goals that take into account their specific economic contexts. This component also involves regular supervision by the European Commission and the Council of the EU, with the possibility of issuing early warnings if fiscal risks are identified at an early stage. The second element, known as the corrective arm, triggered when a member state exceeds the agreed deficit or debt thresholds. In such cases, the Excessive Deficit Procedure may be launched, obligating the government in question to implement timely and appropriate measures to restore fiscal compliance. The broader objective is to re-establish alignment with the Pact's rules while safeguarding macroeconomic stability across the Union.

After the global financial crisis and the public debt crisis in the euro area, the Stability and Growth Pact was revised to respond to some of its most evident limitations. One of the main concerns was the lack of effective enforcement and the inability to prevent certain countries from following unsustainable fiscal paths. To strengthen the system, two major legislative packages were introduced: the Six-Pack in 2011 and the Two-Pack in 2013. These two packages improved fiscal oversight by introducing expenditure benchmarks, expanding macroeconomic monitoring, and establishing new procedures to identify and respond to economic imbalances. One of the key contributions of these reforms was the effort to make enforcement more effective, particularly through the introduction of stronger tools such as reverse qualified majority voting in the Council, which aimed to simplify the process of applying sanctions when fiscal rules were not respected. The reform efforts continued with the adoption of the Fiscal Compact in 2012, which became a central element of the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union.[6] Through this agreement, the countries involved agreed to put in place binding national rules to keep their budgets balanced, preferably by including them in their constitutions or in other important legal documents. The main goal of the Compact was to promote greater fiscal responsibility within each country and to increase

[6] European Union (2012), *Treaty on Stability, Coordination and Governance in the Economic and Monetary Union*, Official Journal C 83, 2 March 2012.

trust in the EU's overall system of fiscal governance.

As part of the broader effort to strengthen fiscal governance and enhance policy coordination, the European Union introduced in 2010 the European Semester as an annual cycle for integrated economic and fiscal policy oversight. It serves as the main framework for aligning national budget plans with the EU's fiscal rules and broader economic goals. As part of this process, each member state submits either a Stability Programme (for euro area countries) or a Convergence Programme (for non-euro area countries), which outlines their medium-term fiscal strategy, economic forecasts, and planned policy actions. The European Commission assesses these national documents and issues Country-Specific Recommendations, which serve to guide each member state in addressing its most pressing fiscal and structural challenges. What sets the European Semester apart from earlier coordination mechanisms is its broader and more integrated approach. Rather than focusing solely on compliance with deficit and debt targets, it also links fiscal policy with structural reforms, social and employment policies, and national investment priorities. Through this process, the European Semester aims to ensure that short-term budget decisions align with long-term goals for sustainable growth. It also facilitates regular communication between EU institutions and national governments, providing a clear structure for identifying problems early and encouraging countries to move in the same direction.

Although important steps have been taken to strengthen the EU's fiscal governance, the system is still seen as too complex and not flexible enough to adapt to real-world challenges. Baldacci et al. (2011)[7] argue that "the rules tend to be pro-cyclical, as the focus on nominal targets ignores deeper structural problems and differences in economic capacity across member states." This means that the same rules may affect countries differently, depending on their specific circumstances. Other researchers have also highlighted issues such as inconsistent enforcement and a lack of political will to apply sanctions uniformly, which further undermine the system's overall credibility.

The COVID-19 pandemic brought significant pressure on public finances and exposed some of the limitations of the EU's existing fiscal rules. In response to the sudden economic downturn, the European Union activated the General Escape Clause, which gave member states the flexibility to

[7] Baldacci, Emanuele, Ivanka Petrova, Nazim Belhocine, Gabriela Dobrescu and Samah Mazraani. *"Assessing Fiscal Stress." Institutions & Transition Economics: Macroeconomic Issues eJournal (2011)*

temporarily move beyond the usual budgetary constraints. This decision was not only a response to an exceptional crisis but also a sign that the current framework lacked the adaptability needed to deal with large and uneven shocks across member states. It became clear that in moments of widespread uncertainty, strict rules alone are not enough to ensure stability or allow for effective policy action.

Due to continuous criticism about the overly complex, rigid, and sometimes ineffective nature of the EU's fiscal rules, the European Commission launched a reform of the Stability and Growth Pact during 2023 and 2024. The aim of this reform was to simplify the rules, make them easier to apply, and ensure they better reflect the economic conditions and needs of each member state, upholding principles of sound public finance. The revised approach seeks to make the rules clearer and more practical by shifting the focus toward medium-term fiscal and structural plans. Instead of requiring all countries to follow the same numerical targets, the new framework introduces country-specific debt reduction paths, which are expected to be supported by credible reforms and meaningful investment strategies.

A key part of the new framework is the use of debt sustainability analysis to guide each country's fiscal path. To avoid weak implementation or delays, the reform also includes basic safeguards that require a minimum level of fiscal effort. In addition, greater importance is given to the role of national fiscal institutions, which are expected to monitor progress and promote transparency. The new rules aim to make fiscal policy more aligned with long-term goals by including priorities like green and digital investments as part of the planning process. As the European Commission (2023)[8] notes, the reform represents "a more realistic and flexible approach to fiscal governance," where stability is balanced with the need to support economic resilience and sustainable growth.

For the Western Balkan countries that aim to join the European Union, it is essential to understand and adapt to the evolving nature of the EU's approach to fiscal governane.. While the Maastricht criteria, such as limits on public debt and budget deficits, remain legally binding conditions for accession, the EU today looks beyond just numbers. Increasingly, the focus is on how well institutions function, how transparent and reliable fiscal policy is, and whether public finances are strong enough to handle long-term challenges. This means that fiscal convergence should not be seen only as meeting a checklist of

[8] European Commission. (2023). *Orientations for a reform of the EU economic governance framework* (COM(2023) 240 final)

rules, but as part of a broader process that involves institutional reform, stronger policies, and deeper integration with the EU's values and standards.

Even though fiscal sustainability is such a central issue, there is still no clear or consistent way to measure and compare it in countries that are not yet part of the EU. Assessments typically rely on a few key indicators, such as the debt-to-GDP ratio or annual budget balances. While those figures are helpful, they do not show the full picture. A country's fiscal health is also shaped by how fast its economy is growing, how effectively it collects revenues, and how much pressure it faces from an ageing population. To really understand fiscal sustainability, we need an approach that looks at all these dimensions together, and that also takes into account the quality of governance and the government's commitment to maintaining a stable fiscal path.

2.3 Literature Review and Existing Approaches to Measuring Fiscal Sustainability

Fiscal sustainability is a concept that has evolved gradually, shaped by shifts in economic ideas, population trends, and the growing influence of global financial risk. In the past, the concept of fiscal sustainability primarily concerned whether a government could repay its debt. More recent research, however, has broadened this perspective to include how effectively a country plans for the future, demographic trends, institutional strength, and resilience to economic shocks. Today, fiscal sustainability is no longer seen merely as compliance with strict budgetary rules, instead it is understood as a comprehensive, forward-looking assessment of whether a country can maintain its fiscal policies over time without compromising economic growth or social stability.

One of the first comprehensive attempts to define fiscal sustainability in economic terms was made by Blanchard, O., Chouraqui, J. C., Hagemann, R. P., & Sartor, N. (1991). They were among the first to make a significant contribution to the understanding of fiscal sustainability by creating a framework that helps assess whether governments can continue with their current fiscal policies without leading to unmanageable debt levels. The study examines 18 OECD countries to evaluate whether public finance developments are in line with long-term economic stability. The authors go further than traditional methods by using a dynamic approach that looks at how fiscal policy interacts over time with economic growth, interest rates, and demographic shifts.

Their analysis is based on the concept of the *intertemporal budget constraint*. As they explain, "fiscal policy is sustainable if the present value of future primary surpluses is at least equal to the current level of public debt" (Blanchard et al. 1991)[9]. If this condition is not met, the government will eventually need to either increase taxes or cut spending to prevent debt from growing to unsustainable levels. To reflect this relationship in practical terms, the authors introduce a group of indicators called *fiscal gaps*. These illustrate the extent of permanent adjustment in the primary balance required to maintain stable debt over time, based on realistic economic assumptions. They group fiscal sustainability into short-term, medium-term, and long-term categories. In the short term, the focus is on stabilizing debt by maintaining appropriate budget balances. The medium-term perspective examines how current fiscal trends could impact the debt trajectory over the next decade. The long-term view addresses more structural challenges, such as population ageing and the rising costs of pensions and healthcare. They find that even if a country seems stable in the short term, it can still face serious long-term risks if these structural issues are not addressed through proper reforms.

One important point highlighted in the study is that fiscal sustainability cannot be evaluated only by looking at current budget deficits or debt levels. A country might show low deficits today, but still face increasing future obligations that could threaten the stability of its public finances. Therefore, they recommend a clear and forward-looking approach to fiscal planning, based on realistic expectations about the economy and demographic trends. They also emphasize the importance of strong institutions and long-term budget strategies that take future obligations into account and help avoid unexpected policy changes. They also stress the importance of strong institutions and long-term budget strategies that consider future financial commitments and help minimize the risk of sudden or unplanned fiscal policy shifts. This research has had an important impact on how institutions such as the European Commission and the International Monetary Fund assess fiscal sustainability today. Many of the indicators and methods first introduced in this research have been incorporated into standard fiscal monitoring tools. The authors' emphasis on linking policy evaluation with long-term projections continues to shape fiscal sustainability analysis and remains highly relevant for both developed and developing countries.

[9] Blanchard, O., Chouraqui, J.-C., Hagemann, R., & Sartor, N. (1991). *The Sustainability of Fiscal Policy: New Answers to an Old Question*. OECD Economic Studies, 15, 7–36.

Another way to understand fiscal sustainability is through the *dynamic approach*, which focuses on how the debt-to-GDP ratio evolves over time. This framework links sustainability to the interaction between economic growth, interest rates, and the primary budget balance. As Escolano (2010)[10] explains "Sustainability is achieved when the projected debt trajectory remains stable or declines over time. This implies that the primary balance must at least offset the interest-growth differential. If the real interest rate exceeds the growth rate of the economy, a primary surplus is required to stabilize debt. Conversely, if growth outpaces interest, debt may remain sustainable even with modest deficits." This approach shows that reducing deficits in the short term is not enough to ensure fiscal sustainability, particularly when future obligations are expected to increase. To understand whether debt can stay under control in the long run, it is important to look not only at today's fiscal results but also at broader economic conditions.

Existing Approaches to Measuring Fiscal Sustainability

One of the most widely used approaches to assessing fiscal sustainability is that of the **European Commission**, which introduced three main indicators: S1, S2, and S0. According to the Commission's methodology, "the S1 indicator measures the fiscal effort required to bring the government debt-to-GDP ratio to 60% by 2070, and the S2 indicator measures the fiscal effort required to stabilize government debt in the long term" (European Commission 2023).[11] These indicators provide a structured framework for understanding future fiscal risks by incorporating key variables such as demographic trends, macroeconomic projections, and the current fiscal position. However, their reliability depends heavily on long-term assumptions, particularly regarding GDP growth, interest rates, and spending related to ageing. These projections are inherently uncertain and can vary with external shocks or policy changes. While the S1 and S2 indicators are useful for setting long-term goals and aligning with the *EU's Stability and Growth Pact,* they are not designed to detect immediate fiscal vulnerabilities or pressures that may arise in financial markets. To address this gap, the European Commission also developed the S0 indicator, which functions as an early-warning tool for short-term fiscal stress. As noted in the Commission's methodology, "it combines a set of 25 macroeconomic and

[10] Escolano, J. (2010). *A Practical Guide to Public Debt Dynamics, Fiscal Sustainability, and Cyclical Adjustment of Budgetary Aggregates*. IMF Technical Notes and Manuals, No. 2010/02. International Monetary Fund.
[11] European Commission. (2023). *Debt Sustainability Monitor 2023 – Part I: Fiscal Sustainability Analysis*. Institutional Paper 271

fiscal variables, such as the budget balance, public debt dynamics, and market indicators using a statistical signaling approach. When the S0 indicator crosses a certain threshold, it signals elevated fiscal risk in the short term, offering policymakers the opportunity to act before problems become more serious". (European Commission 2023).[12] In addition, the Required Primary Balance indicator is used to translate long-term fiscal objectives into concrete annual targets for the primary budget surplus. However, like the S1 and S2 indicators, it relies on assumptions about future macroeconomic and structural conditions, which may not always align with real-time developments.

The **International Monetary Fund** uses different methods to assess fiscal sustainability, depending on the characteristics of the country. For countries with full access to financial markets, the IMF applies the *Sovereign Risk and Debt Sustainability Framework (SRDSF)***.** This method combines economic projections with risk analysis to estimate the likelihood of fiscal stress. It includes baseline scenarios, realism tools, and stress testing, which show how debt could evolve under different shocks. The framework also allows for expert judgment to adjust the analysis based on specific country conditions. As stated by the IMF, "the SRDSF assesses sovereign risks and debt sustainability by combining a probabilistic approach with country-specific judgment" (IMF, 2022)[13]. For low-income countries, the IMF and World Bank use a different tool called the *Debt Sustainability Framework (DSF)***.** This method focuses on long-term projections and uses clear thresholds to identify risks related to debt. The DSF evaluates both external and domestic public debt and assesses the sensitivity of debt indicators to potential shocks, such as declines in exports or shifts in exchange rates. Based on the country's economic strength, the framework sets different risk levels ranging from *low* to *in debt distress*. According to IMF guidelines, "the DSF helps ensure that countries' debt remains sustainable, providing early warning signals of potential debt distress" (IMF, 2017)[14].

The **Organisation for Economic Co-operation and Development** assesses fiscal sustainability by focusing on the long-term ability of governments to meet their spending needs without creating excessive debt or instability. Its methodology emphasizes integrating fiscal risk assessments within a

[12] European Commission. (2023). *Debt Sustainability Monitor 2023 – Part I: Fiscal Sustainability Analysis*. Institutional Paper 271
[13] International Monetary Fund. (2022). *Staff Guidance Note on the Sovereign Risk and Debt Sustainability Framework for Market Access Countries (SRDSF)*.
[14] International Monetary Fund and World Bank. (2017). *Guidance Note on the Bank-Fund Debt Sustainability Framework for Low-Income Countries (LIC DSF)*.

comprehensive fiscal framework. Rather than concentrating solely on debt and deficit thresholds, the OECD approach highlights the importance of anticipating and managing potential fiscal pressures. As noted in the OECD's 2024 report, "sustainability assessments should be forward-looking, based on realistic macroeconomic and fiscal assumptions, and should systematically incorporate risks" (OECD, 2024)[15]. This reflects a shift from static indicators toward dynamic tools that link policy decisions with fiscal outcomes. A key part of the OECD's method is the inclusion of scenario analysis and stress testing in fiscal planning. These tools are used to estimate how sensitive public finances are to economic shocks, such as lower growth or higher interest rates. The OECD explains that "a well-functioning fiscal framework includes regular stress tests and scenario analysis to capture the impact of adverse developments on debt trajectories" (OECD, 2024). By running these simulations, governments can better understand the long-term sustainability of their fiscal paths under different conditions. The OECD also evaluates sustainability through medium-term frameworks that align budgetary planning with long-term goals. These frameworks require credible revenue projections, expenditure baselines, and policy costing. According to the OECD, "linking annual budgets with a multi-year fiscal strategy grounded in sustainability assessments is key to avoiding pro-cyclical policies and fiscal slippage" (OECD, 2024). This connection between planning and execution ensures that fiscal policy remains on a stable course even when short-term pressures arise.

Scenario-based analysis and stress testing have become important tools for assessing fiscal sustainability, especially after major global shocks like the 2008 financial crisis and the COVID-19 pandemic. These methods explore how a country's public finances might change under difficult but realistic situations, such as slower economic growth, rising interest rates, currency depreciation, or an ageing population. For example, during COVID-19, many EU countries ran scenarios to estimate how falling revenues and rising health spending could affect their budget deficits. The strength of these tools lies in their ability to uncover vulnerabilities that may not be apparent through conventional indicators like debt or deficit ratios. This makes them especially useful for countries that are vulnerable to external shocks or that face uncertainty in future economic conditions. However, the effective application of scenario analysis and stress testing requires sophisticated economic models and the

[15] OECD. (2024). *Fiscal Risks, Fiscal Sustainability and Rethinking Fiscal Rules*. GOV/SBO(2024)10

capacity to construct realistic and policy-relevant scenarios. This can present challenges for public administrations with limited technical expertise or insufficient data capacity.

At the same time, more studies have focused on creating **composite indices** that measure fiscal sustainability more broadly. The objective is to present a clear and holistic view of a country's fiscal position, thereby facilitating comparisons over time or across different countries. Composite indices are useful because they simplify complex fiscal information and turn it into a single measure that can be used as a benchmark. These indices also help countries explain fiscal risks more clearly to the public and policymakers. However, these tools are not without limitations. The selection of indicators and the assignment of weights often involve a degree of subjective judgment, which can influence the results. Additionally, condensing a wide range of fiscal factors into one numerical score risks obscuring important nuances and may oversimplify complex policy discussions.

III. Methodological Framework

3.1 Research Design and Approach

This thesis follows a quantitative and comparative research design, aiming to assess and compare fiscal sustainability in six Western Balkan countries and three EU member states. The method combines two goals: measuring fiscal sustainability through an index, and identifying which macroeconomic factors are most strongly linked to better fiscal performance using econometric analysis. The analysis focuses on the three-year period from 2021 to 2023. These years were chosen to provide a more stable and realistic picture of fiscal conditions, while 2020 was excluded because of the exceptional disruptions caused by the COVID-19 pandemic. Limiting the analysis to the post-pandemic years helps reduce distortions in fiscal and economic data, allowing for clearer and more reliable cross-country comparisons. The countries included in the analysis are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia, representing the Western Balkans. These are compared with Romania, Bulgaria, and Croatia, three EU member states that share a similar historical and institutional background. Including these countries offers a helpful point of reference for assessing the fiscal progress and challenges that Western Balkan countries face on their path toward EU integration.

The structure of the analysis is divided into two phases. In the first phase, a composite index is constructed using five indicators: public debt, primary balance, real GDP growth, tax revenue, and the old-age dependency ratio. These indicators are selected based on widely accepted frameworks used by international institutions such as the IMF, OECD, and the European Commission. The resulting index scores allow for direct comparison of fiscal sustainability across the nine countries and across the three years included. In the second part, the study applies a cross-country panel regression analysis using Ordinary Least Squares to explore the relationship between the FSI and selected explanatory variables: tax revenue, foreign direct investment, and interest payments. An extended version of the model also includes a regional dummy variable for potential structural differences between Western Balkan countries and EU member states. This econometric analysis, presented in Chapter V, adds an explanatory dimension to the research by identifying which factors are statistically associated with more sustainable fiscal positions.

One of the main aims of this study is to understand how fiscal sustainability differs between the Western Balkans and selected EU member states. Although these countries have all gone through similar economic transitions, their progress in strengthening institutions and aligning with EU fiscal rules has not been the same. By comparing the two groups, the analysis explores whether the Western Balkan countries face additional constraints that may affect their ability to maintain sustainable public finances. This comparative approach helps to uncover differences that may not be apparent through standard fiscal indicators and provides valuable insights into how deeper EU integration could shape fiscal performance over time.

3.2 Construction of the Fiscal Sustainability Index (FSI)

To assess and compare fiscal sustainability across countries consistently and transparently, this thesis develops a composite index that combines multiple indicators into a single measure. The Fiscal Sustainability Index is designed to reflect both the current fiscal position of a country and structural pressures that may affect its long-term financial stability. The construction of the index is based on five core indicators that capture different but complementary dimensions of fiscal sustainability: public debt, primary balance, real GDP growth, revenue-to-GDP ratio, and the old-age dependency ratio.

These indicators were selected based on their relevance in the academic literature and their widespread use by institutions such as the European Commission, the International Monetary Fund, and the OECD. Each indicator reflects a specific aspect of fiscal sustainability:

- **Public Debt (% of GDP):** Measures the total government debt in relation to the country's economic output. A higher debt level can indicate fiscal stress and potential difficulties in debt servicing.
- **Primary Balance (% of GDP):** Indicates the government's fiscal position before interest payments. A positive primary balance suggests that the country is not relying on borrowing to finance its operations.
- **Real GDP Growth (%):** Represents the economic expansion. Stronger growth increases tax revenues and reduces the debt-to-GDP ratio over time.
- **Revenue-to-GDP Ratio (%):** Reflects the government's capacity to collect revenues. A higher ratio indicates a stronger ability to fund services and manage debt.

- **Old-age Dependency Ratio (%):** Captures demographic pressures by comparing the population aged 65 and over to the working-age population (15–64). A higher ratio signals future spending pressure on pensions and healthcare.

To ensure comparability across countries with different scales and characteristics, each indicator is normalized using *min–max normalization*. This technique transforms the values into a range between 0 and 1, where higher scores indicate better fiscal sustainability. For indicators where a lower value is better (such as debt and dependency ratio), *inverse normalization* is applied. The formulas used are as follows:

- For indicators where higher is better:
  X_normalized = (X – X_min) / (X_max – X_min)
- For indicators where lower is better:
  X_normalized = (X_max – X) / (X_max – X_min)

All five indicators are given equal weight in the final index. This decision reflects the view that each dimension contributes equally to fiscal sustainability and avoids the subjective assignment of greater importance to one over another. The overall FSI score for each country is calculated as the simple average of the five normalized values:

FSI = (1/5) × (Debt_norm + PrimaryBalance_norm + GDPGrowth_norm + Revenue_norm + DependencyRatio_norm)

A score closer to 1 indicates stronger fiscal sustainability, while a score closer to 0 reflects a weaker position. The resulting index offers a structured and understandable tool for evaluating fiscal performance not only across countries but also over time within each country. The index serves two main purposes. First, it offers a clear way to compare the fiscal position of Western Balkan countries with that of selected EU member states. Second, it is used as the dependent variable in the econometric analysis presented in Chapter V, helping to explore how fiscal sustainability is linked to key macroeconomic factors such as economic growth, foreign investment, and interest payments.

3.3 Econometric Model Specification

To gain deeper insight into the key factors influencing fiscal sustainability, this study employs a quantitative econometric analysis using panel data for nine countries over a three-year period (2021–2023). The *dependent variable* in the model is the *Fiscal Sustainability Index* developed in the previous section. The objective is to determine whether, and to what extent, selected macroeconomic variables are associated with higher or lower levels of fiscal sustainability.

The analysis is structured in two parts. The first part presents a *baseline model* that includes only economic variables. The second part extends the model by introducing a *regional dummy variable* to examine whether structural differences between the Western Balkan countries and the EU member states have an additional effect on fiscal performance.

Baseline Model

The baseline model is estimated using pooled OLS regression. It includes three explanatory variables: tax revenue (as % of GDP), foreign direct investment, (as % of GDP), and interest payments on public debt (as % of GDP). These variables were selected because they capture key aspects of fiscal sustainability: tax revenue reflects a country's ability to finance its budget, FDI shows exposure to external capital, and interest payments represent the cost of servicing debt. Together, they help assess how internal resources, foreign financing, and debt burdens affect a country's fiscal position.

The model is specified as follows:

$$\mathbf{FSI\_it = \beta_0 + \beta_1 * TaxRevenue\_it + \beta_2 * FDI\_it + \beta_3 * InterestPayments\_it + \varepsilon\_it}$$

Where:

- *FSI_it* is the Fiscal Sustainability Index for country *i* in year *t*
- *TaxRevenue_it* is total tax revenue as a percentage of GDP
- *FDI_it* represents foreign direct investment inflows as a percentage of GDP
- *InterestPayments_it* refers to public debt interest payments as a percentage of GDP
- *ε_it* is the error term

The expected signs of the coefficients are:

- **$\beta_1 > 0$**: Higher tax revenue is expected to contribute positively to fiscal sustainability
- **$\beta_2 > 0$:** Higher levels of FDI lead to increased capital inflows, which can boost tax revenues and, support stronger fiscal performance.
- **$\beta_3 < 0$:** Higher interest payments reduce available resources for other expenditures and can undermine fiscal stability

Extended Model with Regional Dummy

To examine whether structural or institutional factors specific to the Western Balkans influence fiscal outcomes beyond economic fundamentals, the baseline model is extended by including a regional dummy variable.

$$\mathbf{FSI\_it = \beta_0 + \beta_1 * TaxRevenue\_it + \beta_2 * FDI\_it + \beta_3 * InterestPayments\_it + \beta_4 * WesternBalkans\_i + \varepsilon\_it}$$

The regional dummy variable is a binary variable included in the extended econometric model to reflect potential differences that come from a country's geographic position, institutional development, or historical context. It is used in this study to distinguish between the Western Balkan countries and the EU member states selected for comparison.

In this case, the variable **WesternBalkans_i** takes the value of 1 for Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia, and the value of 0 for Croatia, Romania, and Bulgaria. This classification allows the model to examine whether there are systematic differences in fiscal sustainability that are related to regional affiliation and not fully captured by economic indicators such as tax revenue, foreign investment, or interest payments.

The use of this variable is based on the assumption that countries from the same region may share structural characteristics that affect their fiscal outcomes. In the Western Balkans, such characteristics may include limited administrative capacity, lower levels of policy alignment with the European Union, and greater exposure to political or external risks. These conditions may place additional pressure on fiscal performance, even when economic fundamentals appear similar to those of other countries.

By including the regional dummy variable, the model makes it possible to test whether being part of the Western Balkans group is associated with weaker or stronger fiscal sustainability. If the coefficient for this variable is statistically significant, it would suggest that the regional context plays an independent role in shaping fiscal outcomes.

3.4 Data Sources

The data used in this study are taken from reliable and internationally recognized sources to ensure accuracy, consistency, and comparability across countries and over time. The analysis covers a three-year period, from 2021 to 2023, and includes all nine countries in the sample. This timeframe is applied in both the construction of the Fiscal Sustainability Index and the econometric analysis. Using data from multiple years helps the study capture recent trends in fiscal performance, reduce the impact of short-term shocks, and make the results more reliable. This ensures that the relationship between the index and the macroeconomic variables is analyzed consistently, using harmonized and time-aligned data. The following table summarizes all the macroeconomic data used for both the construction of the index and the econometric analysis, including a description of each variable and its data source:

Table 1. Description and Source of Indicators Used in the Analysis

Data	Definition	Source
Public Debt (% of GDP)	General government gross debt as a percentage of GDP	IMF World Economic Outlook Database
Primary Balance (% of GDP)	Budget balance excluding interest payments on debt. Measured as general government primary net lending/borrowing (% of GDP).	IMF World Economic Outlook Database
Real GDP Growth (%)	Annual growth rate of real GDP, adjusted for inflation	IMF World Economic Outlook Database

Revenue-to-GDP Ratio (%)	Total general government revenue as a percentage of GDP	IMF World Economic Outlook Database
Old-age Dependency Ratio (%)	Ratio of the population aged 65 and older per 100 persons aged 15–64	UN Population Data Portal
Tax Revenue (% of GDP)	Total tax revenue collected by the general government as a percentage of GDP	World Bank World Development Indicators / Eurostat
Foreign Direct Investments (% of GDP)	Net inflows of foreign direct investment as a percentage of GDP	World Bank World Development Indicators
Interest Payments (% of GDP)	General government interest payments on public debt as a percentage of GDP	IMF World Economic Outlook Database

Source: IMF World Economic Outlook Database and UN Population Data Portal

IV. Fiscal Sustainability in the Western Balkans: Index Results and Comparative Analysis

4.1 Country Results for the Fiscal Sustainability Index in 2023

To get a clearer picture of fiscal sustainability in the countries analyzed, this study builds a combined index using five important indicators. The selected indicators reflect not only current fiscal conditions but also long-term structural challenges. These include public debt, the primary balance, real GDP growth, the revenue-to-GDP ratio, and the old-age dependency ratio. Each of these indicators highlights a different aspect of a country's fiscal situation. Taken together, they provide a fuller and more balanced view of how public finances are managed. Table 2 below shows the main fiscal indicators used to build the Fiscal Sustainability Index for nine countries six from the Western Balkans and three EU member states.

Table 2. Core Fiscal Indicators for the Fiscal Sustainability Index (2023)

Indicator / Country	Public Debt	Primary Balance	Real GDP Growth	Revenue-to-GDP Ratio	Old-age Dependency Ratio
Albania	68.55	-0.02	2.25	27.61	24.46
Serbia	50.2	0.75	2	41.74	35.28
North Macedonia	51.9	-3.14	1.4	30.8	26.75
Montenegro	67.82	-3	3.2	38.46	27.2
Kosovo	20.27	-1.73	3.5	28.89	13.96
Bosnia and Hercegovina	27.61	1.02	2	39.34	33.23
Romania	48.28	-3.74	2.4	30.63	30.69
Bulgaria	21.08	-3.18	1.41	36.75	34.31
Croatia	65.16	-0.46	1.7	45.24	36.19

Source: Author's calculations

The data presents the fiscal and economic conditions in 2023, offering insight into how each is managing its public finances over time. Public debt levels differ notably, with Kosovo having the lowest ratio at 20.27%, and Albania the highest at 68.55%. Primary balances also vary, with Serbia (0.75%) and Bosnia and Herzegovina (1.02%) showing small surpluses, while countries like North Macedonia (−3.14%) and Montenegro (−3.00%) report larger deficits. All countries recorded positive real GDP growth, with Kosovo having the highest rate at 3.5% and Bulgaria the lowest at 1.41%. Revenue-to-GDP ratios highlight differences in how much countries are able to collect in taxes and other revenues, from 27.6% in Albania to 45.2% in Croatia. Lastly, the old-age dependency ratio, which reflects how much pressure ageing populations put on pensions and healthcare, is lowest in Kosovo (13.96%) and highest in Croatia (36.19%).

After presenting the original fiscal data, the next step is to standardize the values to allow fair and meaningful comparisons between countries. Differences in economic size, structure, and demographics can make direct comparisons of fiscal indicators unreliable or misleading. To solve these differences, the min–max method was applied to normalize each indicator as a standard approach in constructing composite indices. This method scales each indicator to a range between 0 and 1, where a score closer to 1 indicates stronger fiscal performance relative to the other countries in the sample. For indicators where higher values are considered better for fiscal sustainability, such as real GDP growth, the primary balance, and the revenue to GDP ratio, standard normalization was applied. Conversely, for indicators where lower values are preferable, including public debt and the old-age dependency ratio, the normalization was applied in reverse. This ensures that all values move in the same direction and make the index easier to interpret.

Table 3 below presents the normalized values for all five indicators across the nine countries included in the study. These standardized values form the basis for calculating the Fiscal Sustainability Index for each country in the subsequent stage of the analysis.

Table 3. Normalized Fiscal Indicators (2023)

Indicator / Country	Public Debt	Primary Balance	Real GDP Growth	Revenue-to-GDP Ratio	Old-age Dependency Ratio
Albania	0	0.781112277	0.404761905	0	0.52785277
Serbia	0.380066693	0.942497377	0.285714286	0.801304225	0.04072174
North Macedonia	0.344835443	0.126128017	0	0.181287213	0.42472102

Montenegro	0.015078395	0.155508919	0.857142857	0.615140346	0.40420266
Kosovo	1	0.422455404	1	0.072696343	1
Bosnia and Hercegovina	0.847869762	1	0.285714286	0.665494755	0.13327934
Romania	0.419916737	0	0.476190476	0.171590587	0.2475252
Bulgaria	0.983119654	0.118992655	0.005714286	0.518627729	0.08441325
Croatia	0.07025538	0.689611752	0.142857143	1	0

Source: Author's calculations

Using the normalized values presented earlier, the Fiscal Sustainability Index for each country was calculated as the simple average of the five indicators. The final scores range from 0 to 1, with higher values showing stronger overall fiscal sustainability. The index captures both how countries are performing now and the structural factors that shape their long-term ability to maintain stable public finances, such as revenue levels and demographic trends.

Table 4 below summarizes the FSI scores for all countries included in the analysis.

Table 4. Fiscal Sustainability Index (FSI) Scores by Country, 2023

Indicator / Country	Public Debt	Primary Balance	Real GDP Growth	Revenue-to-GDP Ratio	Old-age Dependency Ratio	FSI Score (2023)
Albania	0	0.781112277	0.404761905	0	0.52785277	0.342745391
Serbia	0.380066693	0.942497377	0.285714286	0.801304225	0.04072174	0.490060864
North Macedonia	0.344835443	0.126128017	0	0.181287213	0.42472102	0.215394339
Montenegro	0.015078395	0.155508919	0.857142857	0.615140346	0.40420266	0.409414636
Kosovo	1	0.422455404	1	0.072696343	1	0.699030349
Bosnia and Hercegovina	0.847869762	1	0.285714286	0.665494755	0.13327934	0.586471628
Romania	0.419916737	0	0.476190476	0.171590587	0.2475252	0.2630446

Bulgaria	0.983119654	0.118992655	0.005714286	0.518627729	0.08441325	0.342173514
Croatia	0.07025538	0.689611752	0.142857143	1	0	0.380544855

Source: Author's calculations

The findings indicate that there are no major differences in fiscal sustainability between the Western Balkans and the selected EU member states. This suggests that EU membership by itself does not lead to stronger fiscal outcomes, and that sustained structural reforms remain essential to ensure long-term fiscal stability. Kosovo achieved the highest score (0.699), indicating relatively strong fiscal performance, low public debt, and favorable demographic conditions. Among the EU countries, Croatia ranks highest with a score of 0.381, followed by Bulgaria (0.342) and Romania (0.263). These results suggest that even though they are part of the EU, these countries still face important challenges when it comes to achieving long-term fiscal sustainability.

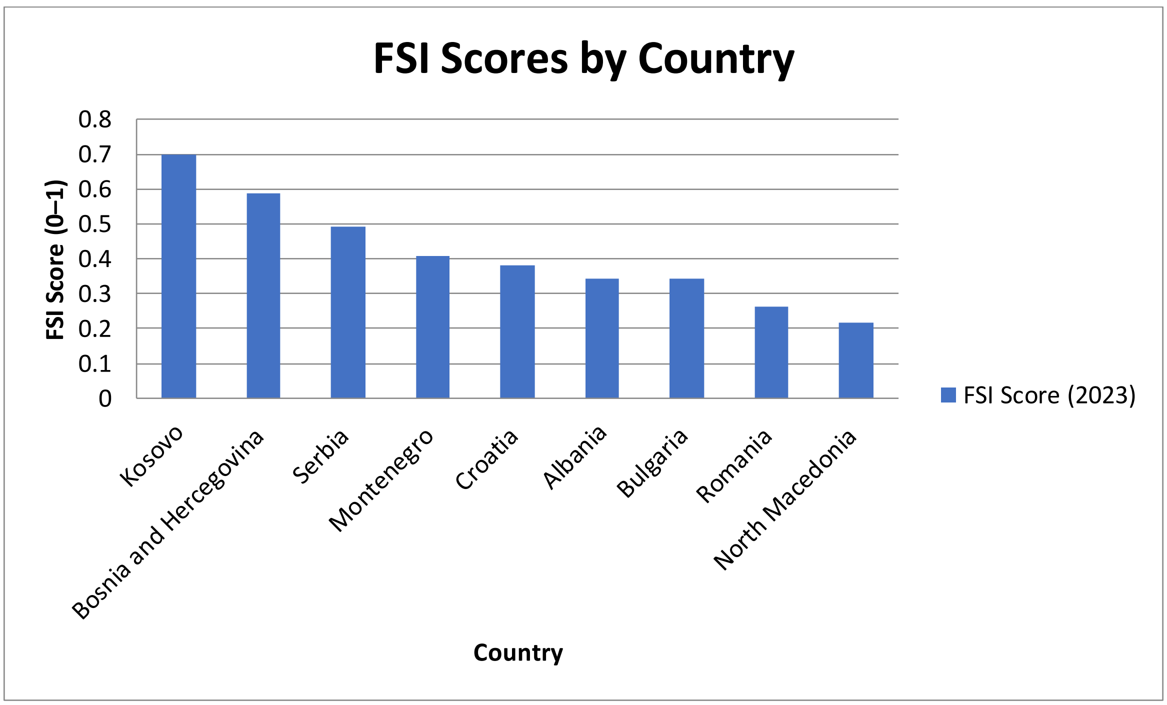

Figure 1. Fiscal Sustainability Index (FSI) Scores by Country, 2023

Kosovo

Kosovo ranks first in the index with a score of 0.699, showing a strong fiscal position overall. This result is mainly explained by its low level of public debt (20.27% of GDP), which received the highest score among all indicators. Kosovo also recorded the highest real GDP growth in the region (3.5%), pointing to a growing and dynamic economy. Although the primary balance was in deficit (−1.73%), this was balanced by relatively good results in revenue collection and the lowest old-age dependency ratio (13.96%), meaning there is currently less pressure from an ageing population. In general, Kosovo shows a positive mix of low debt, steady economic growth, and favorable demographics, even though its revenue base remains modest.

Bosnia and Herzegovina

With an FSI score of 0.586, Bosnia and Herzegovina demonstrates good performance in terms of fiscal sustainability. It recorded the highest primary balance surplus in the region (+1.02% of GDP), which had a strong positive effect on its overall score. Public debt is at a moderate level (27.61%), and the revenue-to-GDP ratio is relatively strong (39.34%). Although the country faces demographic pressure due to an old-age dependency ratio of 33.23%, this is partly balanced by stable economic growth (2.0%) and careful fiscal management.

Serbia

Serbia ranks third in the index with a score of 0.490, reflecting relatively balanced performance across all indicators. Its primary surplus (0.75% of GDP), strong revenue collection (41.74%), and moderate public debt (50.20%) contribute positively to its fiscal position. However, the country faces demographic challenges, as shown by a high old-age dependency ratio (35.28%), which slightly lowers its overall score. Nevertheless, Serbia's effective revenue generation supports fiscal stability and positions it well in comparison to other countries in the region.

Montenegro

Montenegro scores 0.409 in the index, placing it near the middle among the countries analyzed. Its relatively high public debt (67.82%) significantly lowers its score in that category. The country also reports a notable primary deficit (−3.00%), although this is partly offset by one of the highest GDP growth rates in the group (3.2%). Revenue collection is solid at 38.46%, and demographic pressure is moderate, suggesting some fiscal resilience. Overall, Montenegro presents a mixed fiscal profile: strong economic growth and reasonable revenues are balanced against high debt levels and a sizable deficit, highlighting the need for more disciplined fiscal management.

Croatia

Croatia ranks highest among the EU member states in the sample, with a score of 0.381. Its position is supported by a low primary deficit (−0.46%) and the highest revenue-to-GDP ratio (45.24%). However, fiscal sustainability is negatively affected by a high old-age dependency ratio (36.19%) and elevated public debt (65.16%). Economic growth is relatively low (1.7%), which limits the country's ability to improve its fiscal indicators through increased output. Croatia's case illustrates that even with EU-level fiscal integration and stronger institutional frameworks, structural demographic challenges can continue to pose significant constraints on long-term fiscal sustainability.

Albania

Albania scores 0.343, placing it in the lower part of the group. The country has the highest public debt in the sample (68.55%) and a relatively low revenue-to-GDP ratio (27.61%), which weakens its overall fiscal position. Its primary balance is nearly neutral (−0.02%), and economic growth is moderate at 2.25%. On the demographic side, Albania performs better than the EU countries in the sample, with a lower old-age dependency ratio (24.46%). Overall, Albania's results indicate structural issues in public finance, particularly in revenue collection and debt management.

Bulgaria

Bulgaria has a score of 0.342 in the index. Although its public debt is low (21.08%), the other indicators show weaker performance. The country has a notable primary deficit (−3.17%) and one of the lowest GDP growth rates in the group (1.41%). Revenue collection is relatively strong (36.75%), but demographic pressure is high, with an old-age dependency ratio of 34.31%. Bulgaria's case shows that low debt alone is not enough to ensure fiscal sustainability and long-term structural challenges must also be addressed.

Romania

Romania has a relatively low fiscal sustainability score of 0.263. This reflects several challenges, including high public debt (48.28%), a large primary deficit (−3.74%), and limited revenue generation (30.63%). While GDP growth of 2.4% provides some support, it is not enough to balance the country's fiscal weaknesses. Demographic pressure is moderate, but the overall results highlight significant vulnerabilities. Despite its EU membership, Romania continues to face important fiscal risks that require focused and sustained policy attention.

North Macedonia

North Macedonia has the lowest score in the group, at 0.215, indicating fiscal pressure across several areas. The country reported a primary deficit of −3.14%, slow economic growth (1.4%), and low revenue performance (30.80%). Although its public debt is moderate (51.90%), demographic pressure is growing. This combination of challenges makes it difficult to strengthen fiscal sustainability without broader structural reforms.

These findings highlight the heterogeneity of fiscal conditions within the Western Balkans and between candidate and member states. They also demonstrate that EU membership alone does not guarantee strong fiscal sustainability, and that structural reforms remain essential to achieving long-term fiscal stability.

4.2 Composition and Interpretation of Indicators of FSI for 2023

Figure 2 illustrates the contribution of each of the five main indicators to the Fiscal Sustainability Index score for 2023. This breakdown provides insight into the composition of fiscal performance in each country and enables a more detailed interpretation beyond the overall index score.

Kosovo achieves the highest overall score in the index, largely due to its very low public debt, strong economic growth, and favorable age structure. These three indicators are the primary drivers of its strong performance, collectively accounting for nearly 90% of the total score. In contrast, the revenue-to-GDP ratio remains low, indicating limited fiscal capacity. Despite this weakness, Kosovo's results suggest that favorable macroeconomic and demographic conditions can play an important role in supporting fiscal sustainability, even in the presence of institutional limitations.

In **Bosnia and Herzegovina**, the main contributor to the FSI is the primary balance, which is the strongest in the region. This is supported by low to moderate public debt and a solid revenue-to-GDP ratio. However, demographic pressure and modest economic growth reduce the overall score. Bosnia's fiscal sustainability is shaped more by strong budget discipline than by underlying structural or economic strength.

Serbia presents a relatively balanced profile, marked by strong revenue collection and a positive primary balance. However, its fiscal sustainability is weakened by a high old-age dependency ratio, which lowers its score on the demographic indicator. This combination suggests that while short-term fiscal conditions appear stable, long-term pressures related to population ageing are becoming more significant.

Montenegro offers a contrasting profile. High GDP growth and solid revenue collection positively contribute to its score. However, very low performance in public debt and the primary balance drag the overall score down. The fiscal risks in Montenegro are primarily linked to high debt levels, which are continued by a persistent budget deficit.

Croatia benefits from the highest revenue-to-GDP ratio in the group, which supports its fiscal sustainability score. However, this advantage is reduced by the highest old-age dependency ratio and modest economic growth. The combination highlights how demographic ageing and limited economic expansion can weaken fiscal sustainability, even when revenue performance is strong.

Albania faces a challenging fiscal profile. Although its primary balance and demographic indicators are relatively moderate, high public debt and weak revenue collection place serious limitations on its fiscal sustainability. The overall score reflects deeper structural issues related to fiscal discipline and the effectiveness of public institutions.

Bulgaria, despite maintaining low public debt, faces challenges due to one of the lowest economic growth rates and significant demographic pressure. Its weak primary balance is unusual for an EU country known for traditionally cautious fiscal policy. These findings suggest that Bulgaria's long-term fiscal sustainability is shaped more by ageing-related pressures and slow economic expansion than by existing debt levels.

Romania shows weak performance across all key indicators, with the primary balance scoring the lowest in the sample. Its levels of public debt, demographic pressure, and revenue collection are moderate, offering limited capacity to offset fiscal vulnerabilities. Despite EU membership, Romania's fiscal profile remains closer to that of transition economies facing structural challenges.

North Macedonia ranks last, with consistently low results in primary balance, economic growth, and revenue generation. While its demographic profile is relatively favorable, it does not compensate for the broader fiscal weaknesses. This outcome underscores the pressing need for comprehensive and coordinated structural reforms to enhance fiscal sustainability.

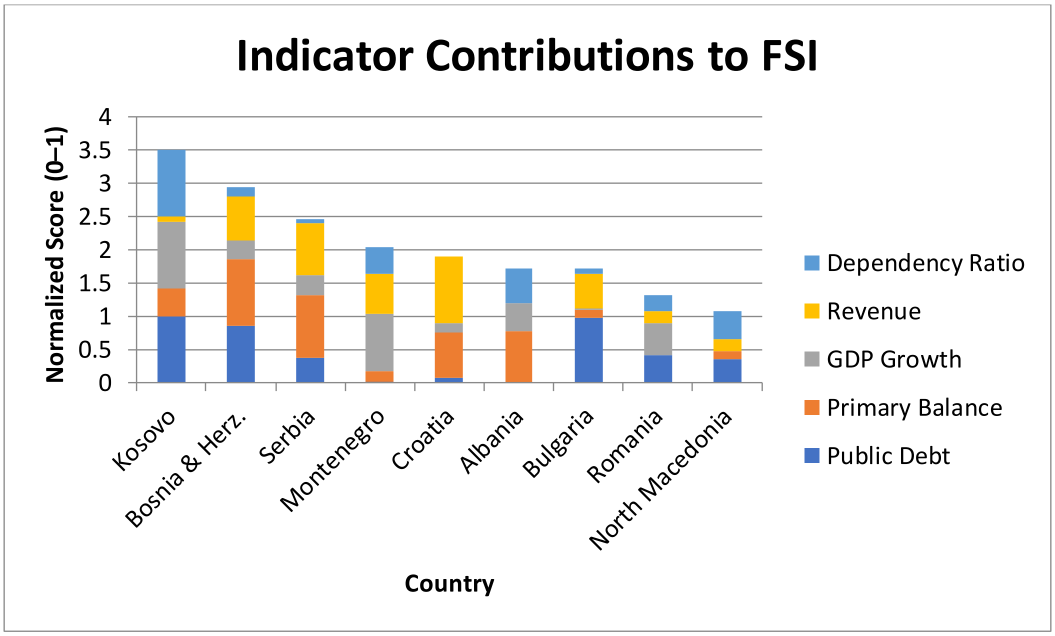

Figure 2. Indicator Contributions to FSI by Country

This indicator-based decomposition confirms that:

- There is no single path to fiscal strength—Kosovo performs well despite weak revenue collection, while Serbia and Bosnia and Herzegovina achieve solid results through strong budget discipline.
- Demographics play a more significant role in EU countries, where ageing populations are advancing more rapidly.

- Revenue mobilization remains a common weakness across the Western Balkans, with only a few exceptions, notably Serbia and Bosnia and Herzegovina.

4.3 Trends in Fiscal Sustainability 2021–2023

Analyzing fiscal sustainability over time provides important insights into the stability and resilience of public finances. Cross-country comparisons show how countries rank in a given moment, but looking at national trends helps to understand the changes happening over time. This approach makes it easier to determine whether a country is improving, maintaining its current status, or facing increasing challenges in managing its public finances. This section examines the evolution of the Fiscal Sustainability Index between 2021 and 2023 for each of the nine countries included in this study: six Western Balkan candidates and three EU member states. Although countries in the region share the goal of EU membership, their progress in managing public finances varies significantly. These differences suggest that fiscal sustainability is influenced more by institutional strength, commitment to reform, and economic structure than by participation in the EU accession process alone.

Albania presents a fluctuating trend, with a slight decline in 2022 (0.257) followed by an improvement in 2023 (0.343), slightly exceeding the level seen in 2021 (0.330). **Serbia** shows a steady improvement over time, with its Fiscal Sustainability Index rising from 0.459 in 2021 to 0.490 in 2023, reflecting gradual progress in key fiscal indicators. **North Macedonia** on the other hand, exhibits a consistent decline, with its score falling from 0.258 in 2021 to 0.215 in 2023. This trend points to a deteriorating fiscal position, likely driven by weak revenue growth, demographic pressures, or delayed structural reforms. **Montenegro's** fiscal sustainability score declined noticeably, from 0.626 in 2021 to 0.409 in 2023, with the largest decline occurring most significantly in 2022. This downward trajectory suggests increasing fiscal vulnerability, potentially linked to high public debt and limited revenue-generating capacity**. Kosovo** stands out with the highest score in 2023 (0.699), showing a significant recovery from its 2022 decline (0.542). **Bosnia and Herzegovina** maintained stable FSI scores over the three years, ranging from 0.610 in 2021 to 0.586 in 2023.

Among the EU countries included in the analysis, **Romania** showed some progress in fiscal sustainability between 2021 and 2022, with its score rising from 0.232 to 0.297. However, in 2023 the score went down to 0.263. This change may reflect economic instability or difficulties in managing public finances, especially due to inflation and external financial pressures. In **Bulgaria**, the score reached 0.469 in 2022 but then decreased to 0.342 in 2023. Although 2022 marked a stronger performance, the decline in the following year suggests increasing fiscal challenges, possibly related to demographic shifts or higher government spending. **Croatia** showed a stable performance in 2021 and 2022, with a score around 0.547, but its score dropped significantly to 0.381 in 2023.

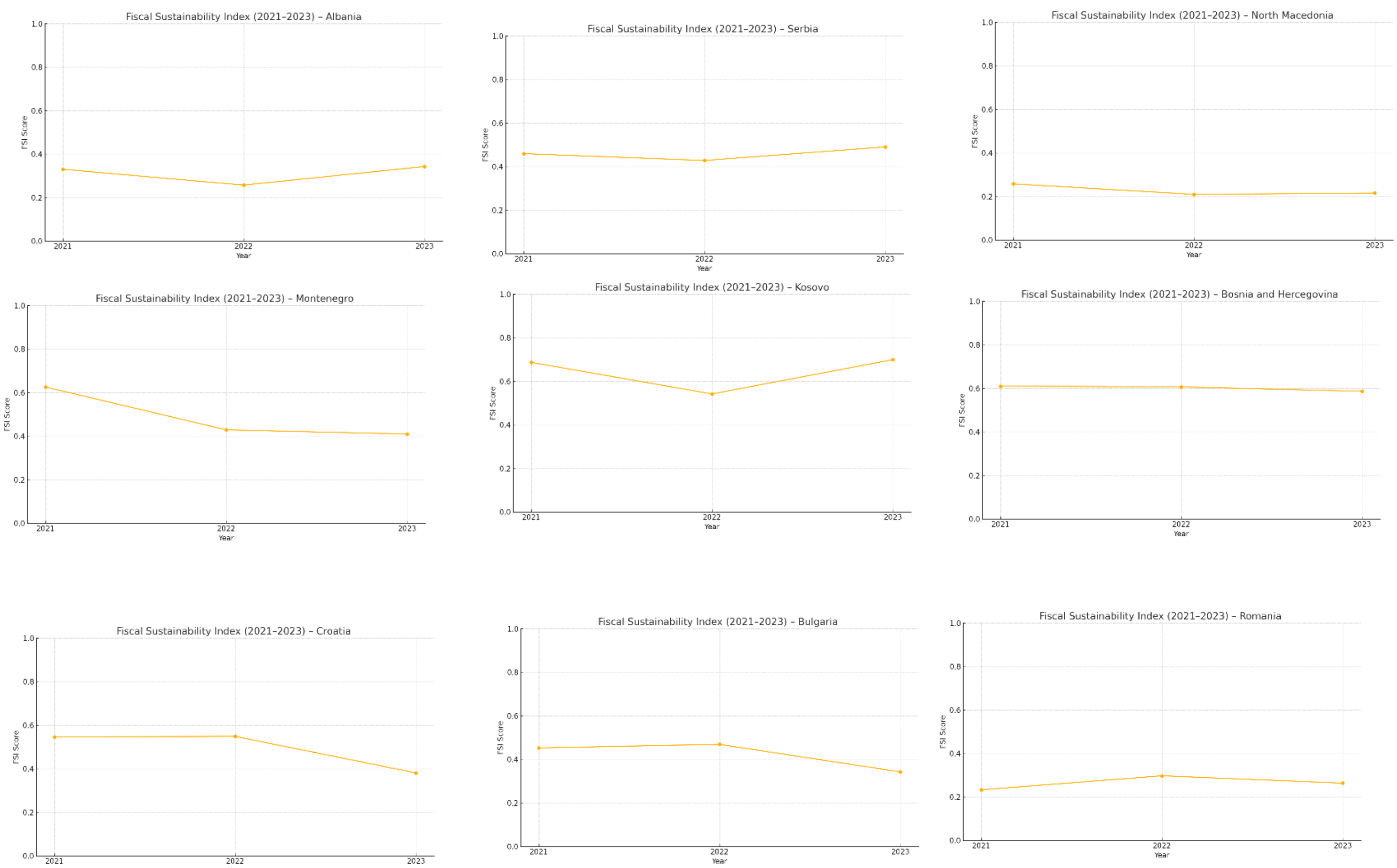

Figure 3. FSI Trends 2021-2023 by Country

4.4 Comparison of Western Balkan Countries with EU Member States

This section compares the Fiscal Sustainability Index scores of the Western Balkan countries with those of three EU member states: Romania, Bulgaria and Croatia. These EU countries were chosen as comparator countries due to their similar historical and institutional paths and as well as their relatively recent accession to the European Union. The aim of this comparison is to assess whether EU membership leads to better fiscal performance and to what extent the Western Balkan countries are meeting EU standards in terms of fiscal sustainability.

The results between 2021 and 2023 show that there is no uniform trend where EU member states consistently outperform the Western Balkan countries. Moreover, some Western Balkan countries demonstrate stronger or more sustainable fiscal performance over the observed period. For instance, Kosovo consistently ranks at the top of the list driven by a very low debt-to-GDP ratio and a positive primary balance. Similarly, Bosnia and Herzegovina maintained stable and relatively high scores above 0.58 over the three years, reflecting a prudent fiscal policy and limited reliance on external debt. In contrast, Romania, despite being an EU member since 2007, recorded some of the lowest scores throughout the period, remaining below 0.30 in all three years. This poor performance can be partly explained by structural budget deficits, rising public debt and weaker revenue collection, despite its larger economic size. Bulgaria saw a significant decline in 2023, raising concerns about the sustainability of its fiscal path. Although Croatia performed relatively better in 2021 and 2022 with scores above 0.54, its index dropped significantly in 2023 to 0.381, possibly due to increased spending and liabilities related to EU-funded investments.

Another key conclusion from this analysis is the notable diversity in fiscal sustainability across the Western Balkans. Montenegro closely followed Kosovo in 2023 with a strong index, despite facing higher debt levels. This suggests that improvements in other areas, such as the revenue-to-GDP ratio and real GDP growth, can offset the impact of higher debt. On the other side, North Macedonia showed the weakest performance in the region over the three years, which may reflect both low revenue collection capacity and weak economic growth. Albania showed gradual improvement until 2023, supported by revenue growth and solid economic performance, but it still scored below the regional average. This uneven performance highlights that fiscal sustainability is influenced more by national policy choices than by EU accession status alone.

A closer look at the five components of the index reinforces the fact that, overall, Western Balkan countries score better on public debt and primary balance, but EU countries score better on revenue mobilization. For example, despite Romania’s larger economy, it struggles to maintain a balanced budget and control rising debt, whereas Kosovo’s smaller size combined with prudent fiscal management enables it to achieve high sustainability scores. Demographic trends, such as population ageing, also contribute to fiscal pressures in EU Member States more than Western Balkan countries, where old-age dependency ratios are still relatively low.

These results highlight two key points worth emphasizing in this section. First, EU integration should be seen as a means to support reforms rather than a guarantee of results. Countries such as Kosovo and Montenegro have shown that significant progress is possible without full EU membership, as long as domestic institutions are effective and public finance policies are prudent. Second, the new EU members still face significant challenges, and their experience illustrates that maintaining fiscal discipline requires continued efforts, especially when external shocks or internal political tensions arise.

To conclude, this comparison proves that fiscal sustainability is not determined solely by membership status, but by the ability to design and implement sound economic and budgetary policies. For Western Balkan countries, the path to stronger fiscal health lies in improving revenue systems, maintaining debt control, and strengthening institutional capacity. For EU member states, the key takeaway is that ongoing structural reforms and long-term fiscal planning remain essential, even after accession. The convergence in Fiscal Sustainability Index scores between the two groups underscores that responsible fiscal governance is a continuous process, not a one-time achievement.

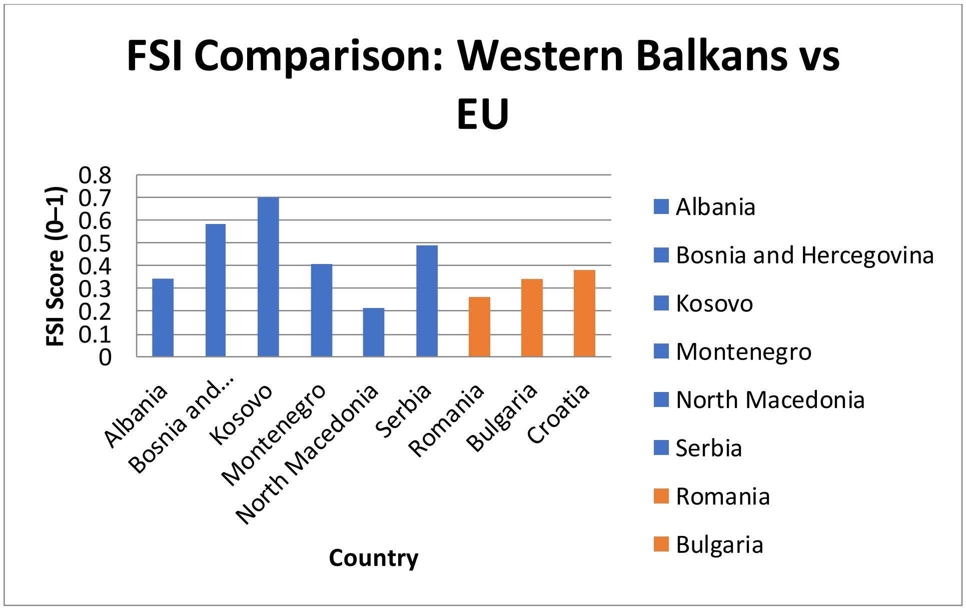

Figure 4. FSI Scores: Western Balkans vs EU Member States, 2023

V. Econometric Analysis of the Factors Influencing Fiscal Sustainability

5.1 Specification of the Empirical Model

This section presents the empirical analysis for identifying the drivers of fiscal sustainability in the Western Balkans and selected EU member states. The analysis uses cross-country panel data for the years 2021–2023, focusing on three key explanatory variables: tax revenue, foreign direct investment, and interest payments. Two models are developed: a baseline model with economic variables only, and an extended model that includes a dummy variable for regional differentiation.

5.1.1 Baseline Model

The baseline econometric model is estimated using pooled Ordinary Least Squares (OLS) regression. The dependent variable is the Fiscal Sustainability Index (FSI), constructed using normalized scores from five fiscal and macroeconomic indicators. The explanatory variables reflect the fiscal capacity and external financial exposure of each country. The baseline specification is as follows:

$$\mathbf{FSI\_it = \beta_0 + \beta_1 * TaxRevenue\_it + \beta_2 * FDI\_it + \beta_3 * InterestPayments\_it + \varepsilon\_it}$$

Where:
- FSI_it represents the Fiscal Sustainability Index for country i in year t;
- TaxRevenue_it denotes tax revenues as a percentage of GDP;
- FDI_it is the foreign direct investment inflow as a percentage of GDP;
- InterestPayments_it captures interest payments on public debt as a percentage of GDP;
- ε_it is the error term.

The expected signs of the coefficients are:
- $\beta_1 > 0$: Higher tax revenues improve fiscal sustainability.
- $\beta_2 > 0$: Greater FDI may signal macroeconomic stability.
- $\beta_3 < 0$: Larger interest payments constrain fiscal space and undermine sustainability.

5.1.2 Extended Model with Regional Dummy Variable

To examine whether structural regional differences influence fiscal sustainability beyond economic fundamentals, the model is extended by including a binary dummy variable representing regional affiliation:

FSI_it = β_0 + β_1 * TaxRevenue_it + β_2 * FDI_it + β_3 * InterestPayments_it + β_4 * WesternBalkans_i + ε_it

The dummy variable WesternBalkans_i takes the value of 1 if the country belongs to the Western Balkans group (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia), and 0 if it is an EU member state (Croatia, Romania, Bulgaria). A significant coefficient for this variable would suggest region-specific institutional or macroeconomic conditions impacting fiscal sustainability.

5.1.3 Model Validation Tests

To ensure the reliability of the estimated models, several diagnostic tests are conducted:
- Multicollinearity is assessed using Variance Inflation Factors (VIF);
- Heteroskedasticity is tested using the Breusch-Pagan test;
- Residual normality is verified with the Anderson-Darling test;
- Autocorrelation is examined using the Durbin-Watson statistic.

The tests conducted confirmed the key assumptions of the OLS model and validated its overall reliability, supporting the robustness of the findings.

5.2 Regression Results

5.2.1 Baseline Model

Model Summary

The regression model explains approximately 54.7% of the variance in the Fiscal Sustainability Index across countries and years, as reflected by an R-squared value (R^2) of 0.547. This indicates that slightly more than half of the variation in FSI is accounted for by the model's independent variables.

Moreover, the F-statistic equals 9.232 with a p-value of 0.000, demonstrating that the model is statistically significant overall. This means that at least one of the explanatory variables, Tax Revenue, FDI, or Interest Payments, contributes significantly to explaining fiscal sustainability. This outcome validates the suitability of the model and supports the relevance of including these variables in the analysis.

Regression Coefficients

The following table presents the estimated coefficients, p-values, and interpretation for each independent variable:

Table 5. Regression Results – Baseline Model

Variable	Coefficient (B)	P-Value	Interpretation
Intercept	-0.110	0.546	Not statistically significant. No meaningful economic interpretation.
Tax Revenue (% GDP)	0.031	0.002	Highly significant. A 1% increase in tax revenue increases FSI by 0.031 units, indicating strong fiscal impact.
FDI (% GDP)	-0.003	0.749	Not statistically significant. Negligible effect on FSI.
Interest Payments (% GDP)	-0.062	0.135	Negative sign aligns with expectations, but effect is not statistically significant.

Source: Author's calculations

Among all variables, only Tax Revenue is statistically significant at the 1% level. Its strong positive coefficient reinforces the critical role of effective tax collection in achieving fiscal sustainability. The effects of FDI and Interest Payments, while aligned with theoretical expectations, do not exhibit significant predictive power in this model. Nevertheless, the negative coefficient for interest payments is consistent with the hypothesis that debt servicing burdens can constrain fiscal space.

Correlation Analysis

The following table shows the pairwise Pearson correlations between FSI and the explanatory variables:

Table 6. Correlation Matrix of Key Variables (Baseline Model)

Relationship	Correlation (r)	P-Value	Interpretation
FSI ↔ Tax Revenue	0.686	0.000	Strong positive correlation. Higher tax revenues are associated with higher fiscal sustainability.
FSI ↔ Interest Payments	-0.426	0.013	Moderate negative correlation. Higher interest payments are linked to weaker fiscal sustainability.
FSI ↔ FDI	0.225	0.129	Weak positive correlation. Not statistically significant.

Source: Author's calculations

The regression results reveal that tax revenue is a statistically significant and positive determinant of fiscal sustainability. A one percentage point increase in tax revenue corresponds to a 0.031 unit rise in the FSI, all else equal. Foreign direct investment and interest payments are not statistically significant in this specification, although interest payments still show the expected negative relationship. Diagnostic tests indicate acceptable levels of multicollinearity and well-behaved residuals, reinforcing the model's reliability. These findings underscore the crucial role of domestic revenue generation in supporting fiscal health and EU convergence readiness.

The analysis indicates that foreign direct investment is not statistically significant in explaining fiscal sustainability within the observed sample. While FDI is theoretically expected to support fiscal health through increased economic activity and tax revenues, the results suggest that its direct contribution to the Fiscal Sustainability Index is limited in this context. This may reflect the composition or short-term nature of investment flows during the 2021–2023 period, or the dominance of other structural factors such as domestic revenue mobilization. The insignificance of FDI in the model highlights the stronger and more consistent role played by internal fiscal mechanisms in shaping sustainable public finances.

5.2.2 Extended Model with Regional Dummy Variable

Model Summary

The regression model that includes a dummy variable for Western Balkan countries (WB_dummy) explains approximately 55.3% of the variance in the Fiscal Sustainability Index (FSI), as indicated by the R-squared value ($R^2 = 0.553$). This represents a slight improvement over the baseline model. The model is statistically significant overall, as the F-statistic is 6.809 with a p-value of 0.001. This confirms that the combination of tax revenue, FDI, interest payments, and the regional dummy variable collectively contribute significantly to explaining fiscal sustainability.

Regression Coefficients

The table below summarizes the estimated coefficients, significance levels, and interpretations:

Table 7. Regression Results – Extended Model with Regional Dummy

Variable	Coefficient (B)	P-Value	Interpretation
Intercept	-0.116	0.531	Not statistically significant. No valid economic interpretation.
Tax Revenue (% GDP)	0.031	0.002	Highly significant. A 1% increase in tax revenue leads to a 0.031 unit increase in FSI.
FDI (% GDP)	-0.006	0.624	Not statistically significant. Very weak effect.
Interest Payments (% GDP)	-0.061	0.149	Negative effect consistent with expectations, but not significant.
WB Dummy	0.028	0.567	Not statistically significant. No meaningful difference in FSI between Western Balkans and EU countries.

Source: Author’s calculations

Only tax revenue remains statistically significant and has a strong positive influence on fiscal sustainability. The dummy variable representing the Western Balkans does not add explanatory power to the model, indicating that once economic variables are controlled for, region-specific effects are not substantial. FDI and interest payments continue to lack statistical significance.

Correlation Analysis

The following table presents Pearson correlation coefficients between FSI and the explanatory variables:

Table 8. Correlation Matrix with Regional Dummy Variable

Relationship	Correlation (r)	P-Value	Interpretation
FSI ↔ Tax Revenue	0.686	0.000	Strong and positive. Tax revenue strongly correlates with FSI.
FSI ↔ Interest Payments	-0.426	0.013	Moderate negative relationship. As interest payments increase, FSI decreases.
FSI ↔ FDI	0.225	0.129	Weak positive correlation. Not statistically significant.
FSI ↔ WB Dummy	0.201	0.158	Very weak and statistically insignificant relationship.

Source: Author's calculations

The extended regression model reaffirms that tax revenue remains the only statistically significant and robust predictor of fiscal sustainability. Its effect is consistent and positive, reinforcing the central role of domestic revenue mobilization in supporting sound fiscal outcomes. The inclusion of a dummy variable for the Western Balkans does not significantly enhance the model's explanatory power and does not indicate a structural difference in fiscal sustainability between Western Balkan and EU member states after controlling for key economic variables. This implies that regional affiliation alone is not a decisive factor; instead, fiscal outcomes are more closely tied to measurable economic fundamentals. The lack of statistical significance for other variables, including FDI and interest payments, further underscores the dominant role of internal fiscal capacity. These findings strengthen the argument that long-term fiscal sustainability depends primarily on how effectively governments mobilize and manage their public resources regardless of geographic or institutional context.

5.3 Interpretation of Findings

This section interprets the regression results and highlights their key policy implications. The findings confirm that tax revenue is the only variable exhibiting a statistically significant effect on fiscal sustainability. In contrast, foreign direct investment, interest payments, and the regional dummy variable do not show statistically significant impacts. This indicates that a country's fiscal position relies primarily on its internal revenue-generating capacity rather than on its regional affiliation or external financial inflows.

The strong and consistent impact of tax revenue underscores its pivotal role in ensuring fiscal sustainability. Countries capable of mobilizing higher tax revenues consistently perform better in the Fiscal Sustainability Index. This underscores the importance of establishing effective and equitable taxation systems, particularly for Western Balkan countries, where informality and tax evasion remain significant structural challenges. Enhancing tax collection mechanisms is therefore critical, not only for macroeconomic stability but also for alignment with EU fiscal standards. Foreign direct investment does not exhibit a significant direct influence on fiscal sustainability in this model, potentially reflecting the short-term character of certain investment flows or the possibility that FDI's fiscal benefits are more indirect and longer-term. Similarly, interest payments, though negatively associated with FSI as expected, lack statistical significance. These findings indicate that, while FDI and debt servicing have relevance within the broader economic context, they are not direct determinants of fiscal sustainability within the observed timeframe.

A key feature of the extended model is the inclusion of a dummy variable that distinguishes WB6 countries from EU member states (Croatia, Romania, and Bulgaria). The coefficient for this variable is small and statistically insignificant, indicating no systematic difference in fiscal sustainability between the two groups once economic fundamentals are accounted for. This is an important finding, as it challenges the common perception that Western Balkan countries are inherently fiscally weaker than their EU counterparts. Instead, the results suggest that differences in fiscal sustainability are primarily driven by performance on core factors like tax revenue rather than by regional status. Practically, this implies that with appropriate reforms, Western Balkan countries can achieve fiscal outcomes comparable to those of EU member states, regardless of their current accession status.

VI. Conclusions and Policy Recommendations

6.1 Summary of Key Findings

This section summarizes the key findings of the thesis. The research combined index-based assessment and econometric analysis to provide a comprehensive and comparative view of fiscal performance in nine countries: six from the Western Balkans and three EU member states.

The Fiscal Sustainability Index is based on five key indicators: public debt, the primary balance, real GDP growth, the revenue-to-GDP ratio, and the old-age dependency ratio. Each of these indicators was normalized to make meaningful comparisons between countries possible. Kosovo recorded the highest Fiscal Sustainability Index score at 0.699. This result reflects its low levels of public debt, strong economic growth, and relatively favorable demographic trends. Bosnia and Herzegovina ranked second with a score of 0.586, supported by consistent budget discipline and a manageable debt burden. North Macedonia had the lowest score, reaching only 0.215, mostly due to low tax revenues, slow economic growth, and rising pressure from an ageing population. Among the EU countries in the study, Croatia had the highest score with 0.381, ahead of both Romania with 0.263 and Bulgaria with 0.342. These results suggest that being part of the European Union does not automatically lead to stronger fiscal sustainability. In fact, some Western Balkan countries, especially Kosovo and Bosnia and Herzegovina, performed better than the EU countries included in the study.

The second set of findings clarifies how each indicator within the Fiscal Sustainability Index contributed to overall fiscal performance, highlighting which factors had the greatest impact. Kosovo's strong performance was primarily supported by its low public debt and favorable demographic conditions, despite having a relatively low revenue-to-GDP ratio. Serbia performed well due to substantial revenue collection and a primary surplus; however, its overall standing was weighed down by a high old-age dependency ratio. Montenegro experienced solid economic growth and reasonable revenue collection, but its high public debt and recurring budget deficits undermined its fiscal health. These differences demonstrate that even countries from the same region, despite sharing similar past experiences, can have significantly different levels of fiscal strength and vulnerability.

The time series analysis from 2021 to 2023 revealed important developments in fiscal sustainability. Serbia demonstrated consistent improvement over the three-year period, reflecting gradual fiscal strengthening. In contrast, Kosovo experienced a decline in 2022 but showed a strong recovery in 2023, indicating a notable fiscal resilience. In contrast, Montenegro and North Macedonia showed negative trends over the period, indicating growing challenges to their fiscal sustainability. The EU countries' performance was mixed: Romania experienced a decline in its FSI score in 2023, while both Bulgaria and Croatia faced setbacks following earlier improvements. These developments confirm that fiscal sustainability is not a static goal but a dynamic one, continuously shaped by domestic policy decisions and external economic pressures.

The econometric analysis provided further insights into the drivers of fiscal sustainability. The baseline regression model, using pooled OLS, included three explanatory variables: tax revenue, foreign direct investment, and interest payments. The only variable with a statistically significant effect was tax revenue. A one-percentage-point increase in tax revenue was associated with a 0.031 unit increase in the FSI score. This confirms the critical role of revenue mobilization in achieving sustainable fiscal outcomes. FDI and interest payments were not statistically significant in this model, although interest payments showed the expected negative relationship with fiscal sustainability.

The model was expanded by adding a regional dummy variable to assess whether Western Balkan countries consistently differ in fiscal performance compared to EU member states. The dummy variable was statistically insignificant, suggesting that regional affiliation does not independently determine fiscal sustainability. This finding challenges the common assumption that Western Balkan countries are less stable than EU countries, suggesting that fiscal strength depends more on policy and reforms than on whether a country is in the Western Balkans or part of the EU.

The analysis also revealed that FDI, although often promoted as a tool for fiscal improvement, does not directly influence fiscal sustainability in the short term. This could be due to the nature of investment flows during the study period, which may have lacked the scale or duration necessary to significantly impact public finances. Interest payments showed a negative link with the FSI, but the relationship was not statistically significant. This suggests that although debt servicing represents a fiscal burden, its effect on overall fiscal sustainability may be offset by other factors such as the revenue-to-GDP ratio and economic growth. The key takeaway from the econometric analysis is the dominant influence of domestic tax revenue on fiscal sustainability. Countries with stronger tax systems and higher tax collection rates consistently achieve better fiscal sustainability outcomes, regardless of their EU membership status. This underscores the importance of strengthening tax administration, reducing informality, and broadening the revenue base as essential strategies for successful fiscal consolidation.

Overall, the combined results from the index and the regression analysis lead to several key conclusions. First, fiscal sustainability across the Western Balkans differs significantly and is not necessarily weaker than that of newer EU member states. Second, strong fiscal sustainability is driven primarily by domestic factors, particularly tax revenue, rather than external status or investment flows. Third, comparing countries in the region requires looking beyond headline figures to include structural and institutional factors. These findings have important implications for EU accession strategies. For Western Balkan countries, prioritizing improvements in domestic revenue systems may lead to more meaningful progress in fiscal sustainability than solely focusing on compliance with formal EU rules. For policymakers and international partners, the results suggest that targeted fiscal support should focus on institutional reforms and technical assistance in areas such as tax policy and administration. This approach may be more effective than reliance on broad conditionality or using one-size-fits-all benchmarks.

6.2 Policy Recommendations for the Western Balkan Countries

The findings of this thesis point toward several potential directions that may contribute to improved fiscal sustainability in the Western Balkans, particularly within the broader context of EU integration. Taking into account the diverse institutional and economic realities across the region, the following suggestions are offered as possible avenues for reflection and further policy development:

- **Enhancing domestic revenue systems could be a valuable priority**
  Based on the strong relationship identified between tax revenue and fiscal sustainability, improving revenue mobilization could lead to positive outcomes. This could be achieved through enhancements in tax administration, tackling informality, and widening the tax base.

Additionally, measures such as strengthening property taxation, and expanding the use of digital tax tools may contribute to greater fiscal performance in the long run.

- **EU accession could be seen as a catalyst for reform, not a guarantee of fiscal success.** The findings indicate that strong fiscal performance is not necessarily tied to EU membership. Several Western Balkan countries have achieved better results than EU member states in this analysis. Therefore, the EU integration process may be more impactful when seen as a means to reinforce domestic policy development, rather than as a guarantee of fiscal improvement.
- **Structural reforms beyond FDI and debt management may deserve greater attention** As foreign direct investment and interest payments were found to have limited direct influence on fiscal sustainability in this model, longer-term efforts could focus more on institutional quality, transparency, and efficient spending. These factors may be more decisive in fostering stable public finances, especially in the face of external shocks or financial uncertainty.
- **Adapting fiscal strategies to national contexts is essential** The variation in fiscal performance across the Western Balkans suggests that a uniform policy approach may not produce effective outcomes. Countries under fiscal pressure might benefit from combining measures that support economic growth with efforts to reinforce budget discipline. On the other hand, those with more stable fiscal positions could shift their focus toward long-term reforms that strengthen institutional capacity and enhance overall resilience.
- **Promoting a culture of fiscal responsibility and long-term planning may strengthen policy outcomes** Rather than focusing solely on meeting short-term fiscal targets, a more sustainable approach could involve integrating long-term considerations into fiscal planning. This might include adopting climate-sensitive budgeting, addressing demographic challenges, and maintaining investment in essential public services such as health, education, and infrastructure.

6.3 Limitations of the Research and Suggestions for Future Studies

Although this research offers valuable insights into fiscal sustainability in the Western Balkans and provides a robust methodological framework, several limitations must be acknowledged. These limitations suggest areas where future studies can build upon and refine the findings presented here.

First, the temporal scope of the analysis is limited to the years 2021–2023. While this three-year period captures recent post-pandemic fiscal dynamics, it does not allow for the identification of longer-term trends or cyclical patterns. Fiscal sustainability is a long-run concept, and a longer time horizon would provide a more comprehensive understanding of structural changes, dynamics, and the effects of reform implementation. Future research could extend the analysis to cover at least a decade, including pre- and post-accession phases for new EU members.

Second, the econometric analysis has a limited number of observations. With only nine countries and three years of data, the sample size limits the statistical power of the regressions. It reduces the ability to test more complex model specifications, such as dynamic panel models or interaction effects. This also restricts the inclusion of additional explanatory variables, such as political stability, governance quality, etc, which may play an important role in shaping fiscal performance.

Third, while the Fiscal Sustainability Index captures key macroeconomic and demographic indicators, it does not account for qualitative factors such as institutional capacity, political will, public trust, or the credibility of fiscal policy. These aspects are known to influence fiscal outcomes, particularly in transition economies, but are more difficult to quantify and integrate into composite indices. Future research should consider combining quantitative and qualitative approaches to provide a more holistic understanding of fiscal sustainability.

Fourth, the analysis assumes equal weighting across all five dimensions of the index. Although this ensures methodological neutrality, it may not fully reflect the relative importance of each indicator in determining fiscal sustainability in different contexts. Alternative weighting schemes could be explored in future studies to test the robustness of the index and improve its policy relevance.

Fifth, the study relies on secondary data from international sources such as the IMF, World Bank, Eurostat, and the UN. While these databases are generally reliable and comparable across countries, they may not capture country-specific nuances, real-time policy shifts, or informal fiscal mechanisms, particularly in developing economies. Future research may benefit from the use of national datasets, survey-based data, or interviews with policymakers to validate the findings.

Finally, the analysis focuses primarily on economic and demographic factors without accounting for the environmental and social sustainability of fiscal policies. Given the increasing importance of climate-related expenditures, green investment strategies, and social equity in fiscal planning, future studies should explore how environmental and social indicators can be integrated into broader fiscal sustainability assessments. This could support more holistic and forward-looking fiscal frameworks, particularly for countries preparing for EU accession. Researchers may also explore the interaction between fiscal sustainability and political economy variables, such as election cycles, fiscal transparency, and the role of independent fiscal institutions. Moreover, employing mixed methods, including case studies, structured interviews with fiscal authorities, and policy document analysis, could offer more insights into how institutional settings influence fiscal sustainability.

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List of Abbreviations

Abbreviation	**Full Term**
DSF	Debt Sustainability Framework
EU	European Union
FDI	Foreign Direct Investment
FSI	Fiscal Sustainability Index
GDP	Gross Domestic Product
IMF	International Monetary Fund
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
S0	Short-term Fiscal Risk Indicator (European Commission)
S1	Medium-term Fiscal Sustainability Indicator (European Commission)
S2	Long-term Fiscal Sustainability Indicator (European Commission)
SGP	Stability and Growth Pact
SRDSF	Sovereign Risk and Debt Sustainability Framework
UN	United Nations
VAT	Value-Added Tax
WB	Western Balkans
WDI	World Development Indicators

List of Figures and Tables

Annexes

1. Thesis Data File

2. **Regression Results - Baseline Model**

Descriptive Statistics

	Mean	Std. Deviation	N
FSI	.43381915	.149057172	27
Tax_Rev	20.54367	3.125190	27
FDI	5.97574	2.650438	27
Interest	1.3159	.61512	27

Correlations

		FSI	Tax_Rev	FDI	Interest
Pearson Correlation	FSI	1.000	.686	.225	-.426
	Tax_Rev	.686	1.000	.538	-.235
	FDI	.225	.538	1.000	.266
	Interest	-.426	-.235	.266	1.000
Sig. (1-tailed)	FSI	.	.000	.129	.013
	Tax_Rev	.000	.	.002	.119
	FDI	.129	.002	.	.090
	Interest	.013	.119	.090	.
N	FSI	27	27	27	27
	Tax_Rev	27	27	27	27
	FDI	27	27	27	27
	Interest	27	27	27	27

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Interest, Tax_Rev, FDI[b]	.	Enter

a. Dependent Variable: FSI

b. All requested variables entered.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.316	3	.105	9.232	.000[b]
	Residual	.262	23	.011		
	Total	.578	26			

a. Dependent Variable: FSI

b. Predictors: (Constant), Interest, Tax_Rev, FDI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
		B	Std. Error	Beta			Tolerance
1	(Constant)	-.110	.179		-.612	.546	
	Tax_Rev	.031	.009	.659	3.498	.002	.556
	FDI	-.003	.011	-.061	-.324	.749	.547
	Interest	-.062	.040	-.255	-1.549	.135	.728

Coefficient Correlations[a]

Model			Interest	Tax_Rev	FDI
1	Correlations	Interest	1.000	.466	-.479
		Tax_Rev	.466	1.000	-.641
		FDI	-.479	-.641	1.000
	Covariances	Interest	.002	.000	.000
		Tax_Rev	.000	8.067E-5	-6.149E-5
		FDI	.000	-6.149E-5	.000

a. Dependent Variable: FSI

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Tax_Rev	FDI	Interest
1	1	3.759	1.000	.00	.00	.01	.01
	2	.141	5.167	.00	.01	.06	.67
	3	.094	6.319	.04	.01	.59	.00
	4	.006	24.501	.96	.97	.35	.32

a. Dependent Variable: FSI

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.25172475	.64303696	.43381915	.110173711	27
Residual	-.152095899	.189891502	.000000000	.100398177	27
Std. Predicted Value	-1.653	1.899	.000	1.000	27
Std. Residual	-1.425	1.779	.000	.941	27

a. Dependent Variable: FSI

3. Extended Model with Regional Dummy Variable

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
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	Memory Required	4352 bytes
	Additional Memory Required for Residual Plots	632 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
FSI	.43381915	.149057172	27
Tax_Rev	20.54367	3.125190	27
FDI	5.97574	2.650438	27
Interest	1.3159	.61512	27
WB_dummy	.67	.480	27

Correlations

		FSI	Tax_Rev	FDI	Interest	WB_dummy
Pearson Correlation	FSI	1.000	.686	.225	-.426	.201
	Tax_Rev	.686	1.000	.538	-.235	.256
	FDI	.225	.538	1.000	.266	.430
	Interest	-.426	-.235	.266	1.000	.063
	WB_dummy	.201	.256	.430	.063	1.000
Sig. (1-tailed)	FSI	.	.000	.129	.013	.158
	Tax_Rev	.000	.	.002	.119	.099
	FDI	.129	.002	.	.090	.013
	Interest	.013	.119	.090	.	.378
	WB_dummy	.158	.099	.013	.378	.
N	FSI	27	27	27	27	27
	Tax_Rev	27	27	27	27	27
	FDI	27	27	27	27	27
	Interest	27	27	27	27	27
	WB_dummy	27	27	27	27	27

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	WB_dummy, Interest, Tax_Rev, FDI[b]	.	Enter

a. Dependent Variable: FSI

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1
1	.744[a]	.553	.472	.108317789	.553	6.809	4

Model Summary[b]

Model	Change Statistics: df2	Sig. F Change	
1	22	.001	1.687

a. Predictors: (Constant), WB_dummy, Interest, Tax_Rev, FDI

b. Dependent Variable: FSI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.320	4	.080	6.809	.001[b]
	Residual	.258	22	.012		
	Total	.578	26			

a. Dependent Variable: FSI

b. Predictors: (Constant), WB_dummy, Interest, Tax_Rev, FDI

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance
1	(Constant)	-.116	.182		-.637	.531	
	Tax_Rev	.031	.009	.658	3.443	.002	.556
	FDI	-.006	.012	-.102	-.497	.624	.484
	Interest	-.061	.041	-.250	-1.496	.149	.726
	WB_dummy	.028	.049	.092	.581	.567	.812

Coefficients[a]

Model		Collinearity Statistics VIF
1	(Constant)	
	Tax_Rev	1.798
	FDI	2.065
	Interest	1.377
	WB_dummy	1.231

a. Dependent Variable: FSI

Coefficient Correlations[a]

Model			WB_dummy	Interest	Tax_Rev	FDI
1	Correlations	WB_dummy	1.000	.049	-.006	-.340
		Interest	.049	1.000	.465	-.467
		Tax_Rev	-.006	.465	1.000	-.601
		FDI	-.340	-.467	-.601	1.000
	Covariances	WB_dummy	.002	9.839E-5	-2.537E-6	.000
		Interest	9.839E-5	.002	.000	.000
		Tax_Rev	-2.537E-6	.000	8.307E-5	-6.311E-5
		FDI	.000	.000	-6.311E-5	.000

a. Dependent Variable: FSI

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Tax_Rev	FDI	Interest
1	1	4.512	1.000	.00	.00	.00	.01
	2	.265	4.125	.00	.00	.00	.09
	3	.130	5.893	.01	.02	.02	.58
	4	.087	7.202	.03	.01	.66	.00
	5	.006	26.867	.96	.97	.32	.32

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions WB_dummy
1	1	.01
	2	.74
	3	.12
	4	.13
	5	.00

a. Dependent Variable: FSI

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.23737621	.64516795	.43381915	.110861781	27
Residual	-.166237026	.175033882	.000000000	.099637874	27
Std. Predicted Value	-1.772	1.906	.000	1.000	27
Std. Residual	-1.535	1.616	.000	.920	27

a. Dependent Variable: FSI