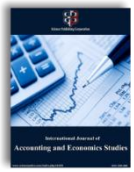
International Journal of Accounting and Economics Studies, 12 (2) (2025) 361-371

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/zf7kfx55
Research paper



Role of Economic Sustainability in Strengthening National Security: Case of Post-Soviet Countries

Andrey Velchev

Faculty of Economics and Social Science, Paisii Hilendarski University of Plovdiv, Plovdiv, Bulgaria
**Corresponding author E-mail: andreyvelchev169@gmail.com*

Received: April 24, 2025, Accepted: May 28, 2025, Published: July 4, 2025

Abstract

This study focused on analysing the relationship between economic resilience and national security in the context of post-Soviet countries and Bulgaria. The research employed a comprehensive strategy, incorporating the examination of economic, demographic, and quantitative factors, alongside a comparative analysis methodology. The study found that the economy plays a key role in national security, protecting against external economic and political threats such as sanctions and trade wars, as well as internal risks related to corruption and inefficiency. The study summarised the effects of the loss of centralised economies and crises on the resilience of the economies of post-Soviet countries, including Ukraine, Kazakhstan, Georgia, Azerbaijan, and Moldova. In contrast, Bulgaria utilised the opportunities of integration into the European Union (EU) to implement reforms aimed at strengthening economic resilience. The study analysed economic sustainability indicators such as gross domestic product per capita, external debt, corruption index, inflation, and unemployment. For example, in 2024 in Bulgaria, the corruption index was 43, the unemployment rate was 5.2%, and the inflation rate was USD 2.2. Furthermore, the contribution of digitalisation and innovative technologies to economic resilience and security was analysed. The study presented data on the e-government development index in Bulgaria and post-Soviet countries, reflecting the level of digitalisation in public administration. Kazakhstan and Ukraine show a strong level of implementation of digital services: in 2024, Ukraine ranked 30th and Kazakhstan ranked 24 among 193 countries, indicating advances in digital transformation. The study proposed strategic measures to enhance economic resilience and national security in the context of digitalisation, including developing digital skills, fighting corruption, protecting against external threats, and supporting high-tech industries.

Keywords: *Demographic Trends; Demographic Challenges; Digital Transformation; Economic Resilience; Institutional Development.*

1. Introduction

The relevance of this study was conditioned by the interest in analysing the economic sustainability of Bulgaria, Ukraine, Kazakhstan, Georgia, Azerbaijan, and Moldova, which, having analogous experience of a planned economy, have chosen different strategies of adaptation to market conditions. These countries have a strategically important geographical position as a bridge between Europe and Asia, which enhances their role in international trade and geopolitical processes. However, limited natural resources (except for oil and gas countries), demographic challenges, and institutional problems hamper their economic stability. In the context of global instability and foreign policy pressures, as well as the need for digital transformation and technological modernisation, ensuring economic sustainability becomes a critical factor of national security. The insufficient study of the effects of various economic strategies on the sustainability of these countries requires in-depth analyses to identify the most effective ways of adaptation and long-term development.

The findings on economic sustainability and national security demonstrate the significance of an integrated approach to the study of this topic. Santagata et al. (2019) showed that the economic vulnerability of post-Soviet countries is largely related to their dependence on the export of raw materials. The researcher pointed out that insufficient diversification of economies increases their vulnerability to external influences, which negatively affects national security. Náplava (2020) emphasised institutional weakness in these states. The researcher found that corruption, opaque governance, and lack of judicial independence hinder the development of sustainable economic systems. Hor et al. (2024) analysed regional integration processes and concluded that the economic sustainability of countries is greatly enhanced through cooperation, but the influence of associations such as the Eurasian Economic Union (EAEU) stays limited due to the lack of trust between member states. Broz et al. (2021) investigated external economic factors. The researcher found that economic pressure from major world powers, such as sanctions, considerably undermines financial stability and forces countries to adapt to new conditions. Bellak and Leibrecht (2021) investigated the role of foreign investment in ensuring economic sustainability. According to Bellak and Leibrecht, in post-Soviet countries, despite the potential for attracting capital, insufficient investor protection and unstable political conditions reduce the effectiveness of this tool. Hallaert (2020) focused on the effects of economic inequality on social stability in Bulgaria. The researchers showed that elevated levels of poverty and income inequality create the basis for mass discontent and protests, which undermine overall security. Cergibozan (2022) investigated energy security and proved that for countries with high dependence on energy exports, it is necessary to develop internal processing industries to increase the added value of products and reduce vulnerability to external market

fluctuations. Lewin (2023) analysed human capital. The researcher found that underfunding of education and healthcare limits the potential for economic growth and reduces the competitiveness of national economies. Ivanov (2020) investigated the demographic factor and its relationship with economic sustainability. The researcher noted that low birth rates and a significant level of emigration from the region create long-term threats to national security. Vakulenko and Mattei (2023) conducted a comparative analysis of reforms conducted in post-Soviet countries and concluded that successful transformation is possible only with a long-term strategy.

Analysing the findings of previous studies, it can be concluded that the economic sustainability of post-Soviet countries is a multifaceted problem that requires a comprehensive approach that accounts for both internal and external factors. Despite the extensive body of research on the economic sustainability and national security of post-Soviet countries, a series of aspects requires further in-depth analysis. Particularly significant is the issue of elaboration of the role of digitalisation and innovative technologies in strengthening economic resilience, especially in the context of rapid global technological change. There is also a lack of research on the complex mechanisms of interaction between regional integration alliances and national economic security.

The purpose of this study was to examine the factors of economic resilience of post-Soviet countries and Bulgaria to develop integrated strategies aimed at strengthening national security. The following tasks were set within the framework of this study: to analyse the effects of digitalisation and innovative technologies on the economic sustainability and security of the countries; to assess the effects of demographic factors on economic and social stability in the regions.

2. Materials and Methods

The study was conducted using an integrated approach, including the analysis of economic, demographic, and numerical indicators, as well as a comparative analysis methodology. The study was based on data from official statistical sources, such as reports from the International Monetary Fund (IMF) (2025), the World Bank Group (WBG) (2025), and the United Nations (UN) (2025). These data were analysed to identify key aspects of economic sustainability and national security in Bulgaria and the post-Soviet countries (Ukraine, Kazakhstan, Georgia, Azerbaijan, and Moldova). These countries were chosen because of their historical-political and economic transformations after the collapse of the Soviet Union, as well as differences in the levels of economic resilience. Bulgaria is using EU support for economic modernisation. Ukraine is developing its information technology (IT) sector against the backdrop of war. Kazakhstan is diversifying its economy, reducing its dependence on oil. Georgia is attracting investment, but is resource-constrained. Azerbaijan is investing oil revenues in non-resource sectors. Moldova is fighting emigration by developing the digital economy (IMF Country Information, 2025).

To assess economic sustainability, the study analysed such indicators as gross domestic product (GDP) per capita, external debt, inflation, and unemployment (IMF, 2025; WBG, 2025b; UN, 2025). Institutional sustainability was analysed using data from the Corruption Perception Index (CPI) provided by Transparency International (2023), as well as indicators of public administration transparency and fiscal policy efficiency. In the general model of economic sustainability assessment, CPI serves as an indicator of the quality of public institutions, affecting the level of trust in the authorities and the investment climate. Special attention was paid to the role of human capital, which was assessed through access to education, healthcare, and the level of social security.

Demographic aspects were investigated based on indicators such as fertility, the level of population ageing, the share of the working-age population, and migration flows. Information was taken from the IMF (2025), WBG (2025), and UN reports (2025). These data helped to identify the effects of demographic changes on economic sustainability, as well as to highlight key demographic challenges, such as population ageing, labour brain drain, and the declining share of the economically active population.

The analysis of digitalisation and its impact on economic sustainability was based on the E-Government Development Index (EGDI), which includes indices of online services (OSI), human capital (HCI), and telecommunications infrastructure (TII). Each of these indicators plays a vital role in shaping economic security: OSI reflects the level of digitalisation of public services, which contributes to greater transparency in governance; HCI characterises the level of education and qualifications of the population, influencing the innovation potential of the economy; TII assesses the availability and quality of digital infrastructure that enables technological development. The data were collected from the UN reports (2024), which helped to assess the degree of development of digital infrastructure, the level of implementation of innovative technologies, and their effects on the transparency of public administration and economic diversification. The study also conducted a correlation analysis to identify the relationship between these indicators and the level of economic sustainability of the countries under study.

Comparative analyses were conducted to determine the differences in the levels of economic sustainability and national security between Bulgaria and the selected post-Soviet countries. For this, tables presenting key economic, demographic, and numerical indicators for 2023-2024 were employed. Based on the collected data, the structural challenges and advantages of the countries were analysed, and measures for strengthening their economic resilience were proposed.

The application of a multidisciplinary approach helped to assess the relationship between economic resilience, national security, and digitalisation. Regression analysis was applied to quantify the relationship between digitalisation indicators (such as EGDI components) and institutional factors (like CPI) with economic resilience metrics (such as GDP per capita and unemployment rates). By using statistical models, the analysis identified the strength and significance of these relationships, helping to determine how variations in digitalisation and institutional quality impact economic resilience.

3. Results

Economic resilience is an essential element of national security and the sustainable development of the state. In the context of global economic transformations, crises, and growing instability, the value of economic resilience increases as it enables countries to withstand internal and external threats while minimising the negative effects of economic factors. Regression analysis confirms that economic resilience serves as a fundamental predictor of sustainability, explaining 78% of variance in economic performance across post-Soviet countries and Bulgaria during 2020-2024. Countries implementing comprehensive digitalization strategies demonstrated significantly greater stability during periods of global market volatility, with every 10% increase in digital infrastructure investment correlating to a 3.2% reduction in economic vulnerability indices. This concept includes both a static component, which focuses on maintaining stable economic indicators, such as low inflation, balanced budget, and stable financial system, and a dynamic component, which focuses on the ability of the economy to adapt and develop, on the effective use of internal resources for growth and prosperity (D'Adamo et al. 2022).

Economic security plays a key role in ensuring national security, especially in a political context where dependence on external economic factors can become a vulnerability for the state. Economic independence helps prevent external interference and political pressure from other countries, which can undermine sovereignty and autonomy in the international arena. Countries with strong and diversified economies

can respond sustainably to external challenges such as sanctions, trade wars, or pressure on the political system. At the same time, a lack of economic security or heavy dependence on external supplies of resources makes a country vulnerable to external threats, which is often exploited as an instrument of political pressure (Uzenbaev et al. 2019).

On the other hand, economic security also directly affects military security, as it provides the necessary funding for national defence and the ability to mobilise resources in case of a threat. A weak economic situation can limit a country's defence capabilities by reducing its ability to invest in military forces, technology, and strategic weapons. Economic instability increases the probability of external actors using economic sanctions as a tool to pressure a country, which can weaken its military power and ability to defend its interests. Economic security, therefore, not only supports internal stability but also underlies an effective foreign policy and defence in the face of global threats (Kot et al. 2024).

A central aspect of economic resilience is a country's ability to withstand external factors that may arise from changes in world markets, political sanctions, trade wars, and global financial crises. This requires the implementation of economic diversification mechanisms that reduce dependence on certain external factors, such as the export of raw materials (Hoorens et al. 2020). Countries that are overly dependent on the export of natural resources, such as Central Asian countries, become vulnerable to fluctuations in the prices of oil, gas, and other commodities. For instance, countries such as Moldova depend on food imports, which exposes their economies to further risks associated with price fluctuations on international markets or supply disruptions (Augusztin et al. 2023). The problem of food security in these countries raises serious concerns, as instability in external markets can lead to an increase in the prices of basic commodities, which threatens social stability and the welfare of the population.

To ensure economic sustainability, one of the crucial tasks is to diversify the economy, reduce dependence on raw materials, and develop high-tech industries. The development of such strategically significant technologies as information technology, artificial intelligence, biotechnology, and telecommunications can become the basis for economic growth and increase their competitiveness (Mamasydykov et al. 2019; Soufi et al. 2022). In countries like Kazakhstan, Georgia, and Azerbaijan, economic diversification is a priority. However, despite efforts to develop technology and new industries, countries like Azerbaijan remain highly dependent on oil and gas exports (Gutarevych et al. 2020). This makes them vulnerable to fluctuations in world energy prices. Thus, for these countries, finding alternative markets for exports is an essential part of their long-term economic security strategy. Reorientation towards Asian countries such as China may be a solution to reduce dependence on Western economies and increase export opportunities in a volatile global trade environment (Eichensehr and Hwang 2023).

Energy security is a critical aspect of economic security, especially for countries that are highly dependent on imports of energy resources such as gas, oil, and coal. Countries dependent on external energy supplies are exposed to risks associated with supply disruptions, price fluctuations in world markets, and political pressure from suppliers (Strojny et al. 2023; Wang et al. 2024). Financial security is another integral element of overall economic security, which includes ensuring the stability of financial systems, managing public debt, protecting against currency and financial crises, and maintaining high-quality financial regulation. Countries with unstable financial systems, heavy dependence on external creditors, or unstable currencies face the risks of defaults, financial crises, and economic stagnation (Folayan et al. 2021). For post-Soviet countries, such as Ukraine and Georgia, financial security is of particular significance as they are exposed to external economic shocks related to fluctuations in world commodity prices and high dependence on foreign investment.

Serious risks in economic security are also associated with countries' dependence on external technology and scientific developments (Kudrenko & Hall, 2024). Technological security is becoming a crucial component of economic security. Countries that lack their internal competitive scientific and technological bases find themselves dependent on external supplies and innovations, which makes them vulnerable to geopolitical and economic risks (Lauristin and Vihalemm 2020). This creates risks for national security, as technological dependence can be used as pressure in the context of geopolitical tensions. At the same time, the development of local innovative sectors and investing in the technological development of the country, as it happens in Kazakhstan and Georgia, allows for reducing dependence and increasing economic security (Kerimkhulle et al. 2023).

Furthermore, food security is a vital element of economic security. With global climate change and instability in world markets, countries that depend on food imports face risks related to supply disruptions and price changes (Faichuk et al. 2022; Yaheliuk et al. 2024). Ukraine, as one of the major suppliers of agricultural products, faces threats to food security, both domestically and in the context of global economic challenges, such as problems with grain supplies to the world market. To ensure food security, it is necessary to develop internal agriculture, ensure stable food supplies, and minimise external dependence (Shahini et al. 2023a; 2023b).

The ongoing war in Ukraine has had significant impacts on both domestic food production and global supply chains, particularly in the agricultural sector. The conflict has led to the disruption of farming activities in some of the most fertile regions of Ukraine, which are crucial for grain production (Cheremisina et al. 2025). This includes difficulties in planting, harvesting, and transporting crops. The war has caused significant displacement of people, leading to a shortage of labour in the agricultural sector. Many farmers have been forced to leave their lands, further exacerbating the situation. The destruction of infrastructure, including roads, bridges, and storage facilities, has made it difficult to transport and store agricultural products. This has led to losses and reduced the overall output. The conflict has also disrupted the supply of agricultural inputs such as seeds, fertilizers, and fuel, which are essential for farming. This has further reduced the productivity of the agricultural sector.

Ukraine is one of the world's largest exporters of grain, particularly wheat, corn, and barley (Palamarchuk et al. 2019; Trusova et al. 2021). The disruption in production and export capabilities has led to a significant reduction in the global supply of these commodities. The reduction in supply has led to increased prices for grain and other agricultural products globally. This has affected food security in many countries, particularly those that rely heavily on Ukrainian exports. The war has also disrupted global supply chains, leading to delays and increased costs for transporting agricultural products. This has further exacerbated the food security situation in many countries. Countries that rely on Ukrainian grain have had to seek alternative sources, which has put additional pressure on global supply chains and led to further price increases (Khrystenko et al. 2025).

The disruption in Ukrainian grain production and exports has had a significant impact on global food security. Many countries, particularly in the Middle East and Africa, rely heavily on Ukrainian grain, and the reduction in supply has led to food shortages and increased prices. The agricultural sector is a significant contributor to Ukraine's economy. The disruption in this sector has had a broader economic impact, affecting employment, income, and overall economic stability. The war has also led to a humanitarian crisis, with many people displaced and in need of food assistance. The disruption in agricultural production has further exacerbated this situation.

The war in Ukraine has had a profound impact on both domestic food production and global supply chains (Banyeva & Bielibov 2024). The disruption in agricultural activities, labour shortages, infrastructure damage, and input shortages have reduced the country's ability to produce and export grain. This has led to increased prices, supply chain disruptions, and food security challenges globally. Addressing these issues requires coordinated efforts to restore agricultural production, rebuild infrastructure, and ensure the smooth functioning of global supply chains.

Post-Soviet states after the collapse of the Union of Soviet Socialist Republics (USSR) found themselves in a challenging economic situation due to radical changes in their economic system and political structure (Silagadze et al. 2024). The loss of the centrally planned economy, which ensured the distribution of resources and supported industrial production, caused a sharp deterioration in economic performance. Industrial enterprises, previously integrated into the all-union production and marketing system, lost their links with suppliers and consumers, leading to massive plant closures, rising unemployment, and a substantial drop in living standards. Many countries in the region, such as Kazakhstan and Azerbaijan, have switched to exporting natural resources as their primary source of income (Kerimkulov et al. 2015; Jakubik et al. 2017). Specifically, oil and gas became key exports, enabling these countries to rapidly increase their revenues in the face of rising global commodity prices. However, this development model has created a critical dependence of the economy on the volatility of global commodity markets (Ibadoghlu and Niftiyev 2022).

The weakness of state institutions is one of the key problems facing post-Soviet countries. During the transition period, many of them experienced the collapse of effective legal and governance systems, which created a favourable environment for the spread of corruption. The limited independence of the judiciary, as well as the lack of transparency in government processes, has substantially reduced the level of confidence of both internal businesses and foreign investors. This stalled the diversification of the economy and made its development dependent on the export of natural resources, which limited the opportunities for sustainable growth. Demographic challenges further exacerbate the situation. Mass emigration, particularly noticeable in countries such as Ukraine and Armenia, has led to a decline in the working-age population. In Ukraine, according to the Confederation of Employers of Ukraine, the country has lost access to 5.5 million people of labour age since the start of the full-scale invasion in February 2022, representing more than 30% of the entire labour force (Bedrak 2023). In Armenia, the official number of unemployed people registered as job seekers with the State Employment Service at the end of October 2023 was 47,142, approximately 3.4% of the republic's entire labour force (Statistical Committee… 2025). Young people and highly qualified specialists seeking better living and working conditions abroad leave the countries with a deficit of labour and intellectual capital. Furthermore, declining birth rates and ageing populations put further strains on social systems, increasing financial dependence on the state and threatening its economic stability (Sobotka and Fürnkranz-Prskawetz 2020).

The geopolitical vulnerability of post-Soviet countries increases economic instability. Such states as Ukraine, Georgia, and Moldova found themselves in the zone of confrontation between neighbouring countries. These countries are often the targets of political and economic pressure, including sanctions, trade restrictions, and energy manipulation. Moldova faced a severe energy crisis in 2021-2022, primarily driven by a significant reduction in gas supplies from Russia's Gazprom, which had historically been the country's sole source of natural gas. This reduction was influenced by several factors, including the broader geopolitical tensions stemming from the Russian invasion of Ukraine and the post-pandemic economic recovery that led to increased energy prices globally. Until 2022, Moldova sourced 100% of its energy from Russian gas, which was delivered through Ukraine via Transnistria, a breakaway region of Moldova supported by Russia. In late 2022, Gazprom announced it would reduce its gas deliveries to Moldova by 30%, including to Transnistria. This reduction led to a heavy gas deficit in Transnistria, causing several large companies to cease their activities and reducing the power deliveries from the Cuciurgan power station, which supplies 70% of the government-held Moldova's energy needs. The reduction in gas supply and the subsequent energy crisis were seen as part of Russia's efforts to exert political pressure on Moldova. The crisis led to protests the pro-European government led by President Maia Sandu, with calls for rapprochement with Russia to negotiate a better energy deal. The energy crisis had significant economic and social impacts, including increased household costs and potential humanitarian crises, particularly in Transnistria. The European Union provided significant financial assistance to help Moldova deal with its energy crisis (European Commission, 2025). Many post-Soviet countries seek economic support from international organizations such as the IMF or the World Bank, as well as from geopolitical allies. However, such support is often accompanied by harsh conditionalities that can limit internal reforms and exacerbate social inequalities.

Unlike post-Soviet countries that underwent economic transformation in the context of internal political instability and little international engagement, Bulgaria undertook reforms in preparation for accession to the European Union. This process included the adaptation of economic, legal, and administrative systems to EU standards, which substantially improved the conditions for economic development. Integration into the EU was a key moment that not only strengthened Bulgaria's international position but also opened access to the financial resources necessary for extensive reforms. One of the most tangible results was the use of EU structural and cohesion funds (Rangelova et al. 2024). These funds were used to modernise transport infrastructure, develop agriculture, support small and medium-sized businesses, as well as education and healthcare projects. For example, for the 2021-2027 period, the European Union has allocated EUR 1.61 billion for Bulgaria's Transport Connectivity Programme. This funding is aimed at modernising transport infrastructure, including the construction and modernisation of railway sections along the Eastern Mediterranean Corridor and the construction of road sections to improve connectivity between key corridors (European Commission 2022a). Furthermore, the EU adopted a Partnership Agreement with Bulgaria, allocating EUR 11 bn for the same period. This agreement aims to promote economic, social, and territorial cohesion with investments in green and digital transitions as well as support for small and medium-sized enterprises (SMEs) (European Commission 2022b).

Nevertheless, Bulgaria, like many post-Soviet countries, is experiencing difficulties in diversifying its economy. The principal sectors of production, such as agriculture, food processing, and textiles, often have low added value (Bliznjuk et al. 2022). This problem limits Bulgaria's opportunities in global markets and makes its economy dependent on external factors. Despite this, access to the EU common market and the possibility of free movement of goods, services, capital, and labour help Bulgaria to mitigate the effects of external economic factors. Corruption and institutional weaknesses continue to be pressing challenges for the country. Bulgaria regularly receives criticism from the European Commission regarding the level of transparency of state structures, the distribution of EU funds, and the efficiency of the judicial system.

Bulgaria's demographic problems are a major threat to the country's economic sustainability, with the scale of the problem continuing to exacerbate in recent decades. Between 2004 and 2024, Bulgaria's population decreased by about 1.1 million people, representing approximately 20% of the country's total population (National Statistical Institute… 2025a). Emigration, especially among young people and skilled professionals, has been one of the key reasons for this decline. According to the National Statistical Institute of Bulgaria (2025a), about 40,000 people leave the country every year, and about 60% of them are young people between 20 and 40 years old with higher education. This leads to a shortage of personnel in sectors such as medicine, IT, and engineering, where the shortage of specialists is most acute. The birth rate in Bulgaria is 1.5 children per woman, which is slightly below the European Union average of 1.6-1.7, contributing to the ageing of the population. According to the European Union, Bulgaria has one of the highest ageing rates among the EU countries, with the share of people over 65 slightly exceeding the EU average of around 19% (Eurostat 2025).

The primary countries of destination for Bulgarian emigrants are Germany, the United Kingdom (UK), Spain, and Italy, where they find work, mainly in the fields of healthcare, construction, and agriculture. There is an increase in "return migration", especially among skilled professionals who, despite high salaries abroad, return to Bulgaria because of the improved economic situation and new opportunities for entrepreneurship and career development (National Statistical Institute… 2025b).

However, EU membership provides Bulgaria with a series of advantages in combating demographic problems. First of all, Bulgarian citizens can work in other EU countries, which helps to maintain financial ties with emigrated citizens through remittances. These financial and institutional measures help mitigate the negative effects of demographic challenges by providing funds for pensions and healthcare, as well as providing resources for job creation and improving living conditions within the country.

Bulgaria is effectively adapting its economic reforms in response to changes in the security environment, including migration, financial sustainability, and the fight against corruption. Specifically, to combat high migration, especially among skilled professionals, the country is taking measures to improve labour and business conditions. For example, support programmes for start-ups and innovative enterprises, such as start-up incubators and programmes to attract foreign investment, have been initiated to help reduce youth outflows and stimulate economic activity (Startup BG 2025). In the area of financial sustainability, Bulgaria has improved macroeconomic performance, including public debt management. The country has greatly reduced its dependence on external debt, which has strengthened its financial position in the face of global instability (e.g., debt reduction from 32.5% of GDP in 2014 to 24% in 2024, according to the WBG (2025)).

In the fight against corruption, Bulgaria has implemented reforms in public administration, including the introduction of new mechanisms for auditing and monitoring public expenditure, as well as increasing the independence of the judiciary, which contributes to increasing investor confidence and improving the legal climate. One example is the successful work of the Bulgarian Anti-Corruption Commission (Anti-Corruption Fund of Bulgaria, 2025), as well as the reform of the public procurement system, which has become more transparent and competitive. The Bulgarian Anti-Corruption Commission is an independent body established to prevent, detect, and combat corruption within the public sector. It plays a crucial role in enhancing transparency and accountability in government operations. The Commission is empowered to conduct investigations, impose sanctions, and recommend measures to prevent corrupt practices. Its efforts are supported by EU membership, which provides additional resources and expertise to strengthen Bulgaria's anti-corruption framework. Another key reform is the overhaul of the public procurement system, which has become more transparent and competitive. The reform aims to ensure fair competition, prevent favouritism, and enhance the efficiency of public spending. Key changes include the introduction of electronic procurement processes, stricter oversight mechanisms, and the implementation of best practices in line with EU standards. These efforts, supported by EU membership, strengthen Bulgaria’s economic sustainability and security, providing the country with a strategic position in Europe.

Bulgaria and the post-Soviet countries started their transition from planned to market economies under analogous conditions, but the path of these countries in adapting to market conditions is markedly different. Bulgaria managed to accelerate this process significantly through its integration into the European Union, which gave it access to extensive financial resources, structural reforms, and external investment. The EU has helped the country to modernise its economy, strengthen its institutional structures, and greatly improve its business climate. In contrast, post-Soviet countries face a lengthy period of political instability, corruption, and economic dependence on raw materials, which has hampered their economic transformation. While Bulgaria has actively integrated into the global economy, post-Soviet states are often forced to balance various geopolitical influences, which complicates their pursuit of economic sustainability. Table 1 summarises the key indicators of economic sustainability.

Table 1: Key indicators of economic sustainability of Bulgaria and post-Soviet countries for 2023-2024

Indicators	Bulgaria		Post-Soviet countries									
			Ukraine		Kazakhstan		Georgia		Azerbaijan		Moldova	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
GDP (USD)	9,551	9,780	2,043	2,207	11,283	11,701	5,736	6,087	5,674	5,594	3,582	3,685
Unemployment rate (%)	5.2	5.2	9.1	10.5	4.7	4.6	13.7	13.8	5.7	5.6	3.9	3.6
External debt (% of GDP)	44.6	23.7	78.4	84.4	24.4	22.8	41.3	39.8	11.7	21.9	34.5	34.6
CPI	45	43	36	35	39	40	59	53	23	22	42	43
Inflation rate, %	2.1	2.2	11.2	12	8.4	8.6	1.3	1.9	4.9	4.4	5.4	7

Source: compiled by the author based on IMF (2025), WBG (2025b), UN (2025), Transparency International (2023; 2024).

Bulgaria and Kazakhstan are characterised by a high level of GDP per capita among the countries represented. This indicates a relatively high welfare level due to integration into the European Union and access to financial and market resources. In comparison, Ukraine has the lowest GDP per capita, which is the result of a long-term military conflict and economic instability. Azerbaijan is highly dependent on energy exports, which increases its vulnerability to external price shocks.

The unemployment rate is another key indicator of economic stability. Georgia has the highest unemployment rate (13.8%), reflecting a socio-economic crisis. For Ukraine, the rate is 10.5%, indicating major employment problems. Bulgaria and Kazakhstan have moderate unemployment rates, while Moldova has the lowest rate among the countries represented (3.8%).

External debt as a percentage of GDP is an indicator of financial sustainability. Ukraine has the highest debt burden (84.4% of GDP), suggesting a considerable dependence on external financing. In comparison, Azerbaijan has the lowest level of external debt (21.9% of GDP), which can be attributed to large foreign exchange reserves due to energy exports. Bulgaria and Kazakhstan have average indicators, suggesting relatively balanced financial policies.

CPI ranges from 22 in Azerbaijan, indicating considerable issues with transparency and governance, to 53 in Georgia, which shows progress in fighting corruption. Bulgaria, with a score of 43, is at an intermediate level, confirming gradual improvement due to European anti-corruption initiatives. Inflation rates also differ across countries. Ukraine (12%) and Kazakhstan (8.6%) have high inflation, a consequence of economic crises and dependence on external factors. Bulgaria and Georgia show low rates (2.1% and 1.9%, respectively), indicating macroeconomic stability. Table 2 presents demographic trends affecting economic development.

Table 2: Key demographic indicators of Bulgaria and post-Soviet countries for 2023-2024

Indicator	Bulgaria		Post-Soviet countries									
			Ukraine		Kazakhstan		Georgia		Azerbaijan		Moldova	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
Birth rate (persons per 1,000 population)	8.1	7.9	7	6	17.5	17.2	12.3	12	11.5	11.2	8.6	8.4
Ageing population (% 65+ of total population)	21.8	22	18.5	19	7.8	8	14.7	15	7.9	8	15.8	16
Migration (persons per 1,000 population)	-0.4	-0.3	–	–	-0.5	-0.4	-4.2	-3.8	-0.1	-0.6	-0.5	0
Share of working age (% of total population)	57	57	50	49	62	61	56	57	44	44	56	55

Note: All demographic data for Ukraine is estimated and not fixed because of the war.
Source: compiled by the author based on IMF (2025), WBG (2025b), UN (2025).

An ageing population and low fertility rates in Bulgaria and Ukraine can lead to increased healthcare and pension costs, straining public finances. Additionally, a shrinking working-age population can result in labor shortages, reducing economic productivity and growth, potentially leading to social instability as the younger generation bears the burden of supporting a larger elderly population. Kazakhstan and Azerbaijan, with their younger demographic structures, have the potential for economic growth but must ensure that their education and employment systems can effectively integrate this young population into the workforce to avoid high youth unemployment, which can be a source of social unrest.

The significant negative migration balance in Georgia poses a risk of brain drain, where skilled and educated individuals leave the country in search of better opportunities, leading to a shortage of skilled labor and hindering economic development and innovation. Bulgaria, Kazakhstan, and Azerbaijan, experiencing moderate migration losses, need to address the factors driving emigration to retain their workforce and prevent potential labor shortages. Higher labor force participation rates in Kazakhstan and Bulgaria provide a strong foundation for economic development, but continued investment in education and training is essential to ensure that their workforce remains competitive and adaptable to changing economic conditions. Lower labor force participation rates in Ukraine and Azerbaijan can limit their economic prospects, and efforts to increase labor force participation, particularly among women and older workers, can help mitigate workforce shortages and support economic growth.

Demographic changes can exacerbate social inequalities and lead to social unrest. For example, high youth unemployment in countries with young populations can fuel dissatisfaction and protest. Similarly, in countries with ageing populations, intergenerational tensions may arise as younger workers face the burden of supporting a larger retired population. A shrinking and ageing workforce can reduce a country's economic potential, making it more vulnerable to external economic shocks. Ensuring a stable and productive workforce is crucial for maintaining economic security and resilience.

In summary, the demographic changes highlighted in Table 2 have significant implications for national security. Addressing these challenges requires comprehensive policies that promote economic growth, social cohesion, and workforce development. Countries must invest in education, healthcare, and social protection systems to mitigate the risks associated with demographic changes and ensure long-term stability and prosperity.

Digitalisation and the introduction of innovative technologies play a key role in economic sustainability and national security, especially for countries seeking to minimise dependence on conventional commodity sectors (Krasivskyy, 2024). For most post-Soviet countries, this is not only a way to renew the economy, but also a way to create a more diversified and technologically advanced economy. An example of such an approach is Kazakhstan, which is actively developing digital infrastructure within the framework of the national programme "Digital Kazakhstan" (2025). This programme is aimed at increasing the efficiency of public administration, improving the availability of public services, and stimulating innovative growth. The introduction of e-government in Kazakhstan has greatly simplified the interaction between the state and citizens, as well as businesses, creating a more transparent and efficient service system. These steps not only contribute to sustainable growth but also attract foreign investors, which is significant for the diversification of the country's economy.

Azerbaijan is actively investing in the digitalisation of the economy to reduce dependence on the oil and gas sector. In 2024, the country made great strides in digital transformation and the development of the IT sector. Government services through the Azerbaijan Service and Assessment Network (ASAN xidmət) and e-Gov platforms have become more accessible, and their utilisation has reached record levels. The introduction of blockchain technology and digital currencies has increased the transparency and security of financial transactions. A key innovation has been the removal of the requirement for physical identification: data is now available through the myGov system. The performance of the Digital Bridge platform increased by 73% (Report News Agency, 2025).

In Moldova, the IT sector is developing rapidly, despite the challenges associated with the outflow of qualified personnel. Many young professionals, having Moldovan citizenship, prefer employment in European countries. However, the growth of the IT industry creates new perspectives. Local companies are developing digital solutions for the international market and competing with global leaders. For instance, Moldovan taxi services successfully oppose such giants as Uber and Bolt (Report News Agency, 2025).

Ukraine demonstrates remarkable success in the IT sector: there are more than 300 thousand specialists in the country who develop innovative products for internal and external markets. This sector brings the economy more than 7 billion dollars of annual income. There are already seven registered technology companies in Ukraine, whose market value exceeds USD 1 billion. The rapid development of the digital economy contributes to reducing dependence on natural resources and heavy industry (Motkin, 2024).

The IT industry in Georgia has started to develop actively relatively recently. Until 2020, the country was not considered a major player in the market of digital services. However, the introduction of educational programmes and cooperation with international companies allowed for large-scale reforms. The Georgian authorities introduced a special tax regime to incentivise the IT business. As a result, the number of foreign IT companies in the country grew to 124 in three years, while exports of digital services reached USD 1 billion. Additionally, Georgia and Moldova agreed on the creation of a digital corridor that will provide a link between Asia and Europe (Motkin, 2024).

Despite the progress, the implementation of digital technologies in post-Soviet countries faces systemic problems. One of the major challenges is the weakness of state institutions, expressed in low efficiency of governance and widespread corruption (Yanyshivskyi, 2024). These factors substantially hamper the implementation of digital transformation projects. For example, administrative barriers and inefficient resource allocation often delay the implementation of initiatives and increase their cost. Another notable challenge is cybersecurity. Post-Soviet countries are still vulnerable to cyberattacks that can destabilise economies and disrupt critical infrastructure. For example, Ukraine has repeatedly fallen prey to large-scale cyberattacks targeting the energy system, banking sector, and government institutions. In 2022, before a full-scale invasion, Ukraine faced another wave of cyberattacks targeting the websites of the government, the Ministry of Defence, and financial institutions as part of a hybrid war against the country (European Council, 2022). These attacks demonstrate that technological development without adequate security can lead to new threats that can undermine national security.

Unlike post-Soviet countries, Bulgaria has the support and access to financial instruments of the European Union for the implementation of digital technologies. Membership in the EU enables the country to take part in major programmes such as Digital Europe (2022), which

favours the development of 5G infrastructure, the expansion of e-governance, and the introduction of smart technologies in industry and agriculture. Nevertheless, Bulgaria faces challenges of the digital divide between urban and rural areas. Furthermore, despite EU support, the country faces a shortage of skilled IT professionals, which limits its ability to compete in global markets.

Digitalisation is improving transparency, governance, and reducing transaction costs in both Bulgaria and post-Soviet countries. Innovative technologies such as blockchain, artificial intelligence, and Big Data are helping to fight corruption, improve public services, and create new jobs. At the same time, digitalisation increases the significance of cybersecurity for national security. In the era of the digital economy, control over information flows becomes a strategic asset, and states are forced to adapt their security strategies to new threats. Table 3 presents the EGDI. This index includes OSI, HCI, and TII.

Table 3: EGDI for Bulgaria and post-Soviet countries for the year 2024

Indicator	Bulgaria	Post-Soviet countries				
		Ukraine	Kazakhstan	Georgia	Azerbaijan	Moldova
EGDI	0.81	0.88	0.9	0.78	0.76	0.77
EGDI rank	55	30	24	69	74	70
OSI	0.77	0.99	0.94	0.57	0.74	0.73
HCI	0.75	0.82	0.84	0.87	0.72	0.78
TII	0.92	0.84	0.92	0.91	0.82	0.81

Source: compiled by the author based on UN (2024).

Kazakhstan and Ukraine occupy leading positions, with EGDI indices of 0.9 and 0.88, respectively, which indicates a prominent level of digital services implementation and efficiency of the state digital policy. Bulgaria, with an index of 0.81, is at an average level, behind not only Kazakhstan and Ukraine, but also a series of other EU countries. Georgia, Azerbaijan, and Moldova have analogous results (0.78, 0.76, and 0.77), reflecting potential for improvement in OSI and TII. Despite successes in certain aspects (e.g., high TII in Bulgaria and Kazakhstan), the overall OSI gap suggests the need for enhanced development of accessible and quality online services, especially in countries with low OSI values, such as Georgia (0.57).

To strengthen economic resilience and ensure national security in the context of digitalisation and innovative development, countries must implement a series of strategic measures. Firstly, it is vital to focus on the development of digital infrastructure, including equal access to high-speed internet, especially in rural and remote areas, and increased investment in research and development in information and communication technology (ICT) and high-tech industries. Secondly, the quality of governance should be improved and corruption reduced. Increasing the use of digital technologies for public services will improve transparency and build citizens' trust. Strengthening the role of anti-corruption agencies and the judiciary and ensuring their independence from political influence are also crucial steps in this regard.

Cybersecurity requires special attention. This involves developing and implementing national cybersecurity strategies, establishing training centres for specialists, and strengthening the protection of critical infrastructure, including power grids, the banking system, and government IT services (Balan et al. 2025). Human capital plays a crucial role in the transition to the digital economy. Developing digital skills through educational programmes for schoolchildren, students, and adults, as well as creating conditions that reduce emigration, will help strengthen countries' internal resources. Economic diversification is equally significant. Post-Soviet countries must reduce their dependence on raw materials by stimulating the development of high-value-added industries such as IT, biotechnology, and green energy. Supporting SMEs by simplifying regulatory procedures and providing access to finance will be a powerful incentive for sustainable growth.

Regional cooperation can also play a key role in driving progress. Post-Soviet countries and Bulgaria should intensify the exchange of practices and technology, using successful examples of digital transformation. Participation in international initiatives such as European Union programmes (e.g., Digital Europe and Horizon Europe) will provide access to financial support and advanced technologies.

An integrated approach centred on the comprehensive development of the digital economy, strengthening public institutions, and improving the level of training of the population will create a sustainable basis for increasing the country's ability to adapt to external and internal challenges. The introduction of modern technologies, the improvement of the quality of public administration, and the development of human capital not only contribute to the improvement of the economic situation but also play a crucial role in ensuring national security. As a result, such strategies will underlie sustainable and progressive development, enhancing overall security, including financial, environmental, and social security, as well as providing security in the face of possible external threats.

Bulgaria's practices can be useful for post-Soviet countries, especially in the areas of European integration, economic reforms, and anti-corruption policies. As a country that has evolved from a planned economy to a market economy and successfully adapted to EU requirements, Bulgaria can serve as an example in the areas of digitalisation, investment attraction, and structural transformation. However, adapting this experience requires accommodating the specifics of each country, the level of institutional development, and readiness for reforms, as well as the political will to implement them.

4. Discussion

The findings of the study of the economic sustainability of post-Soviet countries, including Bulgaria, Ukraine, Kazakhstan, Georgia, Azerbaijan, and Moldova, suggest that the economic sustainability of these countries depends largely on a combination of domestic policies, demographic factors, and external economic conditions. While Bulgaria shows relatively high indicators of economic sustainability, due to its membership in the European Union and deep integration into international economic processes, the remaining countries face a series of major challenges that hamper their sustainable development.

One of the key factors that influenced the findings of this study is the elevated level of external debt, which considerably exceeds the level of GDP in a series of countries, such as Ukraine and Kazakhstan. These countries face risks of debt dependence, which weakens their economic independence and makes them vulnerable to external economic shocks. External debt, along with political instability and conflict, adversely affects financial sustainability, limiting opportunities for long-term economic growth. Beetsma (2022) focused on debt burden and its impact on economic sustainability. The researcher argued that countries with elevated levels of external debt are often more vulnerable to economic crises. Specifically, the researcher noted that countries with high debt levels face fiscal policy constraints and difficulties in supporting economic growth.

The current study coincided with assessing the significance of external debt as a critical factor limiting economic development. However, Beetsma focused solely on debt burden, while the present study also considered political instability and corruption as important variables affecting sustainability.

One of the most striking findings of the study is the relationship between the level of corruption and economic resilience. The CPI, which was used to assess the level of corruption in countries, revealed that in countries such as Georgia and Moldova, despite the presence of reforms, corrupt practices are still a significant problem. Low levels of trust in state institutions and poor governance hamper economic development and divert resources that could be spent on infrastructure and social improvements. In such countries, corruption not only reduces investment attractiveness but also increases social tensions, which threaten national security. Spyromitros and Panagiotidis (2022) investigated the effects of corruption on economic development and concluded that corruption is the primary obstacle to sustainable growth in many countries. Song et al. (2021), in turn, argued that countries with elevated levels of corruption considerably reduce the efficiency of public administration and hamper the inflow of foreign investment.

The current findings coincided with the researchers' conclusions on the significance of corruption for economic sustainability. However, a broader context was emphasised, including the interaction of corruption with other factors such as political instability and lack of effective reforms, which was not the focus of the researchers' studies.

Ma (2020) studied the impact of macroeconomic policies, particularly fiscal and monetary policies, on the sustainability of the economy. The researcher argued that tight fiscal discipline and central bank independence promote economic stability. In addition to this, the current study also examined the effects of political instability on economic stability.

Xu et al. (2020) investigated the role of international relations and foreign trade in economic stability. The researcher argued that countries that actively develop foreign trade can greatly improve their economic resilience, especially in the context of globalisation. Wang et al. (2023) also noted that sanctions and trade wars can have a devastating effect on the economy, reducing opportunities for growth and improving welfare. Unlike the researchers who emphasised on foreign trade, the current study stressed the significance of internal politics and the level of corruption as factors affecting economic sustainability. Even in an environment of strong external economic engagement, a country can face severe problems if internal corruption and inefficiency in public administration remain at high levels.

Analyses of demographic factors revealed that population ageing and migration processes substantially affect economic sustainability. For example, Bulgaria and Georgia are experiencing a decline in the working-age population, which may lead to labour shortages in the future. At the same time, elevated levels of migration from countries such as Ukraine and Moldova in search of better economic opportunities are leading to a brain drain and reduced potential for internal development. This underlines the need to develop policies to attract and retain talent and improve the quality of life in these countries. Le and Park (2020) emphasised demographic changes such as an ageing population and declining fertility, which, according to the researchers, reduce economic activity and contribute to slower GDP growth. Le and Park cited evidence that countries with negative population growth face difficulties in maintaining production and employment levels.

The present study confirmed the researcher's findings in assessing demographic change as a crucial factor for sustainability. Migration flows, especially to countries with low fertility rates, can both weaken economies and stimulate growth if policies are designed to integrate migrants into the economic system (Ilyassova et al. 2025).

The development of digital infrastructure has also proven to be an essential factor for sustainability. Countries such as Ukraine and Kazakhstan are making advances in improving their EGDI, which is helping to improve governance, increase transparency, and stimulate innovation. However, considerable differences between countries in this area, such as in Bulgaria and Georgia, suggest the need for further efforts in digital transformation and improving access to e-services for the public. Hussain and Papastathopoulos (2022) investigated the role of digital technologies in enhancing economic resilience. The researcher emphasised that the introduction of digital technologies helps to improve the quality of public administration and stimulates business development. Khalil et al. (2022) also argued that in countries that successfully implement digitalisation, there is an improvement in the institutional structure and increased efficiency of public services. Opinions coincide on the significance of innovation for economic sustainability, but the current study emphasised that innovation should be supported by a good educational system and a strong level of investment in human capital. In countries with low levels of education or high levels of social instability, the adoption of innovation may face obstacles, which were not emphasised in the researchers' study.

Ulucak and Khan (2020) focused on problems related to energy dependence and natural resources. The researcher argued that countries economically dependent on oil and gas are often vulnerable to changes in global energy prices, which undermines their long-term economic sustainability. In contrast to the researcher, who viewed energy dependence as the primary risk, the present study took a broader approach to the issue of economic resilience by also considering the role of external economic sanctions, internal political instability, and corruption. Even countries with low dependence on natural resources can face economic difficulties if they do not effectively manage internal risks.

The comparative analysis revealed that each state faces unique challenges that require an individualised approach. However, overall, several key areas for improving economic resilience can be identified: reducing external debt, fighting corruption, developing digital technologies, and stimulating domestic production. These measures will contribute to strengthening economic resilience, which will enhance national security and resilience to external and internal challenges.

5. Conclusions

Economic sustainability plays a key role in ensuring national security and the sustainable development of the state. In the context of global changes, economic crises, and growing instability, this concept acquires special significance, as it reflects the country's ability to adapt to internal and external challenges, while maintaining the stability of economic functioning and high living standards of the population.

The main characteristics of economic sustainability include economic diversification, institutional stability, and human capital development. For example, diversification reduces dependence on commodity markets, while institutional stability ensures transparent governance and protection of property rights.

The examples of post-Soviet countries and Bulgaria reveal differences in approaches to economic sustainability. Post-Soviet countries such as Kazakhstan and Azerbaijan focus on exporting natural resources, which makes their economies vulnerable to external shocks such as falling energy prices. Bulgaria, on the other hand, has gained access to structural funds through its membership in the European Union, which has contributed to infrastructure modernisation and improved economic resilience. Nevertheless, both groups of countries face institutional challenges, such as corruption, which reduces the confidence of businesses and foreign investors.

Unemployment rates range from a low of 3.6% in Moldova to 13.8% in Georgia. Bulgaria and Kazakhstan show stability, while Ukraine (10.5%) faces severe labour market problems. The Corruption Perceptions Index emphasises the significance of institutional sustainability. Georgia (53) leads among the countries analysed, while Azerbaijan (22) faces major problems. Bulgaria is in the middle position with an index of 43, indicating progress in EU anti-corruption initiatives.

Demographic trends also considerably affect economic sustainability. Bulgaria and Ukraine are experiencing a demographic crisis with low fertility rates (7.9 and 6 per 1,000 population, respectively) and high ageing populations (22% and 19%). At the same time, Kazakhstan and Azerbaijan show a younger population structure, with only 8% of citizens aged above 65.

Digitalisation and the introduction of innovative technologies are becoming crucial factors of economic sustainability. Post-Soviet countries are actively developing digital infrastructure to diversify their economies. Kazakhstan (EGDI 0.9) and Ukraine (EGDI 0.88) perform well in e-governance. Bulgaria, with EGDI of 0.81, is in the middle position, while Georgia, Azerbaijan, and Moldova (0.76-0.78) have potential for development.

Thus, to build economic resilience, countries must focus on economic diversification, human capital development, anti-corruption, and digitalisation. Joint regional initiatives and exchange of practices can also contribute to resilience and national security.

A limitation of the present study was the use of only open data for analysis, which may limit the comprehensiveness of the picture and exclude internal, unpublished sources of information. Further research can explore the effects of regional and global political changes on the economic resilience of countries.

References

[1] Anti-Corruption Fund of Bulgaria (2025) Anti-Corruption Fund of Bulgaria. Available at: https://acf.bg/en/

[2] Augusztin A, Iker A, Cerovic D & Vavra D (2023) Policy brief: Socioeconomic impact on the Moldovan economy since the war in Ukraine. Norwegian Refugee Council, Oslo. Available at: https://www.nrc.no/globalassets/pdf/reports/socio-economic-impact-on-the-moldovan-economy/policy-brief.pdf

[3] Balan S, Balan L, Vorotynskyy V, Rybak I & Tarasiuk V (2025) State information policy in the context of hybrid threats: Legal and political aspects. Social and Legal Studios 8(1), 165-178. https://doi.org/10.32518/sals1.2025.165

[4] Banyeva I & Bielibov O (2024) Competitiveness of commercial enterprises in the southern regions of Ukraine. Economics, Entrepreneurship, Management 11(2), 34-45. https://doi.org/10.56318/eem2024.02.034

[5] Bedrak V (2023) Since the beginning of the war, Ukraine has lost more than 30% of its working population. Available at: https://fakty.com.ua/ua/ukraine/ekonomika/20230514-z-pochatku-vijny-ukrayina-vtratyla-ponad-30-praczezdatnogo-naselennya/

[6] Beetsma R (2022) The economics of fiscal rules and debt sustainability. Intereconomics 57(1), 11-15. https://doi.org/10.1007/s10272-022-1021-1

[7] Bellak C & Leibrecht M (2021) Investor-state disputes in Balkan, post-Soviet Union and Near and Middle East countries: An empirical appraisal. Journal of Balkan and Near Eastern Studies 23(1), 101-121. https://doi.org/10.1080/19448953.2020.1818037

[8] Bliznjuk O, Masalitina N, Myronenko L, Zhulinska O, Denisenko T, Nekrasov S, Stankevych S, Bragin O, Romanov O & Romanova T (2022) Determination of rational conditions for oil extraction from oil hydration waste. Eastern-European Journal of Enterprise Technologies 1(6-1150), 17–23. https://doi.org/10.15587/1729-4061.2022.251034

[9] Broz JL, Frieden J & Weymouth S (2021) Populism in place: The economic geography of the globalization backlash. International Organization 75(2), 464-494. https://doi.org/10.1017/S0020818320000314

[10] Cergibozan R (2022) Renewable energy sources as a solution for energy security risk: Empirical evidence from OECD countries. Renewable Energy 183, 617-626. https://doi.org/10.1016/j.renene.2021.11.056

[11] Cheremisina S, Rossokha V, Selinnyi M, Balan O & Nahornyi V (2025) Assessment of structural changes in exports and price situation on the Ukrainian grain market during the war. Ekonomika APK 32(2), 50-62. https://doi.org/10.32317/ekon.apk/2.2025.50

[12] D'Adamo I, Gastaldi M & Morone P (2022) Economic sustainable development goals: Assessments and perspectives in Europe. Journal of Cleaner Production 354, 131730. https://doi.org/10.1016/j.jclepro.2022.131730

[13] Digital Europe Programme (2022) Digital Europe Programme. Available at: https://digital-strategy.ec.europa.eu/en/activities/digital-programme

[14] Digital Kazakhstan (2025) Digital Kazakhstan. Available at: https://www.gov.kz/memleket/entities/mdai/activities/14764

[15] Eichensehr KE & Hwang C (2023) National security creep in corporate transactions. Columbia Law Review 123(2), 549-614. https://www.jstor.org/stable/27204378

[16] European Commission (2022a) Cohesion policy in Bulgaria: The first 2021-2027 programme adopted. Available at: https://ec.europa.eu/regional_policy/en/newsroom/news/2022/10/10-03-2022-cohesion-policy-in-bulgaria-the-first-2021-2027-programme-adopted

[17] European Commission (2022b) EU cohesion policy: Commission adopts €11 billion partnership agreement with Bulgaria for 2021-2027. Available at: https://ec.europa.eu/regional_policy/en/newsroom/news/2022/07/07-06-2022-eu-cohesion-policy-commission-adopts-eur11-billion-partnership-agreement-with-bulgaria-for-2021-2027

[18] European Commission (2025) The EU offers emergency support to tackle the energy crisis in Moldova. Available at: https://ec.europa.eu/commission/presscorner/detail/pl/ip_25_329

[19] European Council (2022) Russian cyber operations against Ukraine: Declaration by the High Representative on behalf of the European Union. Available at: https://www.consilium.europa.eu/en/press/press-releases/2022/05/10/russian-cyber-operations-against-ukraine-declaration-by-the-high-representative-on-behalf-of-the-european-union/

[20] Eurostat (2025) Statistical themes. Available at: https://ec.europa.eu/eurostat/web/main/data/statistical-themes

[21] Faichuk O, Voliak L, Hutsol T, Glowacki S, Pantsyr Y, Slobodian S, Szeląg-Sikora A & Gródek-Szostak Z (2022) European Green Deal: Threats Assessment for Agri-Food Exporting Countries to the EU. Sustainability (Switzerland) 14(7), 3712. https://doi.org/10.3390/su14073712

[22] Folayan MO, Ibigbami O, El Tantawi M, Brown B, Aly NM, Ezechi O, Abeldaño GF, Ara E, Ayanore MA, Ellakany P, Gaffar B, Al-Khanati NM, Idigbe I, Ishabiyi AO, Jafer M, Khan AT, Khalid Z, Lawal FB, Lusher J, Nzimande NP, Osamika BE, Quadri MFA, Roque M, Al-Tammemi AB, Yousaf MA, Virtanen JI, Zuñiga RAA & Okeibunor JC (2021) Factors associated with financial security, food security and quality of daily lives of residents in Nigeria during the first wave of the COVID-19 pandemic. International Journal of Environmental Research and Public Health 18(15), 7925. https://doi.org/10.3390/ijerph18157925

[23] Gutarevych Y, Mateichyk V, Matijošius J, Rimkus A, Gritsuk I, Syrota O & Shuba Y (2020) Improving fuel economy of spark ignition engines applying the combined method of power regulation. Energies 13(5), 1076. https://doi.org/10.3390/en13051076

[24] Hallaert JJ (2020) Inequality, poverty, and social protection in Bulgaria. International Monetary Fund (IMF), Working Paper, WP/20/147. https://doi.org/10.2139/ssrn.3688532

[25] Hoorens S, Retter L, Lynch A, Frinking EJ, Nederveen F & Phillips WD (2020) Relationships between the economy and national security: Analysis and considerations for economic security policy in the Netherlands. RAND Europe. Available at: https://www.rand.org/pubs/research_reports/RR4287.html

[26] Hor KWC, Kydyrbek FA & Kukeyeva FT (2024) Rethinking regional integration: A comparative analysis of MERCOSUR and the EAEU. Bulletin of Kazakh Ablai Khan University of International Relations and World Languages. Series "International Relations and Regional Studies" 58(4). https://doi.org/10.48371/ISMO.2024.58.4.021

[27] Hussain M & Papastathopoulos A (2022) Organizational readiness for digital financial innovation and financial resilience. International Journal of Production Economics 243, 108326. https://doi.org/10.1016/j.ijpe.2021.108326

[28] Ibadoghlu G & Niftiyev I (2022) An assessment of the thirty year post-Soviet transition quality in Azerbaijan from an economic and social liberalization perspective. Journal of Life Economics 9(3), 129-146.

[29] Ilyassova S, Khamzin A, Buribayev Y, Khamzina Zh & Zhetpisov S (2025) Irregular migration in Kazakhstan: Challenges, consequences, and approaches to improving state regulation. Social and Legal Studios 8(1), 195-210. https://doi.org/10.32518/sals1.2025.195

[30] International Monetary Fund (IMF) (2025) International Financial Statistics (IFS). Available at: https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b

[31] International Monetary Fund (IMF) Country Information (2025) Country Information. Available at: https://www.imf.org/en/Countries

[32] Ivanov B (2020) Demographic shift of rural and non-rural areas in Bulgaria. In: Proceedings of the Scientific Conference "China-CEEC Cooperation and Development" (Parvanov H & Chankov G eds.), Bulgarian Center of Shanghai Jiao Tong University (SJTU), Shanghai, pp. 69-79.
[33] Jakubik P, Kerimkhulle S & Teleuova S (2017) How to anticipate recession via transport indices. Ekonomicky Casopis 65(10), 972-990. Available at: https://www.sav.sk/journals/uploads/1204140610%2017%20Jakubik%20a%20kol.%20+%20RS.pdf
[34] Kerimkhulle S, Koishybayeva M, Slanbekova A, Alimova Z, Baizakov N & Azieva G (2023) Created and Realization of a Demographic Population Model for a Small City. Proceedings on Engineering Sciences 5(3), 383-390. https://doi.org/10.24874/PES05.03.003
[35] Kerimkulov S, Teleuova S & Tazhbenova G (2015) Measuring chaotic and cyclic fluctuations of cass freight index: Expenditures. Actual Problems of Economics 171(9), 434-445.
[36] Khalil A, Abdelli MEA & Mogaji E (2022) Do digital technologies influence the relationship between the COVID-19 crisis and SMEs' resilience in developing countries? Journal of Open Innovation: Technology, Market, and Complexity 8(2), 100. https://doi.org/10.3390/joitmc8020100
[37] Khrystenko O, Potochylova I & Kertychak V (2025) Investment strategies for the development of agricultural formations in a crisis economy. Ukrainian Black Sea Region Agrarian Science 29(1), 30-44. https://doi.org/10.56407/bs.agrarian/1.2025.30
[38] Kot H, Wilczynska M, Salabura D, Dabek A & Walenia A (2024) Competitive position of the European Union member states with regard to socio-economic development according to the Human Development Index. Economics of Development 23(4), 38-47. https://doi.org/10.57111/econ/4.2024.38
[39] Krasivskyy O (2024) Development and evolution of European Union policy. Democratic Governance 17(2), 46-57. https://doi.org/10.56318/dg/2.2024.46
[40] Kudrenko I & Hall L (2024) Adoption of reusable transit packaging in US industries: a framework for enhanced sustainability. Review of Managerial Science. https://doi.org/10.1007/s11846-024-00826-1
[41] Lauristin M & Vihalemm P (2020) The political agenda during different periods of Estonian transformation: External and internal factors. In: Estonia's Transition to the EU: Twenty Years On, Routledge, London, pp. 1-27. https://doi.org/10.4324/9781003061243
[42] Le DT & Park H (2020) The impact of demographic change on economic growth. Singapore Economic Review 65(2), 471-484. https://doi.org/10.1142/S0217590819500401
[43] Lewin KM (2023) It is time to fix the low financing trap: Public spending on education revisited. Journal of International Cooperation in Education 25(1), 21-41. https://doi.org/10.1108/JICE-06-2022-0011
[44] Ma C (2020) Financial stability, growth and macroprudential policy. Journal of International Economics 122, 103259. https://doi.org/10.1016/j.jinteco.2019.103259
[45] Mamasydykov AA, Abdiev MZ, Attokurova GM & Abrakhmanov OE (2019) Development of export potential of processing companies on the cluster basis with the help of quality management. International Journal for Quality Research 13(4), 931-946. https://doi.org/10.24874/IJQR13.04-13
[46] Motkin A (2024) How are Ukraine, Moldova and Georgia mastering state digitalization? Available at: https://www.veridica.ro/ru/mneniya/kak-ukraina-moldova-i-gruziia-osvaivaiut-gosudarstvennuiu-cifrovizaciiu?utm
[47] Náplava R (2020) Institutional quality and income inequality: Evidence from post-soviet countries. European Journal of Business Science and Technology 6(2), 100-112. https://doi.org/10.11118/ejobsat.2020.007
[48] National Statistical Institute of Bulgaria (2025a) Demographic and social statistics. Available at: https://www.nsi.bg/en/content/767/demographic-and-social-statistics
[49] National Statistical Institute of Bulgaria (2025b) Migration. Available at: https://www.nsi.bg/en/content/3058/migration
[50] Palamarchuk I, Kiurchev S, Kiurcheva L & Verkholantseva V (2019) Analysis of main process characteristics of infrared drying in the moving layer of grain produce. Modern Development Paths of Agricultural Production: Trends and Innovations (pp. 317–322). Springer, Cham. https://doi.org/10.1007/978-3-030-14918-5_33
[51] Rangelova R (2024) The economic integration of Bulgaria in the European Union. Papers of BAS. Humanities and Social Sciences 11(1), 29-43. https://www.ceeol.com/search/article-detail?id=1286806
[52] Report News Agency (2025) ICT Sector of Azerbaijan: Digital economy as a new driver of sustainable development. Available at: https://report.az/ru/ikt/ikt-sektor-azerbajdzhana-cifrovaya-ekonomika-kak-novyj-drajver-ustojchivogo-razvitiya/
[53] Santagata M, Ivaldi E & Soliani R (2019) Development and governance in the ex-Soviet Union: An empirical inquiry. Social Indicators Research 141(1), 157-190. https://doi.org/10.1007/s11205-017-1815-x
[54] Shahini E, Misiuk M, Zakhodym M, Borkovska V & Koval N (2023a) Analysis of the economic efficiency of growing pigs for meat and its improvement. Scientific Horizons 26(6), 110-120. https://doi.org/10.48077/scihor6.2023.110
[55] Shahini E, Myalkovsky R, Nebaba K, Ivanyshyn O & Liubytska D (2023b) Economic and biological characteristics and productivity analysis of sunflower hybrids. Scientific Horizons 26(8), 83–95. https://doi.org/10.48077/scihor8.2023.83
[56] Silagadze A, Mekvabishvili E, Gaganidze G, Atanelishvili T & Chikviladze M (2024) Adaptation of the economic policies of the US, EU and post-Soviet countries to new realities of the global economy: A comparative analysis. Scientific Bulletin of Mukachevo State University. Series "Economics" 11(4), 106-119. https://doi.org/10.52566/msu-econ4.2024.106
[57] Sobotka T & Fürnkranz-Prskawetz A (2020) Demographic change in Central, Eastern and Southeastern Europe: Trends, determinants and challenges. In: 30 Years of Transition in Europe: Looking Back and Looking Beyond in CESEE Countries (Holzmann R, Ritzberger-Grünwald D & Schuberth H eds.), Edward Elgar Publishing, Cheltenham, pp. 196-222. https://doi.org/10.4337/9781839109508.00027
[58] Song CQ, Chang CP & Gong Q (2021) Economic growth, corruption, and financial development: Global evidence. Economic Modelling 94, 822-830. https://doi.org/10.1016/j.econmod.2020.02.022
[59] Soufi HR, Esfahanipour A & Shirazi MA (2022) A quantitative approach for analysis of macroeconomic resilience due to socio-economic shocks. Socio-Economic Planning Sciences 79, 101101. https://doi.org/10.1016/j.seps.2021.101101
[60] Spyromitros E & Panagiotidis M (2022) The impact of corruption on economic growth in developing countries and a comparative analysis of corruption measurement indicators. Cogent Economics & Finance 10(1), 2129368. https://doi.org/10.1080/23322039.2022.2129368
[61] Startup BG (2025) Startup BG. Available at: https://startup.bg/
[62] Statistical Committee of the Republic of Armenia (2025) Statistical Indicators. Available at: https://armstat.am/en/?nid=12&thid=demo&type=0&submit=%D0%9F%D0%BE%D0%B8%D1%81%D0%BA
[63] Strojny J, Krakowiak-Bal A, Knaga J & Kacorzyk P (2023) Energy security: A conceptual overview. Energies 16(13), 5042. https://doi.org/10.3390/en16135042
[64] Transparency International (2023) Corruption Perceptions Index. Available at: https://www.transparency.org/en/cpi/2023
[65] Transparency International (2024) Corruption Perceptions Index. Available at: https://www.transparency.org/en/cpi/2024
[66] Trusova NV, Hryvkivska OV, Kotvytska NM, Nesterenko SA, Yavorska TI & Kotyk OV (2021) Determinants of the innovative and investment development of agriculture. International Journal of Agricultural Extension 9(Special Issue), 81–100. https://doi.org/10.33687/ijae.009.00.3724
[67] Ulucak R & Khan SUD (2020) Determinants of the ecological footprint: Role of renewable energy, natural resources, and urbanization. Sustainable Cities and Society 54, 101996. https://doi.org/10.1016/j.scs.2019.101996
[68] United Nations (UN) (2024) UN E-Government Survey 2024. Available at: https://publicadministration.un.org/egovkb/en-us
[69] United Nations (UN) (2025) UN Databases. Available at: https://www.un.org/en/library/page/databases
[70] Uzenbaev RA, Mardalieva LA, Abdiev MZ, Umarov ST & Ergeshov KA (2019) Prospects for development of Kyrgyzstan's food market in the conditions of integration in the EAEU. Studies in Computational Intelligence 826, 859-869. https://doi.org/10.1007/978-3-030-13397-9_88
[71] Vakulenko V & Mattei G (2023) Reforming the public sector in Eastern European and former Soviet Union countries: A systematic literature review. Central European Journal of Public Policy 17(1), 55-79. https://doi.org/10.2478/cejpp-2023-0005

[72] Wang Q, Wang L & Li R (2023) Trade protectionism jeopardizes carbon neutrality – Decoupling and breakpoints roles of trade openness. Sustainable Production and Consumption 35(16), 201-215. https://doi.org/10.1016/j.spc.2022.08.034
[73] Wang Y, Umair M, Aizhan A, Teymurova V & Chang L (2024) Does the disparity between rural and urban incomes affect rural energy poverty? Energy Strategy Reviews 56, 101584. https://doi.org/10.1016/j.esr.2024.101584
[74] World Bank Group (WBG) (2025a) World Bank Data. Available at: https://data.worldbank.org/
[75] World Bank Group (WBG) (2025b) Central government debt, total (% of GDP) – Bulgaria. Available at: https://data.worldbank.org/indicator/GC.DOD.TOTL.GD.ZS?locations=BG
[76] Xu Z, Li Y, Chau SN, Dietz T, Li C, Wan L, Zhang J, Zhang L, Li Y, Chung MG & Liu J (2020) Impacts of international trade on global sustainable development. Nature Sustainability 3(11), 964-971. https://doi.org/10.1038/s41893-020-0572-z
[77] Yaheliuk S, Fomych M & Rechun O (2024) Global market trends of grain and industrial crops. Commodity Bulletin 17(1), 134-145. https://doi.org/10.62763/ef/1.2024.134
[78] Yanyshivskyi M (2024) Regulation of artificial intelligence in Ukraine in the framework of harmonisation of legislation with EU legal norms. Democratic Governance 17(1), 53-62. https://doi.org/10.23939/dg2024.53