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COMPARATIVE ANALYSIS OF FISCAL POLICY IMPACT ON THE UKRAINE AND CROATIA SUSTAINABLE DEVELOPMENT

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Abstract

The paper presents a comparative analysis of fiscal policy impacts on sustainable development in Ukraine and Croatia. It introduces an integrated tax index

combining economic, social, and environmental indicators to assess fiscal effectiveness. Using statistical data from 2017–2024 and forecasts for 2025, regression and index analysis methods to evaluate the dynamics of tax revenues, GDP, and tax burden has been applied. The findings reveal significant volatility in Ukraine's fiscal indicators due to the war, while Croatia demonstrates gradual recovery and stability aligned with EU standards. The developed index enables cross-country comparison and identifies priority areas for policy reform. Results highlight that Croatia's experience offers practical insights for improving Ukraine's fiscal sustainability during post-war recovery.

Keywords: comparative analysis, fiscal policy, sustainable development, tax system, Ukraine, Croatia

1. INTRODUCTION

Despite the importance of aligning fiscal policy with sustainable development, there is a notable scientific gap in the literature concerning cross-country analyses of this relationship. Most existing studies examine the effects of tax and fiscal policy changes within single-country contexts, focusing on general economic indicators while overlooking the broader sustainable development perspective. In particular, comparative research that integrates economic, social, and environmental dimensions of fiscal policy across countries remains scarce. No study to date has systematically compared Ukraine and Croatia in terms of how their fiscal policies contribute to sustainable development, leaving policymakers without evidence-based benchmarks for international learning. This lack of comparative analysis represents a significant gap, as insights drawn from one country's experience could inform better policy in the other. Recognizing this shortcoming in the literature, a detailed comparative investigation of Ukraine and Croatia's fiscal strategies vis-à-vis sustainable development is highly warranted.

The present research is motivated by the observation that Ukraine and Croatia share comparable post-transition development aspirations yet differ markedly in institutional and integration status. Both countries emerged from socialist systems and have been working to modernize their economies, but Croatia's successful accession to the EU in 2013 has involved harmonizing its fiscal policies with EU standards, resulting in extensive tax reforms and greater fiscal stability. Ukraine, meanwhile, is on the path toward EU candidacy and is rebuilding its economy in the wake of conflict, which necessitates significant fiscal adjustments and reforms. These differences create an opportunity for policy learning: Croatia's experience in aligning fiscal policy with EU requirements and pursuing sustainable development provides a valuable reference point for Ukraine. For example, Croatia in recent years has emphasized fiscal stability – reducing public debt and strengthening tax administration in line with EU norms (Visković et al., 2021) – while Ukraine's fiscal policy has had to prioritize defense and social support expenditures due to the war, alongside planning post-war recovery measures. By comparing these two national contexts, the study aims to leverage

Croatia's lessons to inform Ukraine's fiscal policy reforms. In sum, the motivation for this research lies in helping Ukraine capitalize on Croatia's experience, identifying which fiscal policy approaches have been effective in promoting sustainable development under EU frameworks and which strategies could be adapted to Ukraine's ongoing transformation.

Thus, a comparative analysis of Ukraine's and Croatia's fiscal policies reveals different approaches to reform and development. Croatia is focused on stability through EU integration, while Ukraine concentrates on adapting its fiscal policy to the modern challenges of war and post-war recovery.

This article aims to develop and implement an integrated tax index that will comprehensively assess the effectiveness of the fiscal policies of Ukraine and Croatia in the context of their contribution to sustainable development. This index will serve as a tool for systematically analysing the impact of tax reforms on economic growth, social justice, and environmental sustainability, which is particularly relevant for countries with transitional economies like Ukraine and those adapting their policies to EU requirements, like Croatia.

2. LITERATURE REVIEW

Fiscal policy is a critical element of the national economy, influencing its stability, development, and social justice. As a critical component of fiscal policy, tax mechanisms provide the necessary revenues for the state and shape the country's investment climate (Shevchuk and Martynenko, 2020). This is equally relevant for Ukraine and Croatia, where tax policy is central to achieving economic and social goals. In the face of modern economic and political challenges, such as global financial instability, climate change, technological innovations, and migration crises, fiscal policy effectiveness and adequacy become crucial for transitional economies and those already integrated into international markets (Morina and Peci, 2017).

As a member of the European Union, Croatia's adherence to EU-wide tax regulation standards and financial stability are particularly important, influencing the harmonization of its tax system with other EU countries. With its transitional economy, Ukraine faces challenges in improving its tax system to ensure stable economic development and integration into both the EU and global economies (Böcker and Finger, 2016).

The variability of the global economic environment requires tax systems to be flexible and adaptable, capable of effectively responding to economic shocks and ensuring the financial stability of a country. As an indicator of the effectiveness of tax policy, the tax index plays a vital role in evaluating and comparing the tax systems of different countries, particularly Ukraine and Croatia (Böcker and Finger, 2016). It helps analyze how changes in tax legislation impact economic growth, income distribution, and investment attractiveness. With its more

developed economy, Croatia focuses on adhering to EU standards, while Ukraine needs to reform its tax system to achieve sustainable development.

Despite significant attention to tax system reforms in both countries, studies focusing on analysing the impact of the tax index on the sustainable development of fiscal policy still need to be represented. This lack of attention creates an informational gap, complicating the decision-making process regarding tax reforms in Ukraine and Croatia. Most existing research concentrates on the general effects of tax changes on the economy without a deep analysis of their impact on sustainable development, which is crucial for ensuring long-term stability and growth (Bezdushna et al., 2023).

Thus, the academic interest in a detailed study of the impact of the tax index on the sustainable development (Yuan, 2024) of fiscal policy in Ukraine and Croatia is highly relevant. Such research aims not only to identify existing problems and their causes but also to develop practical recommendations for optimizing tax policy to meet the demands of the modern economy and societal challenges in both countries.

The analysis of recent fiscal policy and sustainable development research in Ukraine and Croatia shows that both countries face different challenges but share common aspects in reforming their fiscal systems. In Ukraine, researchers such as Butska (2013) and Shevchuk (2013) focus on assessing the effectiveness of tax changes and their impact on economic growth. Their studies emphasize the importance of tax administration and the fight against tax evasion to ensure the country's stable development. These scholars point to the need for a comprehensive approach that considers quantitative indicators and the social and environmental consequences of tax reforms (Bustos-Contell et al., 2020).

As a member of the European Union, Croatia focuses on harmonizing its tax policy with European standards. Recent studies show that Croatia's fiscal policy is gradually adapting to EU market conditions, contributing to economic stability and a reduction in public debt. Significant works, such as the study by Monaienko et al., 2024, emphasize the need for structural reforms to improve the efficiency of public expenditures and optimize the social sector, including pension costs and healthcare.

A comparison of the fiscal policies of both countries shows that in Ukraine, defence and social support expenditures are increasing due to the war (Zhuk et al., 2023) and after the world pandemic and quarantine (Sokil et al., 2022). At the same time, Croatia focuses on debt reduction and enhancing investment attractiveness. The World Bank and the International Monetary Fund note that the rise in social sector spending in Ukraine during the post-war period will require significant efforts in tax administration and structural reforms (European Business Association, 2023, December 14; European Business Association, 2023).

Research on Croatia's fiscal policy highlights the importance of ensuring sustainable economic growth through strengthened tax administration and fiscal responsibility. In recent years, Croatia has implemented a series of reforms to

reduce the budget deficit and improve the efficiency of public expenditures, helping the country meet the criteria of the EU Stability and Growth Pact (Miškufová et al., 2020).

Fiscal sustainability refers to a government's ability to maintain its current spending, tax, and other policies in the long term without threatening solvency or defaulting on liabilities (Rebić & Arčabić, 2023). It is a fundamental prerequisite for macroeconomic stability, growth, and social welfare provision.

In the literature, fiscal sustainability can be broadly categorized into several types:

1. Short-term (operational) sustainability. This refers to the ability to cover current expenditures with current revenues, avoiding persistent primary deficits that could lead to liquidity crises. For instance, Rebić & Arčabić (2023) analyzed how Croatia's fiscal policy maintained short-term sustainability during EU accession despite high public debt.
2. Medium-term sustainability. This involves ensuring that fiscal policy settings (e.g. tax rates, social spending) remain consistent with economic growth paths without creating financing gaps in the near future. Brlečić Valčić & Samodol (2018) emphasize the importance of aligning fiscal and monetary measures to support growth and maintain balanced budget paths in the medium term.
3. Long-term (intergenerational) sustainability. This type considers whether today's fiscal policies impose undue burdens on future generations, particularly with regard to pension liabilities, debt servicing, and environmental costs. Studies such as Cindori & Kuzelj (2018) highlight the social justice dimension, where crisis taxes, while fiscally necessary, may undermine intergenerational equity if poorly designed.
4. Structural sustainability. Beyond numerical balances, structural sustainability examines whether fiscal frameworks and institutions can withstand economic shocks and demographic changes. Visković et al. (2021) argue that effective fiscal decentralization and governance quality are crucial for structural sustainability, as weak institutions undermine resilience even if short-term balances appear sustainable.

Moreover, the literature distinguishes between:

- Weak sustainability, where debt-to-GDP ratios stabilize at high levels, risking future fiscal stress;
- Strong sustainability, where fiscal policies ensure debt ratios are declining or remain at low, manageable levels;
- Unstable fiscal paths, where primary balances do not adjust sufficiently to rising debt, leading to solvency risks (Rebić & Arčabić, 2023).

This typology underpins the rationale for integrated fiscal assessments. Traditional analyses often focus narrowly on debt and deficit ratios, but sustainable

development requires evaluating economic, social, and environmental dimensions simultaneously. Thus, the integrated tax index developed in this study extends the fiscal sustainability discussion from mere solvency analysis to a broader developmental perspective, combining insights from macro-fiscal stability, social equity (Cindori & Kuzelj, 2018), and institutional capacity (Visković et al., 2021).

Fiscal policy is a critical tool shaping economic growth, social stability, and environmental sustainability in every country. In recent years, the role of fiscal policy has gained particular importance for Croatia due to its accession to the European Union and Eurozone, which significantly changed its monetary and fiscal sovereignty (Rebić & Arčabić, 2023). For Ukraine, effective fiscal policy has become even more vital amid wartime shocks, economic recovery needs, and its EU integration path.

Previous studies in *Economic Thought and Practice* have examined various aspects of fiscal policy in Croatia, including its sustainability under EU constraints (Rebić & Arčabić, 2023), the social justice dimensions of taxation such as crisis taxes (Cindori & Kuzelj, 2018), conceptual models for integrating fiscal and monetary measures for economic growth (Brlečić Valčić & Samodol, 2018), and the impact of fiscal decentralization on government quality in Central and Eastern European countries (Visković et al., 2021). However, none of these studies conducted a comparative analysis between Croatia and another country, nor did they integrate a composite index that combines economic, social, and environmental indicators to systematically assess fiscal policy effectiveness for sustainable development.

This paper addresses that gap by comparing Ukraine and Croatia using an integrated tax index, which aggregates the three dimensions of sustainable development into a single metric. This approach builds upon recent Croatian research on fiscal sustainability (Rebić & Arčabić, 2023), expanding it beyond macroeconomic balance to include broader sustainability indicators. Furthermore, while Cindori & Kuzelj (2018) analyzed the fairness and social implications of crisis taxation within Croatia, our study extends the discussion to cross-country comparisons, highlighting how taxation models can either enhance or undermine resilience in countries with similar development pathways. Additionally, while Brlečić Valčić & Samodol (2018) proposed conceptual models linking fiscal policy to growth, our integrated tax index operationalizes this concept by providing measurable outcomes for each country. Finally, by acknowledging the role of fiscal decentralization and governance quality in development outcomes (Visković et al., 2021), our research implies that tax policy effectiveness is intertwined with institutional quality, an area for further exploration.

Therefore, the main contribution of this paper lies in filling the literature gap by (1) conducting the first structured comparison of fiscal policies between Ukraine and Croatia, (2) introducing a holistic integrated tax index as a tool for evaluating fiscal policy sustainability, and (3) providing actionable insights for Ukraine to adopt EU-aligned fiscal practices, drawing from Croatia's experience, in its journey towards economic recovery and EU accession.

3. METHODS

To develop an integrated tax index that reflects the impact of fiscal policy on sustainable development in Ukraine and Croatia, a methodology based on a comprehensive analysis of the economic indicators from both countries and the integration of various indices is used. The research is conducted in several stages: data collection, analysis, index formation, and effectiveness validation.

1. Data collection and analysis. The first stage involves collecting statistical data for Ukraine and Croatia on vital economic indicators, such as GDP and budget revenues, in the form of tax collections (corporate income tax, VAT, personal income tax, social contributions, environmental taxes, rental fees, and natural resource use (Manning, 2024)). For Croatia, data will also include tax indicators specific to EU countries. This data is analyzed to identify trends and correlations between fiscal policy indicators and sustainable development in both countries (State Tax Service of Ukraine, 2024).
2. Formulation of the integrated index. The second stage involves creating the integrated tax index based on the collected data using mathematical methods, such as regression analysis and correlation calculations. The key economic indicators of Ukraine and Croatia are combined into a single index, allowing for the evaluation of the overall impact of fiscal policy on sustainable development and economic growth in both countries. Comparing these countries will help identify the strengths and weaknesses of each fiscal system (Zhang, 2024; Holovai and Bei, 2024; Semenyshena et al., 2019).
3. Effectiveness verification of the integrated index. The final stage includes verifying and validating the developed index by comparing its results with fundamental economic changes in Ukraine and Croatia (Walasik, 2023). This involves testing the index's ability to predict and reflect the impact of fiscal policy on economic stability, social justice, and environmental sustainability. Additionally, a comparative analysis between the two countries will be conducted to determine the overall effectiveness of tax policy in the context of their sustainable development.

4. RESULTS

4.1. Data collection and analysis

Sustainable development, a fundamental principle of modern economic strategies, is based on three main pillars: economic stability, social responsibility, and environmental security. This triadic concept is equally relevant for both Ukraine and Croatia. For both countries, sustainable development is only possible when a balance is achieved between economic interests, the social well-being of citizens, and environmental preservation. The fiscal policy of each of these states,

which includes tax collection mechanisms, plays a crucial role in achieving this balance.

The tax systems in Ukraine and Croatia have a direct impact on sustainable development. Through tax instruments, governments can stimulate or regulate economic activity, promote social justice, and implement environmental protection measures. For instance, tax incentives for businesses that adopt green technologies can help reduce pollution levels and enhance environmental security in both countries. Additionally, socially oriented tax measures, such as reduced VAT rates on essential goods in Ukraine or special benefits in Croatia, contribute to improving the living standards of low-income populations.

The effective use of fiscal policy in the context of sustainable development requires governments to address current economic or social problems reactively and take a strategic approach to shaping tax mechanisms (Dashoor and Abdullah, 2023). The Ukrainian government is focusing on overcoming the consequences of the war and ensuring social support. At the same time, Croatia is more focused on ensuring economic stability through EU integration and reforming social and environmental programs [Ukrinform, 2024; Miškufová et al., 2020; Morina and Peci, 2017).

Economic resilience in Ukraine and Croatia is assessed by analyzing the profitability of businesses and tax revenues, such as corporate income tax and VAT (Zolkover, 2024). These taxes form the foundation of the tax systems in both countries and play a key role in ensuring financial stability. Analyzing these indicators allows for assessing how effectively fiscal policy fosters economic growth in the face of internal and external challenges (Zbarsky et al., 2020).

The social component of fiscal policy is evaluated through indicators such as personal income tax and social security contributions. For Ukraine, this is particularly relevant during the war, as the need for funding social programs for internally displaced persons and veterans increases (Sokil et al., 2023; Alamarat et al., 2024). In Croatia, these taxes also help ensure social justice, especially in the context of harmonization with European standards.

Instruments such as rental fees and environmental taxes ensure environmental security (Petruha and Paliiuchuk, 2017). Ukraine and Croatia use these levies to encourage the conservation of natural resources and minimize the negative impact of industrial activities on the environment. In this context, introducing green technologies and developing renewable energy sources are especially important.

Aggregated data collected for Ukraine and Croatia will allow for a detailed analysis of fiscal policy's effectiveness in sustainable development. This data will include statistics on tax revenues, environmental and social indicators, and macroeconomic forecasts for both countries, enabling comparisons based on integrated indices.

Table 1 Analysis of tax revenues and tax burden in Ukraine in the period 2017-2024

Indicators	2017	2018	2019	2020	2021	2022	2023	2024
Taxes and fees of economic direction:								
Enterprise income tax, EUR million	2230,40	3014,38	3575,50	3530,21	4572,94	3444,67	3635,92	3366,83*
Value added tax, EUR million	2115,01	2462,07	2969,28	4108,04	4821,26	6296,29	5425,66	2665,01*
Social taxes and fees:								
Tax and levy on the income of individuals, EUR million	2501,11	6680,80	9197,28	9584,51	10825,93	12380,00	12546,59	2827,98*
Social contributio n, EUR million	6026,84	7094,74	9131,22	9560,94	10802,82	12514,73	12084,68	4935,10*
Environmental taxes and fees:								
Rent and fees for the use of other natural resources, EUR million	1145,76	1238,87	1377,58	1530,44	2338,88	2384,10	1417,01	476,23*
Ecological tax, EUR million	85,27	86,48	94,16	107,41	121,20	97,77	92,72	50,22*
Total tax revenues, EUR million	14104,39	20577,35	26345,01	28421,55	33483,02	37117,57	35202,58	30121,14*
Real GDP, EUR million	81520	95937	122729	124016	135054	97719	139486	143949**
Tax burden, %	17%	21%	21%	23%	25%	38%	25%	20%

* data as of July 1, 2024;

**taking into account the forecast of Ukraine's GDP growth by 3.2% according to the conclusions of the International Monetary Fund (IMF) and the World Bank (Ukrinform, 2024)

Source: State Tax Service of Ukraine. Income from taxes and fees, 2024 (State Tax Service of Ukraine, 2024; Eurostat, 2024)

The data presented in Table 1 allow for an evaluation of the dynamics of tax revenues from various areas of Ukraine's fiscal policy over the period from 2017 to 2024. A significant increase in tax revenues from corporate income tax and value-added tax was recorded up to 2021, indicating a rise in business activity and improved business conditions. However, a sharp decline is observed in 2022, likely due to economic challenges caused by external factors, including the war.

Taxes in the social sector, such as personal income tax and the unified social contribution, showed stable growth until 2022. However, a significant decrease is observed in 2024, which may indicate a deterioration in employment levels and household incomes. Environmental taxes also showed growth up to 2021, followed by a decline, which could be linked to the economic downturn and reduced production activities.

Table 2 Analysis of tax revenues and tax burden in Croatia in the period 2017-2024

Indicators	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Taxes and fees of economic direction:								
Enterprise income tax, EUR million	1089,60	1124,04	1239,68	1223,72	1037,22	1534,55	2332,18	1259,33*
Value added tax, EUR million	6382,93	6958,39	7408,71	6268,93	7592,94	8792,75	10268,63	6601,5*
Social taxes and fees:								
Tax and levy on the income of individuals, EUR million	272,86	286,69	29,32	1,55	1,25	1,67	1,22	0*
Social contribution, EUR million	2837,88	3074,60	3227,72	3021,11	3356,42	3804,10	4384,08	2374,89*
Environmental taxes and fees:								
Rent and fees for the use of other natural resources, EUR million	111,23	697,98	48,47	29,73	43,73	74,75	63,31	211,54*
Ecological tax, EUR million	155,46	215,67	224,70	269,31	271,90	262,67	400,08	228,51*
Total tax revenues, EUR million	10849,95	12357,37	12178,58	10814,35	12303,46	14470,49	17449,50	21351,54*
Real GDP, EUR million	48896,70	50355,50	52089,20	47650,90	53865,20	57650,30	59415,00	61553,94**
Tax burden, %	22%	25%	23%	23%	23%	25%	29%	35%

*data as of July 1, 2024;

**taking into account the forecast of GDP growth of Croatia by 3.6% according to the conclusions of the European Commission (European Commission, 2024).

Source: Ministry of Finance of the Republic of Croatia. Budget, 2024 (Ministry of Finance of the Republic of Croatia, 2024; Eurostat, 2024).

The table shows tax revenue dynamics in Croatia from 2017 to 2024. There was steady growth until 2022, indicating improved economic conditions. In 2024, the tax burden jumped to 35%, likely due to increased government spending on social and infrastructure projects. Real GDP growth in 2024 signals a gradual economic recovery.

In Ukraine, corporate income tax (18%) and VAT grew until 2021 but declined from 2022 due to the war, reduced business activity, and inflation. In Croatia, corporate income tax was reduced to 10% for small businesses, boosting revenues until 2023–2024, when a slowdown occurred. VAT remained stable until 2022, then declined due to lower consumer demand.

In the social sector, Ukraine's personal income tax and social contributions grew until 2022 but dropped in 2024 due to unemployment from the war. Croatia's social contributions grew steadily, and personal income tax was abolished 2024 to increase wages, with municipalities setting local tax rates.

Ukraine's tax revenues fluctuated due to the war, while Croatia maintained stability through support for small businesses, social programs, and environmental policies.

Tax burden (Zhyvko and Rodchenko, 2020) is a metric that measures the ratio of taxes and fees collected by the state to the gross domestic product (GDP) of a country. This indicator is expressed as a percentage and helps to understand what portion of the national economy is given in taxes. The formula for its calculation typically looks like this:

$$\mathrm{TB} = \frac{\mathrm{TRA}}{\mathrm{RGDP}} \tag{1}$$

where TRA is the amount of tax revenues, EUR; RGDP - real gross domestic product, EUR.

In Ukraine, the tax burden fluctuated significantly. It was 22% in 2017, rising sharply to 38% in 2022 due to the war and financing military and social needs, impacting businesses and economic activity. By 2023, it dropped to 25%, signalling potential stabilization, and further to 20% in 2024.

In Croatia, the tax burden showed steadier growth, reaching 29% in 2023 due to tax reforms and environmental taxes, then jumping to 35% in 2024 to support growth and social initiatives.

In 2024, both countries reduced their tax burdens, indicating efforts to boost economic growth and ease pressure on citizens and businesses.

4.2. Formation of an integral index of the fiscal policy of sustainable development

For the next stage of our research, we will use the index method of data analysis. The index method is a quantitative approach to aggregating data into a single indicator or index. This method is used to combine data of different types (economic, social, environmental, and other indicators) into one measure, making it easier to analyze and compare them (Pohorelova and Tarasova, 2021).

An index calculated by comparing the current values of an indicator with its values from previous periods is called a dynamic or growth index. This method

allows for assessing the relative changes of an indicator over time. The formula for calculating such an index is as follows:

$$I = \frac{X_t}{X_{(t-1)}} \quad (2)$$

where: Xt — the value of the indicator in the current period; $X_{(t-1)}$ − the value of the indicator in the previous period.

This approach is used to determine an indicator's growth or decline rate between two points in time. The result is a coefficient that shows the proportion in which the indicator's value has changed. If the index is greater than 1, it indicates growth; if it is less than 1, it indicates a decline; if it equals 1, it indicates stability relative to the previous period.

One of the most common methods for calculating an integral index (Zhang, 2024) is using the root mean square (RMS) formula. The RMS formula accounts for differences between various indicators, increasing the weight of larger deviations. This is especially useful when some indicators may have a greater impact on the overall result. Such an integral index helps identify key trends and determine the main areas for improving fiscal policy, ensuring more effective and balanced management in the field of sustainable development.

The formula for the root mean square (RMS) used to calculate the index is as follows:

$$\text{Index RMS} = \sqrt{\frac{1}{n}\sum_{i=1}^{n} x_i^2} \quad (3)$$

where: n — the number of indicators, x_i — the value of each individual indicator.

The advantages of the index method lie in its ability to objectively assess complex multidimensional phenomena by converting various data into a unified format, which simplifies comparison and analysis. This is crucial for evaluating fiscal policy in the context of sustainable development, where economic, social, and environmental aspects must be considered.

The integrated tax index in this study combines economic, social, and environmental indicators to evaluate fiscal policy effectiveness for sustainable development. Each of the three blocks includes two normalized indicators:

- Economic: real GDP index and tax burden (% of GDP);
- Social: social expenditure per capita and poverty rate (reverse scaled);
- Environmental: environmental protection expenditures (% of GDP) and CO_2 emissions per GDP unit (reverse scaled).

All indicators were normalized using min-max scaling to ensure comparability.

The index applies equal weights:

- Each block contributes equally to the final index.
- Within each block, indicators are also equally weighted.

The index formula is:

$$\text{Integrated Index} = (\text{Economic} + \text{Social} + \text{Environmental Block Scores}) / 3 \quad (4)$$

Equal weighting was chosen for simplicity and balance among development pillars. Future research could refine this by applying expert-based or policy-priority weighting to improve relevance for national planning.

The visualization of data from Table 1 and the resulting indices of key indicators is presented in Figure 1.

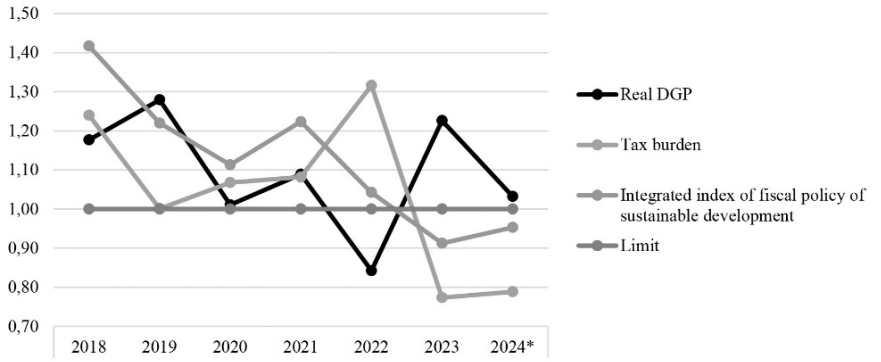

Figure 1 Dynamics of indices of the fiscal policy of Ukraine for the period 2017-2024

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

Figure 1 highlights significant changes in Ukraine's fiscal policy indices, particularly during and after Russia's 2022 invasion.

The real GDP index shows sharp fluctuations, peaking at 1.43 in 2023, possibly due to economic adaptations. However, the tax burden dropped to 0.66 due to reduced economic activity and lost revenues from the war.

Ukraine's sustainable fiscal policy index fluctuated between 2018 and 2024, starting high but sharply declining in 2019. The index fell further in 2022 due to the war but showed some recovery by 2024, though fiscal pressures remain.

The visualization of data from Table 2 and the resulting indices of critical indicators is presented in Figure 2.

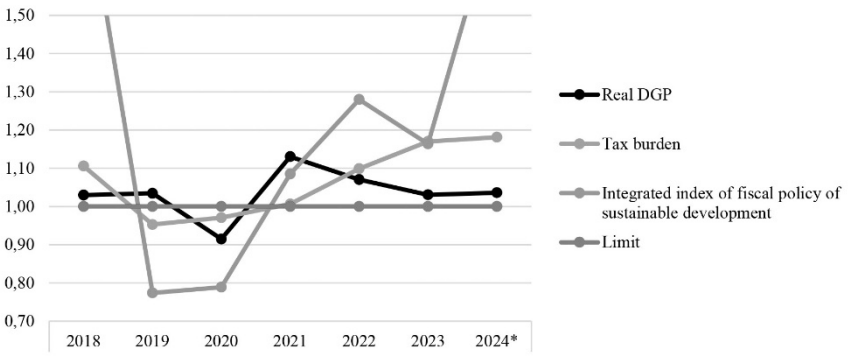

Figure 2 Dynamics of Croatian fiscal policy indices for the period 2017-2024

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

Figure 2 highlights vital fiscal trends in Croatia from 2018 to 2024. GDP fluctuated, dropping in 2020 due to COVID-19, then gradually recovering through 2023. Growth in 2024 may slow due to ongoing challenges. The tax burden increased, peaking in 2024, driven by fiscal reforms and the need to meet EU financial stability requirements.

The integral index of sustainable fiscal policy remained stable after 2021, reflecting Croatia's efforts to balance economic, social, and environmental goals. By 2024, a balance between the tax burden and economic development was achieved.

Croatia's economy is stabilizing post-pandemic, but the rising tax burden suggests more work is needed for fiscal sustainability. In comparison, Ukraine faced severe challenges from the 2022 invasion, leading to a GDP decline and lower tax revenues, while Croatia showed a more gradual recovery.

Figure 3 presents the dynamics of Ukraine's real GDP from 2017 to 2024 and the forecast for 2025.

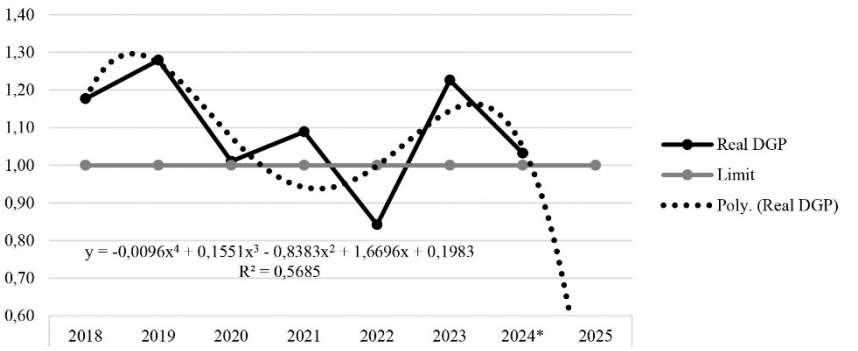

Figure 3 Dynamics and forecast of indices of real GDP of Ukraine (2017-2025)

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

The graph shows Ukraine's real GDP index from 2018 to 2025, with a baseline of 1. Values above 1 indicate growth, and below 1 indicate a decline.

Between 2018 and 2022, significant fluctuations occurred. After a war-related drop to 0.84 in 2022, GDP recovered to 1.23 in 2023, but a decline below 1 is forecasted for 2024, indicating ongoing challenges. The 2025 forecast (1.03) suggests moderate growth, though stability remains fragile.

The polynomial regression (R^2 = 56.85) shows the model only partially explains GDP variations, highlighting the need for further analysis and fiscal policy adjustments to support long-term growth.

Figure 4 presents the dynamics of Croatia's real GDP from 2017 to 2024 and the forecast for 2025.

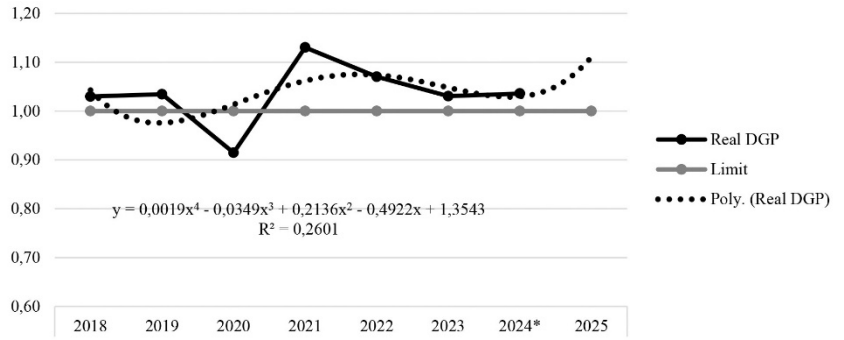

Figure 4 Dynamics and forecast of Croatian real GDP indices (2017-2025)

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

The analysis of Figure 4, showing Croatia's real GDP from 2017 to 2025, reveals fluctuations in economic activity. GDP grew steadily from 2017 to 2021, recovering after the 2020 COVID-19 decline. Growth continued to 1.03 in 2023, but a slowdown is forecasted for 2024, although GDP remains above the baseline, reflecting ongoing recovery efforts through tax reforms.

The integral index of sustainable fiscal policy remained stable after 2021, with a peak tax burden of 35% in 2024 due to reforms. Despite a coefficient of determination of 0.2601, indicating the model explains only 26% of GDP changes, it still offers a general understanding of trends. The 2024 and 2025 forecasts suggest potential GDP growth but with volatility and external risks.

The next stage of the study involves analyzing and forecasting the tax burden index for Ukraine and Croatia for the period 2017–2025, as presented in Figures 5 and 6, respectively.

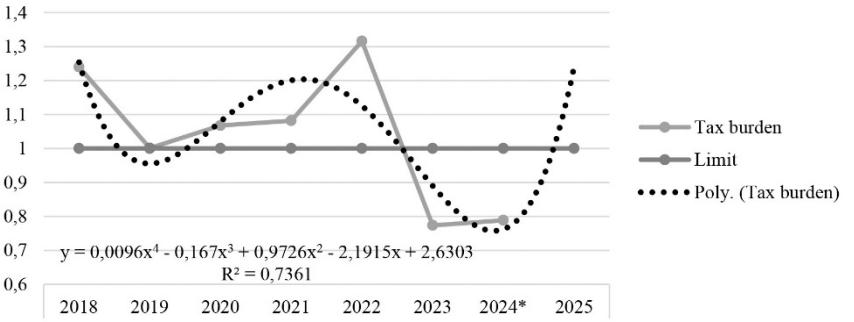

Figure 5 Dynamics and forecast of the tax burden index of Ukraine in 2017-2025

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

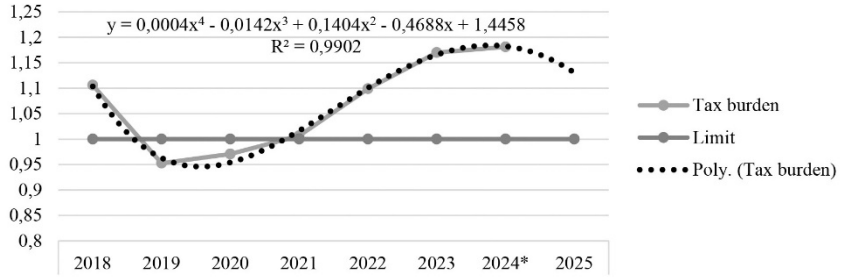

Figure 6 Dynamics and forecast of the Croatian tax burden index in 2017-2025

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

Figures 5 and 6 show the tax burden index dynamics for 2017–2025, with trend lines based on polynomial regression.

In Ukraine, the tax burden fluctuated, dropping to 0.84 in 2022, rising to 1.23 in 2023, and is forecasted to ease to 1.03 in 2024, likely to support economic recovery. The R^2 of 0.7361 shows the model explains 74% of the data.

Croatia's tax burden was more stable, peaking at 1.18 in 2024 due to fiscal reforms, with a decrease forecasted for 2025. The R^2 of 0.9902 suggests high model accuracy.

While Ukraine's tax burden shows more volatility due to crises, Croatia's fiscal policies appear more balanced.

Figure 7 presents the dynamics and forecast of the integral index of sustainable fiscal policy in Ukraine.

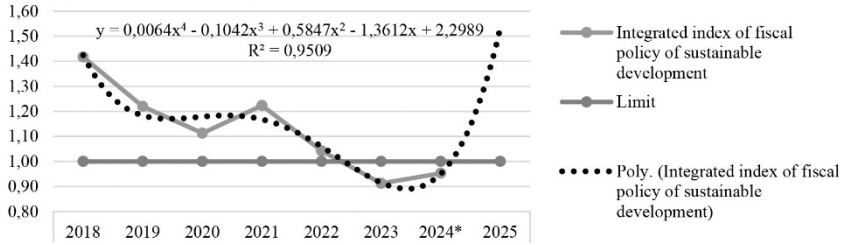

Figure 7 Dynamics and forecast of the integral index of the fiscal policy of sustainable development of Ukraine in 2017-2025

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

On Fig. 8 presents the dynamics and forecast of the integral index of the fiscal policy of sustainable development in Croatia.

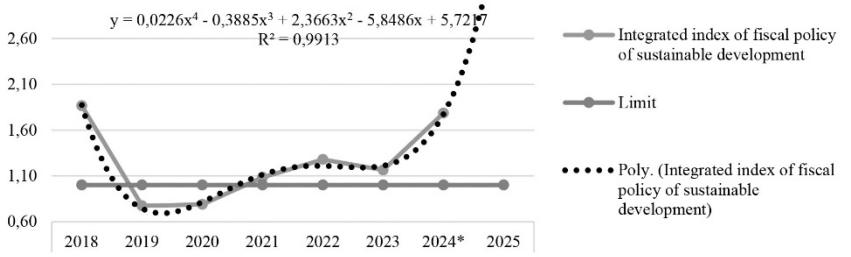

Figure 8 Dynamics and forecast of the integral index of fiscal policy of sustainable development of Croatia in 2017-2025

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

The graph shows that Ukraine's integral index of sustainable fiscal policy has declined since 2018, from 1.42 to its lowest point in 2022, due to the war's economic impact. The 2025 forecast suggests a possible recovery to 1.50, contingent on successful reforms and stabilization.

Croatia's index remained stable, recovering from a decline in 2019–2020. It reached 1.79 in 2024, and a sharp rise to 4.0 is forecasted for 2025, driven by effective reforms and adapting tax policy.

Croatia shows a more stable recovery, while Ukraine faces more significant challenges due to the war. Both countries are projected to grow by 2025, though Ukraine's path will be more complex.

4.3. Checking the efficiency of the integral index

The analyzed integral index of Ukraine's sustainable fiscal policy now requires validating its forecast for 2025. For a more precise assessment, we have divided our indicators into three key components: economic, environmental, and social, each of which is represented in the respective figures 9 and 10, 11 and 12, and 13 and 14.

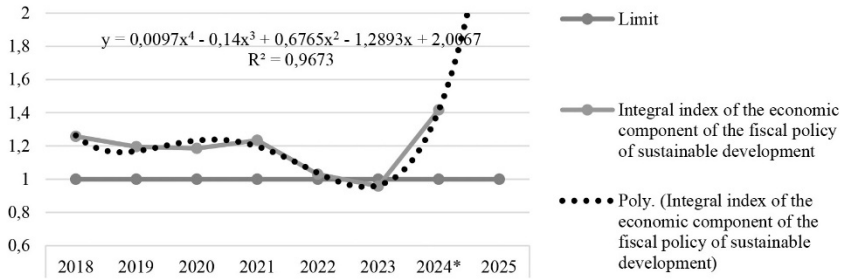

Figure 9 Dynamics and forecast of the integral index of the economic component of Ukraine's sustainable fiscal policy from 2017 to 2025.

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

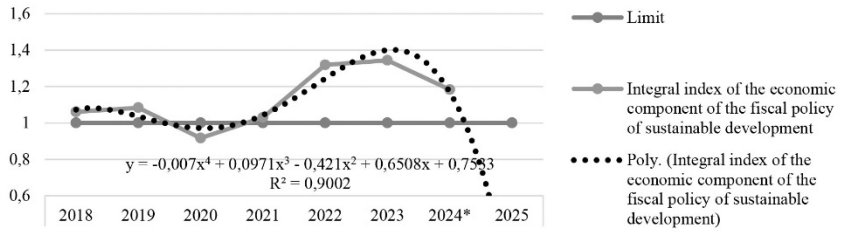

Figure 10 Dynamics and forecast of the integral index of the economic component of the fiscal policy of sustainable development of Croatia in 2017-2025

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

The economic component index of Ukraine's fiscal policy fluctuated from 2017 to 2025. Starting in 2017, the index was at 1.26, indicating a positive dynamic in fiscal policy during that period. However, starting from 2021, a gradual decline was observed, reaching 0.96 in 2024, likely due to the war, significant infrastructure damage, and the economic downturn caused by Russia's full-scale invasion. Recovery of fiscal policy and support from international organizations may improve the index by 2025, as reflected in the forecast.

In contrast, Croatia's fiscal policy index is more stable and upbeat. It dropped to 0.92 in 2020, likely due to the effects of the COVID-19 pandemic and related economic challenges. However, by 2022–2023, it gradually increased to 1.34, driven by economic stabilization after the pandemic and the implementation of fiscal reforms aimed at reducing debt burdens and supporting sustainable development.

Ukraine's fiscal policy in 2022–2024 faced significant impacts due to external and internal economic challenges, particularly the war. On the other hand, Croatia demonstrated a swift recovery after the pandemic-induced decline thanks to reforms and gradual improvements in economic indicators.

The next step is assessing the environmental component of fiscal policy, presented in Figure 11 for Ukraine and Figure 12 for Croatia. This will provide insight into the sustainability of environmental fiscal measures and their alignment with overall development goals in both countries.

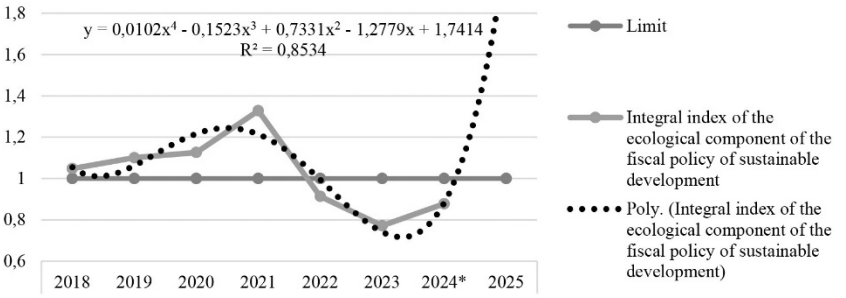

Figure 11 Dynamics and forecast of the integral index of the environmental component of the fiscal policy of sustainable development of Ukraine in 2017-2025

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

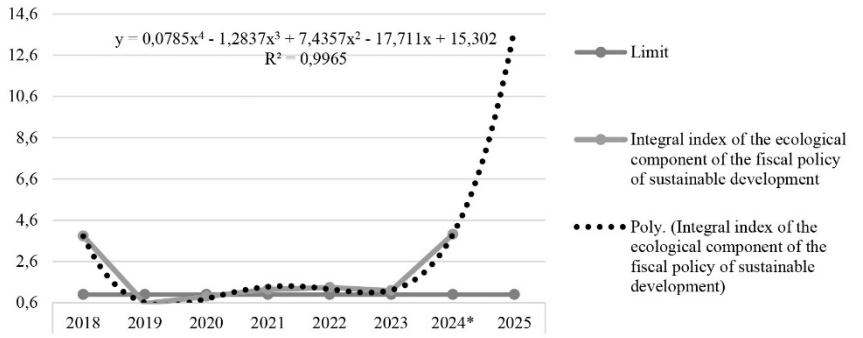

Figure 12 Dynamics and forecast of the integral index of the ecological component of the fiscal policy of sustainable development of Ukraine in 2017-2025

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

The analysis of Ukraine's environmental fiscal index shows fluctuations from 2017 to 2025. The index rose from 1.05 to 1.33 by 2019, reflecting environmental reforms, but declined to 0.77 by 2023 due to war-related economic challenges and reduced environmental focus. A slight recovery to 0.88 is forecasted for 2025.

In Croatia, the index showed more volatility, starting at 3.83 in 2017, dropping to 0.56 in 2018, then improving to 1.34 by 2023 and reaching 3.91 by 2025, reflecting stronger environmental recovery.

Comparing both countries, Croatia shows more variability but stronger focus on environmental policies by 2025, while Ukraine's environmental efforts have declined due to the war and economic struggles (Fig 13, 14).

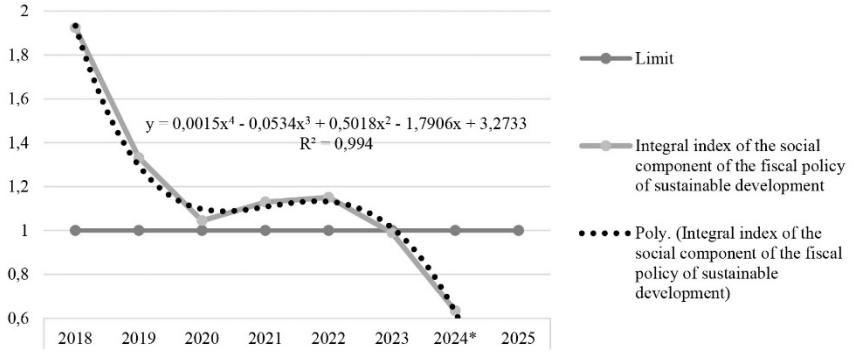

Figure 13 Dynamics and forecast of the integral index of the social component of the fiscal policy of sustainable development of Ukraine in 2017-2025

Source: calculated by the author based on (State Tax Service of Ukraine, 2024)

The integral index of Ukraine's social fiscal policy (Fig.13) shows significant fluctuations, starting at 1.92 in 2017 and dropping to 0.63 by 2024. This decline reflects a reduced focus on social programs due to war, economic crisis, and budget constraints. The model's R^2=0.994 confirms high reliability for forecasting.

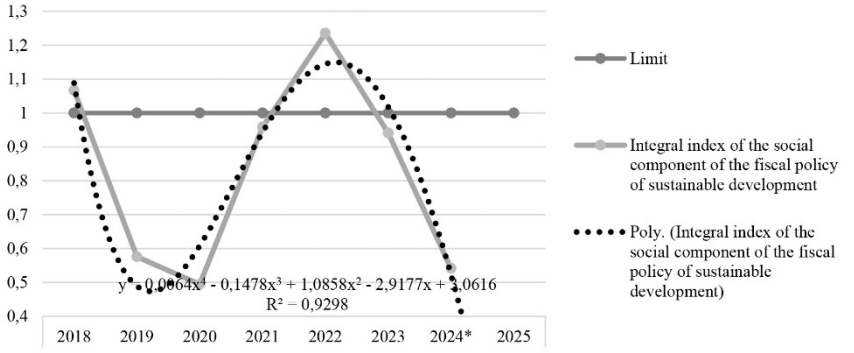

Figure 14 Dynamics and forecast of the integral index of the social component of the fiscal policy of sustainable development of Croatia in 2017-2025

Source: calculated by the author based on (Ministry of Finance of the Republic of Croatia, 2024)

In Croatia, the social index varied more, falling from 1.07 in 2017 to 0.49 in 2019, recovering to 1.24 by 2021, and then dropping again to 0.54 by 2024 (Fig. 14). These shifts are likely linked to the economic impact of COVID-19. The R^2=0.9298 confirms forecast reliability.

Both countries face declining social support leading to 2024, driven by shared challenges like the pandemic and budget pressures. Ukraine's more severe drop indicates more significant social and economic challenges from war. The 2025 forecast can guide both countries in aligning fiscal policies with sustainable development goals.

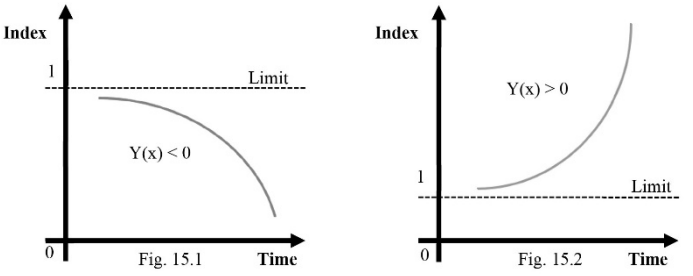

Figure 15 Model of positive (15.1) and negative (15.2) forecasting dynamics of the integral index of fiscal policy for sustainable development

Source: calculated by the author based on

Figure 15 presents two scenarios for fiscal policy development in Ukraine and Croatia to ensure sustainable development:

- In Figure 15.1, the index falls below the baseline, indicating risks such as insufficient funding, poor resource management, or economic instability. For Ukraine, the ongoing war and reconstruction efforts may strain the government's ability to finance critical programs. Croatia could face challenges if it fails to align with EU standards. Addressing these risks requires proactive fiscal adjustments and international cooperation.
- Figure 15.2 shows the index exceeding 1.0, reflecting effective measures that promote economic stability, social integration, and environmental security. This success may result from post-war recovery, reforms, and international support for Ukraine. For Croatia, it reflects successful alignment with EU policies and improvements in social and environmental sectors.

The R^2 coefficient helps evaluate how well the model fits the data, with a high R^2 indicating reliable predictions. This is crucial for making informed policy decisions. A high R^2 in the optimistic scenario supports current reforms, while in the adverse scenario, it highlights the need for corrective actions.

5. DISCUSSION

The research draws critical conclusions from the comparative analysis of Ukraine's and Croatia's fiscal policies and suggests that Ukraine can benefit from Croatia's experience in tax system reform. While both countries are at different economic stages, Croatia's EU integration offers a valuable model for Ukraine.

Fiscal policy is crucial for economic stability and development. Croatia's alignment with EU tax standards has led to economic stability, debt reduction, and investment growth. For Ukraine, facing war and instability, Croatia's experience could be vital for post-war recovery.

Ukraine's challenges include reduced tax revenues, employment issues, and social program pressures. Croatia's approach to easing tax burdens on small businesses could help Ukraine stimulate entrepreneurship and foster sustainable development.

Ukraine needs deep fiscal reforms. Croatia's optimization of public spending and social program reforms offer valuable lessons. The integral tax index developed in this study highlights Ukraine's fiscal instability due to the war, while Croatia shows a more balanced policy.

Following Croatia's model, reducing the tax burden on businesses is crucial for Ukraine's post-war recovery. Additionally, fiscal policy should address environmental initiatives, reviving Ukraine's green programs after the war, drawing from Croatia's experience.

Both countries are forecasted to recover economically by 2025. Ukraine's recovery depends on reforms and international cooperation, while Croatia will continue aligning with EU tax policies.

In conclusion, Croatia's experience can guide Ukraine's fiscal reform, supporting long-term growth, social programs, and environmental efforts, making it a crucial part of Ukraine's post-war recovery.

6. CONCLUSION

This study created and used an integrated tax index to compare how fiscal policies in Ukraine and Croatia support sustainable development. The index combined economic, social, and environmental indicators into one measure, allowing for a clear and structured assessment of fiscal sustainability in these two different countries.

The results showed that Ukraine's tax revenues and GDP changed a lot between 2017 and 2024, mainly because of the war and other external shocks. For example, Ukraine's real GDP dropped to an index of 0.84 in 2022 but improved to 1.23 in 2023, with moderate growth expected at 1.03 in 2025. Its tax burden reached a peak of 38% in 2022 but fell to 20% in 2024, showing government efforts to reduce pressure on the economy and help recovery.

Croatia, on the other hand, showed more stability. Its real GDP index increased gradually to 1.03 in 2023, although a slight slowdown is expected in 2024. Croatia's tax burden grew more steadily, reaching 35% in 2024 due to fiscal reforms and higher social spending under EU requirements. Importantly, Croatia's integrated index of sustainable fiscal policy is predicted to reach 4.0 in 2025, while Ukraine's is expected to be 1.50. This means Croatia has a more balanced and stronger approach to combining economic, social, and environmental goals.

The scenarios in Figure 15 showed two possible paths. The first one, where the index drops below the baseline ($Y(x)<0$), indicates risks such as lack of funds, weak reforms, and economic instability. This is especially dangerous for Ukraine if it delays reconstruction and structural changes. The second scenario, where the index rises above the baseline ($Y(x)>0$), suggests that fiscal policy adjustments are effective and support economic strength, social well-being, and environmental protection. For Ukraine to achieve this positive scenario, it will need to use Croatia's experience in tax reforms, better public spending, and aligning policies with EU standards.

Overall, the study showed that Croatia's approach, aligned with EU standards, helped it achieve more stable and sustainable development, while Ukraine remains vulnerable to external shocks but has room for improvement through focused reforms. The integrated tax index developed in this research is a practical tool for policymakers to check and improve their fiscal policies. It is clear from the findings that Croatia's forecasted index for 2025 is about 2.5 times higher

than Ukraine's, showing Croatia's stronger progress. For Ukraine, future reforms should focus on reducing tax burden fluctuations, improving social programs, and adding environmental considerations into fiscal planning.

Based on the Croatian experience, two specific fiscal instruments could be recommended for Ukraine to enhance its fiscal sustainability and support its development goals. Firstly, Croatia's adoption of a Medium-Term Expenditure Framework (MTEF) during its EU accession process proved to be an effective tool for improving fiscal discipline and planning. The MTEF allowed Croatia to project expenditures over a multi-year horizon, ensuring that budget allocations were consistent with strategic development priorities and realistic revenue forecasts (Rebić & Arčabić, 2023). For Ukraine, implementing a similar MTEF would be beneficial to control public spending, prioritize key sectors such as defense, social protection, and EU-aligned reforms, and enhance overall fiscal predictability during its recovery and integration processes.

Secondly, Croatia introduced a temporary crisis tax to address budget deficits during economic downturns. Although its implementation raised debates on social fairness, it was effective in stabilizing public finances while maintaining critical social programs (Cindori & Kuzelj, 2018). Drawing from this, Ukraine could consider introducing a temporary solidarity tax in times of urgent fiscal need, such as during post-war reconstruction. However, unlike the flat-rate approach used in Croatia, Ukraine should design this tax with progressive brackets targeting high-income groups or luxury consumption, ensuring that revenues are earmarked for reconstruction and social welfare, and that low-income households are protected from additional burdens. Such an approach would enhance revenue mobilization while maintaining social equity, thus supporting Ukraine's fiscal resilience and development objectives in line with European integration standards.

However, this study also has some limitations. It used publicly available data, which in Ukraine's case during wartime might include inaccuracies. The research looked only at two countries, so the findings cannot be fully applied to other economies. The index also used equal weighting for economic, social, and environmental indicators, which may not reflect each country's specific priorities. Finally, forecasts only extended to 2025, so they do not show long-term trends.

Future research should include more countries, both EU members and candidates, to see wider patterns. Adding qualitative policy analysis to the quantitative index would give a deeper understanding of how fiscal reforms are planned and carried out. Adjusting the index weighting to reflect the priorities of each country could also make it more useful for policy decisions. Longer-term forecasts and scenario-based models, especially for countries like Ukraine facing high uncertainty, would help strengthen conclusions and guide better fiscal planning to support sustainable development goals.

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REFERENCES

Alamarat, M., Sokil, O., Podolchak, N., Bilyk, O., & Tsygylyk, N. (2024). Quadratic model for assessing the impact of COVID-19 on the human Resources soft skills. *Revista RIVAR*, *11* (33), 21-39. https://doi.org/10.35588/rivar.v11i33.6221

Bezdushna, Y., Prodanchuk, M., Zhuk, V., & Popko, E. (2023). Rationale of management principles of providing sustainable development of rural territorial communities. *International Journal of Information Technology Project Management*, *14* (1), 1-11. https://doi.org/10.4018/ijitpm.323209

Böcker, T., & Finger, R. (2016). European Pesticide Tax Schemes in Comparison: An analysis of experiences and developments. *Sustainability*, *8* (4), 378. https://doi.org/10.3390/su8040378

Brlečić Valčić, S., & Samodol, A. (2018). Conceptual model for analysis of financial development in the context of proposal of effective measures of monetary and fiscal policy. *Ekonomska misao i praksa*, *27* (2), 377-398. https://hrcak.srce.hr/213279

Bustos-Contell, E., Climent-Serrano, S., & Labatut-Serer, G. (2020). Tax incentives: an effective mechanism to achieve EU harmonization?. *Journal of Business Accounting and Finance Perspectives*, *2* (2), 1. https://doi.org/10.35995/jbafp2020012

Butska, O. Y. (2013). Methodology for assessing tax burden: A comparative analysis. *Ahrosvit*, 24, 25-27. http://nbuv.gov.ua/UJRN/agrosvit_2013_24_6

Cindori, S., & Kuzelj, V. (2018). Social aspect of crisis tax: A fiscal instrument or a deviation of tax system. *Ekonomska misao i praksa*, *27* (2), 479-502. https://hrcak.srce.hr/213296

Dashoor, Z., & Abdullah, A. (2023). The environmental and economic role of green taxes in Denmark for the period 2000-2019. *Al Kut Journal of Economic and Administrative Sciences*, *15* (47), 190-214. https://doi.org/10.29124/kjeas.1547.10

European Business Association (2023). *Tax index 2023*. https://eba.com.ua/wp-content/uploads/2023/12/EBA_Tax_Index_2023-UKR.pdf

European Business Association (2023, December 14). *Businesses complain about constant tax changes and lack of time for adaptation*. https://eba.com.ua/biznes-skarzhytsya-na-postijni-podatkovi-zminy-ta-nestachu-chasu-na-adaptatsiyu/

Eurostat (n. d.). *Euro area government deficit at 3.6% and EU at 3.5% of GDP*. European Commission. https://ec.europa.eu/eurostat/web/products-euro-indicators/w/2-22042024-ap

Eurostat (n. d.). *Main national accounts tax aggregates*. https://ec.europa.eu/eurostat/databrowser/view/GOV_10A_TAXAG/default/table?lang=en

Holovai, N., & Bei, S. (2024). Harmonization of the tax policy of Ukraine in the terms of European integration: challenges, opportunities and prospects. *Empirio*, *1* (2), 76-83. https://doi.org/10.18523/3041-1718.2024.1.2.76-83

Lukáčová, M., Korečko, J., Jenčová, S., & Jusková, M. (2020). Analysis of selected indicators of tax competition and tax harmonization in the EU. *Entrepreneurship and Sustainability*, *8* (1), 123-137. https://doi.org/10.9770/jesi.2020.8.1(8)

Manning, C. (2024). *The US tax state and the limited social contract. Taxing democracy*. Cambridge University Press. https://doi.org/10.46692/9781529215588.003

Ministry of Finance of the Republic of Croatia (2024). *Budget*. https://mfin.gov.hr/proracun-86/86

Monaienko, A., Atamanchuk, N., Soldatenko, O., Vlasenko, V., & Striiashko, G. (2024). Legal foundations of stimulating fiscal policy in the EU. *Social & Legal Studios*, *7* (1), 56-64. https://doi.org/10.32518/sals1.2024.65

Morina, F., & Peci, B. (2017). Harmonization of corporate income tax (CIT) in the EU – achievements and challenges. *Acta Universitatis Danubius. Œconomica*, *13* (6), 323-333.

Petruha, N. M., & Paliiuchuk, T. V. (2017). Conceptual foundations of fiscal decentralization in EU countries. *Accounting and Finance*, *2* (76), 99-106. https://afj.org.ua/pdf/478-konceptualni-zasadi-fiskalnoi-decentralizacii-v-krainah-chlenah-es.pdf

Pohorelova, T. V., & Tarasova, K. I. (2021). The index method in modern research on Ukraine's money circulation. *Visnyk of Socio-Economic Research*, *1* (76), 100-112. https://doi.org/10.33987/vsed.1(76).2021.100-112

Rebić, P., & Arčabić, V. (2023). Sustainability and character of fiscal policy in the Republic of Croatia. *Ekonomska misao i praksa*, *32* (2), 455-–472. https://doi.org/10.17818/EMIP/2023/2.8

Semenyshena N., Khorunzhak N., Adamyk O., Sadovska I., Nahirska K., & Zhuk V. (2019). The methodology for calculating baseline indicators for budgeting expenditures of budgetary institutions: the case of Ukraine. *Intellectual Economics*, *13* (1). https://doi.org/10.13165/IE-19-13-1-04

Shevchuk, O., & Martynenko, V. (2020). An integrated approach to assessing the level of fiscal policy decentralization. *Investment Management and Financial Innovations*, 17, 49-63. https://doi.org/10.21511/imfi.17(1).2020.05

Shevchuk, O. A. (2013). Evaluation of tax control efficiency. *Economy and State*, 1, 28-31

Sokil, O., Kucherkova, S., Kostyakova, A., Podolchak, N., Sokil, Y., & Shkvyria, N. (2022). The Context of "Globalization Versus Localization" After the World Pandemic and Quarantine. *Studies in Computational Intelligence*, 77-85. https://doi.org/10.1007/978-3-031-05258-3_8

Sokil, O., Podolchak, N., Vesolovska, M., & Trachova, D. (2023). Impact Well-Being Indicator on Emotional Intelligence Sustainable Development in Poland and Ukraine. *2022 12th International Conference on Advanced Computer Information Technologies (ACIT)*, 342-346. https://doi.org/10.1109/acit58437.2023.10275413

Tax and fee revenues (n. d.). State Tax Service of Ukraine tax.gov.ua. https://tax.gov.ua/diyalnist-/pokazniki-roboti/nadhodjennya-podatkiv-i-zboriv--obovyaz/nadhodjennya-podatkiv-i-zboriv/

Ukrinform (2024). *IMF predicts Ukraine's economic growth at 3.2% this year*. https://www.ukrinform.ua/rubric-economy/3853081-mvf-prognozue-ekonomicne-zrostanna-ukraini-cogoric-do-32.html

Visković, J., Burnać, P., & Herman, M. (2021). Impact of political and fiscal decentralization on the government quality in Central and Eastern European countries. *Ekonomska misao i praksa*, *30* (1), 285-302. https://doi.org/10.17818/EMIP/2021/1.14

Walasik, A. (2023). The size of tax jurisdiction and tax density. *Annales Universitatis Mariae Curie-Skłodowska Sectio H Oeconomia*, *5 7*(4), 201-215. https://doi.org/10.17951/h.2023.57.4.201-215

Yuan, Q. (2024). Optimization of teaching design for “Chinese tax system” based on the integration of law and business background. *Journal of Education and Educational Research*, *7* (2), 1-4. https://doi.org/10.54097/kktk2a11

Zbarsky, V. K., Trusova, N. V., Sokil, O. H., Pochernina, N. V., & Hrytsaienko, M. I. (2020). Social and economic determinants for the development of resource potential of small forms of agrarian production in Ukraine. *Industrial Engineering & Management Systems*, *19* (1), 133-142. https://doi.org/10.7232/iems.2020.19.1.133

Zhang, G. (2024). Exploring the application of financial indicator prediction models in optimizing tax burden. *Applied Mathematics and Nonlinear Sciences*, *9* (1). https://doi.org/10.2478/amns-2024-1752

Zhuk, V., Pugachov, M., Shpykuliak, O., Bezdushna, Y., & Popko, Y. (2023). Application of accounting for the assessment of war losses for agribusiness enterprises of Ukraine. *Agricultural and Resource Economics International Scientific E-Journal*, *9* (3). https://doi.org/10.51599/are.2023.09.03.09

Zhyvko, Z., & Rodchenko, S. (2020). Tax burden: Essence, measurement methods and level assessment. *Economic Scope*. https://doi.org/10.32782/2224-6282/158-4

Zolkover, A. (2024). Fiscal measures and their consequences: European experience against Ukrainian perspectives. *Deleted Journal*, *74* (3), 146-151. https://doi.org/10.62227/as/74324

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KOMPARATIVNA ANALIZA UTJECAJA FISKALNE POLITIKE NA ODRŽIVI RAZVOJ UKRAJINE I HRVATSKE

Sažetak

Rad predstavlja komparativnu analizu utjecaja fiskalne politike na održivi razvoj u Ukrajini i Hrvatskoj. Uvodi integrirani porezni indeks koji kombinira ekonomske, društvene i pokazatelje okolišne održivosti za procjenu fiskalne učinkovitosti. Koristeći se statističkim podacima iz razdoblja 2017. – 2024. i prognozama za 2025., primjenjuju se metode regresijske i indeksne analize za procjenu dinamike poreznih prihoda, BDP-a i poreznog opterećenja. Nalazi otkrivaju značajnu

volatilnost fiskalnih pokazatelja u Ukrajini zbog rata, dok Hrvatska pokazuje postupan oporavak i stabilnost usklađenu sa standardima EU-a. Razvijeni indeks omogućuje usporedbu među zemljama i identificira prioritetna područja za reformu politike. Rezultati ističu da hrvatsko iskustvo nudi praktične uvide za poboljšanje fiskalne održivosti Ukrajine tijekom poslijeratnog oporavka.

Ključne riječi: komparativna analiza, fiskalna politika, održivi razvoj, porezni sustav, Ukrajina, Hrvatska.

JEL klasifikacija: H20, H30, H50, O23, Q01.