

ECONOMIC DEVELOPMENT AND POLICIES: REALITIES AND PROSPECTS

EUROPEAN INTEGRATION, CONVERGENCE AND COHESION

COLLECTION OF ARTICLES

presented at the Jubilee International Conference 2024 dedicated
to the 75th Anniversary of the Economic Research Institute
at the Bulgarian Academy of Sciences
November 25th, 2024



BULGARIAN ACADEMY OF SCIENCES
ECONOMIC RESEARCH INSTITUTE



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ERI at BAS
Sofia * 2025

БЪЛГАРСКА АКАДЕМИЯ НА НАУКИТЕ
ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ



**ИКОНОМИЧЕСКО РАЗВИТИЕ И ПОЛИТИКИ:
РЕАЛНОСТИ И ПЕРСПЕКТИВИ**
***ЕВРОПЕЙСКА ИНТЕГРАЦИЯ, КОНВЕРГЕНЦИЯ
И КОХЕЗИЯ***

СБОРНИК СТАТИИ

представени на Юбилейна международна конференция 2024 посветена на 75-
годишнината на Института за икономически изследвания
при Българската академия на науките
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ИИИ при БАН
София * 2025

Collection of articles with results of completed and current projects on the theoretical and practical aspects of European integration, convergence and cohesion presented at the Jubilee International Conference 2024 dedicated to the 75th Anniversary of the Economic Research Institute at BAS “Economic Development and Policies: Realities and Prospects. European integration, convergence and cohesion”.

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Сборник статии с резултати от завършени и текущи проекти, свързани с теоретичните и практическите аспекти на европейската интеграция, конвергенция и кохезия, представени на Юбилейната международна конференция 2024, посветена на 75-годишнината на Института за икономически изследвания при БАН, на тема „Икономическо развитие и политики: реалности и перспективи. Европейска интеграция, конвергенция и кохезия“.

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CONTENTS / СЪДЪРЖАНИЕ

FOREWORD	8
ПРЕДГОВОР	9
 PLENARY SESSION / ПЛЕНАРНА СЕСИЯ	10
Rositsa Rangelova – <i>Концепции за конвергенция, кохезия и интеграция и реалностите в икономическото развитие на Европейския съюз</i> (Rossitsa Rangelova – <i>Concepts of Convergence, Cohesion and Integration and the Realities in Economic Development of the European Union</i>)	11
 CHALLENGES AND POLICIES FOR EUROPEAN INTEGRATION / ПРЕДИЗВИКАТЕЛСТВА И ПОЛИТИКИ ЗА ЕВРОПЕЙСКА ИНТЕГРАЦИЯ ...	30
Daniela Bobeva – <i>Is Nominal Convergence Supportive to the Real Convergence</i>	31
Tatiana Houbenova-Delisivkova – <i>EU Cohesion Policy: The Problems of Its Reform and the Challenges to the Bulgarian Economy</i>	39
Iskra Christova-Balkanska – <i>European strategies for Improving the Competitiveness of EU Industrial Production and Challenges in the Post-Pandemic Crisis Period</i>	45
Andrei Rădulescu – <i>Unprecedented Challenges for European Competitiveness</i>	50
Zvezdelina Zhelyazkova – <i>The New European Fiscal Framework – In Search of the Balance between Sustainable Public Finance and Public Investment</i>	57
Iana Paliova – <i>Fiscal Incentives for the Implementation of Circular Economy in the European Union</i>	63
Virginia Zhelyazkova – <i>Circular Economy in the EU Member States – Getting Closer or Growing Apart</i>	69
Alina-Cerasela Avram – <i>How Circular Economy Affects Flying</i>	75
Iulia Monica Oehler-Şincai – <i>Towards an EU “Foreign Economic Policy”</i>	81
Georgeta Ilie – <i>The Contribution of Trade in Services to European Integration</i>	86
Galateya Kolikova – <i>Regional Cooperation as a Competitive Advantage in Attracting Foreign Direct Investment: The Case of the European Union Member States from Northern Europe</i>	92
Tetiana Cherniavska, Alexander Sharashenidze, Maka Buleishvili – <i>Political and Economic Challenges for the Governments of Ukraine and Georgia in the Context of European Integration: Parallels and Differences</i>	97
Bohdan Cherniavskyi – <i>Challenges of Successful Remediation in Ukraine after the End of Military Activities in the Context of European Integration</i>	103
Paul Calanter – <i>The Impact of Sanctions on Russia's Oil and Gas Sector</i>	108
Ana-Cristina Bălgăr, Andreea-Emanuela Drăgoi – <i>The Seismic Shift in the Energy Trade between Germany and Russian Federation – A Consequence of the Current Geopolitical Turmoil</i>	116
Nikola Ganev – <i>Recent Economic Migration from Russia to Three Western Balkan Countries</i>	123
Atanas Pavlov – <i>Concept of Economic Sensitivity to Border Controls</i>	129

Antoniya Baltova – <i>Human Capital, Innovation Capacity and Economic Development in Eastern European Countries</i>	134
Dimitar Trendafilov – <i>The Start-Up Concept and the Economic Future of the EU after M. Draghi's Report</i>	142
Danko Tonev – <i>Bulgaria Lags behind Artificial Intelligence Integration within the EU Due to Insufficient Investment Effort</i>	151
Savina Nedyalkova – <i>Trust in Governments as a Factor in the Development of Blockchain Technologies in the European Union</i>	158

MACROECONOMIC AND SOCIAL DIMENSIONS OF THE MEMBERSHIP IN THE EUROPEAN UNION /

МАКРОИКОНОМИЧЕСКИ И СОЦИАЛНИ ИЗМЕРЕНИЯ НА ЧЛЕНСТВОТО В ЕВРОПЕЙСКИЯ СЪЮЗ

Виктор Йотцов – <i>Адаптиране на икономиката на България след присъединяването към ЕС: сравнителен анализ с други страни от Източна Европа</i> (Victor Yotzov – <i>Adaptation of Bulgaria's Economy after Accession to the EU: A Comparative Analysis with Other Eastern European Countries</i>)	166
Stela Raleva, Daniel Kasabov, Lidia Kabatliyska-Andonova – <i>Inflation Dynamics in Bulgaria: Role of Global and Domestic Factors</i>	172
Eduard Marinov – <i>Assessment of Bulgaria's Participation in the EU Common Trade Policy</i>	180
Sonya Georgieva – <i>The Green Transition as Part of the Mandate of Central Banks in Conducting Monetary Policy</i>	188
Tsvetomir Tsvetkov – <i>Social and Economic Effects of Bulgaria's European Union Membership</i>	195
Milen Velushev, Radostina Ivcheva-Georgieva – <i>Analysis of the Efficiency of the Labour Market in Bulgaria in the Period after the Accession to the European Union according to the Beveridge Curve</i>	202
Росица Стелиянова – <i>Модернизация на услугите по заетостта в България в контекста на европейския трудов пазар</i> (Rossitsa Steliyanova – <i>Modernization of Employment Services in Bulgaria in the Context of the European Labour Market</i>)	209
Ralitzia Pandurska – <i>Mobility as a Way of Life: Digital Nomadism and New Employment Perspectives</i>	216
Kristina Stefanova – <i>Trends in Public Expenditure on Education in Bulgaria in the Context of European Integration</i>	222
Simeonka Petrova – <i>Comparative Study of the Digital Shopping Skills of Consumers in the European Union: Influence of Economic and Demographic Factors</i>	230
Радосвета Кръстанова – <i>Let's tax the rich: екологичен преход, климатична (не)справедливост и социално-икономически неравенства в ЕС в светлината на Европейската гражданска инициатива</i> (Radosveta Krastanova – <i>Let's Tax the Rich: Ecological Transition, Climate (In)Justice and Socio-Economic Inequalities in the EU in the Light of the European Citizens' Initiative</i>)	236
Георги Шопов – <i>Гъвкавост на социалната подкрепа в условията на кризи (Уроци въз основа на опита в социалното подпомагане през пандемията COVID-19)</i> Georgi Shopov – <i>Social Flexsecurity in Crisis Conditions (Lessons Based on the Experience of Social Assistance during the COVID-19 Pandemic Period)</i>	242
Teodora Peneva – <i>Assessment of the Social Assistance in Kind in Bulgaria</i>	248

REGIONAL CONVERGENCE AND SECTORAL DEVELOPMENT / РЕГИОНАЛНА КОНВЕРГЕНЦИЯ И СЕКТОРНО РАЗВИТИЕ	254
Стоян Тотев – <i>Взаимозамисимост между икономически и демографски регионални показатели в България – очаквано развитие, регионална политика</i> (Stoyan Totev – <i>Interdependence between Economic and Demographic Regional Indicators in Bulgaria – Expected Development, Regional Policy</i>)	255
Dimitar Sabev – <i>A Way Out of the EU Periphery: Economic Sectors and Regional Economic Performance</i>	261
Vira Lebedchenko – <i>Regional Aspect of the Spread of Convergence Processes</i>	267
Yana Kirilova, Dochka Velkova – <i>Is a New Model for Financing Municipal Investments Needed in Bulgaria</i>	272
Неделин Марков – <i>Финансова устойчивост и приходен капацитет на местното самоуправление в България</i> (Nedelin Markov – <i>Financial Sustainability and Revenue Capacity of Local Self-Government in Bulgaria</i>)	280
Яни Димитров – <i>Териториални и секторни потребности като фактори за реализиране на плановете за интегрирано развитие на общини</i> (Yani Dimitrov – <i>Territorial and Sectoral Needs as Factors for Realizing Plans for Integrated Development of Municipalities</i>)	286
Мария Коцева-Тикова, Милкана Мочурова – <i>Кръгова и зелена икономика за устойчиво развитие</i> (Maria Kotseva-Tikova, Milkana Mochurova – <i>Circular and Green Economy for Sustainable Development</i>)	294
Anton Peychev – <i>EU Cohesion and Waste Management: Analysing Municipal Waste Performance through Economic and Policy Lenses</i>	301
Ivan Penov, Plamena Yovchevska, Mihaela Mihailova – <i>Motivation and Attitudes of Bulgarian Agricultural Producers in the Context of the Green Deal</i>	307
Violeta Blazheva – <i>Challenges to the Agricultural Sector in the Conditions of an Integrated European Policy</i>	315
Огнян Бююклиев – <i>Конвергенция и кохезия на аграрната политика на Република България в Европейския съюз</i> (Ognyan Boyukliev – <i>Convergence and Cohesion of the Agrarian Policy of the Republic of Bulgaria in the European Union</i>)	321
Petia Branzova, Annie Dimitrova – <i>Innovations in Agriculture as a Means for Sustainable Development of Regions in Bulgaria</i>	328
Anton Blagoev, Monika Kabadzhova – <i>Theoretical Aspects of Agroecological Practices in Bulgaria</i>	334
Росица Микова – <i>Особености на конкурентоспособността на маслodobивна и маслопреработвателна индустрия в България</i> (Rositza Mikova – <i>Features of the Competitiveness of the Oil Extraction and Oil Processing Industry in Bulgaria</i>)	339
Damyán Kirechev – <i>Impact of Production Costs on Profit Formation in Agricultural Holdings of Bulgaria</i>	346
Shteryo Nozharov, Petya Koralova-Nozharova – <i>Impact of the European Emissions Trading Scheme on the Development of the Bulgarian Aviation Sector</i>	353
Андрей Захариев, Ивелин Кичуков – <i>Ревитализация на туризма в България – икономически и финансови аспекти</i> (Andrey Zahariiev, Ivelin Kichukov – <i>Revitalization of Tourism in Bulgaria – Economic and Financial Aspects</i>)	359

THE COMPANIES IN THE CONDITIONS OF EUROPEAN INTEGRATION / ФИРМИТЕ В УСЛОВИЯТА НА ЕВРОПЕЙСКАТА ИНТЕГРАЦИЯ	366
Milena Angelova – <i>Assessment of the Bulgarian Non-Financial Enterprises' Preparedness for Successful Sustainability Transition</i>	367
Ivan Tsanov – <i>Bulgarian Entrepreneurship in the Context of European Integration</i>	373
Spartak Keremidchiev – <i>Unasked Questions about Business Corruption</i>	379
Daniela Ventsislavova Georgieva – <i>Impact of Global Value Chains on the Innovation Potential of Bulgarian Enterprises</i>	386
Adelina Milanova, Pavlinka Naydenova – <i>Socioeconomic Anthropology of Innovative Attitudes in the Context of Economic-Historical Determination</i>	392
Nedyalko Nestorov – <i>Features of the Export Activity of Bulgarian Companies</i>	398
Ирина Данаилова – <i>Дигитална трансформация в България – стратегически приоритети и перспективи</i> (Irina Danailova – <i>Digital Transformation in Bulgaria – Strategic Priorities and Perspectives</i>)	403
Simeon Lazarov, Mariya Tsoleva – <i>Digital Transformation Strategies in the Organization: The Impact of Research & Development as a Strategic Factor</i>	409
Добрин Иванов – <i>Теоретични аспекти на финансите на МСП при икономическа криза</i> (Dobrin Ivanov – <i>Theoretical Aspects of SME Finance in Economic Crisis</i>)	417
Milena Mitkova – <i>European Integration and the Need to Use Innovative Technologies in Accounting</i>	426

FOREWORD

The scientific collection *“ECONOMIC DEVELOPMENT AND POLICIES: REALITIES AND PROSPECTS. EUROPEAN INTEGRATION, CONVERGENCE AND COHESION”* includes articles presented at the Jubilee International Conference dedicated to the 75th Anniversary of the Economic Research Institute at BAS, held on November 25, 2024 in Sofia.

It was opened with a welcome speech by the Director of the Institute, Professor Irena Zareva-Zafirova. She noted that the studies of the integration of Bulgaria in the EU are a subject of special attention at the Institute. In recent years, the results of a number of projects related to the economic growth and convergence in the EU, Eurozone and the economic prospects for Bulgaria, impact of changes in the EU single market on the Bulgarian economy and others have been published. Results and data from a recent 2024 study "Analysis of the effects on the Bulgarian economy and citizens of accession to the Schengen area and the Eurozone" were used in the development of the Opinion of the European Economic and Social Committee "The cost of staying outside the Schengen area for the single market/Bulgaria and Romania". Prof. Zareva-Zafirova emphasized that the overcoming of the problems before the European integration requires combination of the administration, academic sphere and business to find adequate solutions for the acceleration and successful running of the processes of integration, convergence and cohesion.

The forum started with the keynote speech on the topic “Concepts of convergence, cohesion and integration and the realities in economic development of the European Union” by Prof. D.Sc. Rossitsa Rangelova. The ideas and views presented by the author and the audience reaction set the tone for further in-depth discussions in all the panel sessions included in the conference program.

Over 90 scientists, lecturers and Ph.D. students from the country and abroad took part in the conference. 69 presentations were shown, presenting results from recently implemented and ongoing research and applied scientific projects related to current trends, challenges and economic and social dimensions of the economic and societal development on national and international level in the context of the European integration, convergence and cohesion.

Among the participants as speakers, discussants and guests were researchers from the Bulgarian Academy of Sciences, the Agricultural Academy, the Romanian Academy, the Academy of Applied Sciences in Konin – Poland and the National Institute of Eastern Languages and Civilizations – France; lecturers, young scientists and Ph.D. students from 5 foreign universities in Lithuania, Georgia, Germany, Great Britain, as well as 9 higher education institutions in Bulgaria; representatives of the Ministry of Finance of Bulgaria, Bulgarian companies and the media.

A special guest at the conference was Professor Emeritus at the University of Munich John Komlos, who gave a presentation on the topic “Need for a Kuhnian paradigm shift in economics: a Case for Humanistic Economics”.

The scientific articles included in the collection reflect the thematic areas of the conference, systematized in five panel sessions: Plenary session with a markedly theoretical character; Challenges and policies for European integration; Macroeconomic and social dimensions of the membership in the European Union; Regional convergence and sectoral development; The companies in the conditions of European integration. The professional discussions in the respective sessions were moderated by colleagues from the Economic Research Institute - Prof. Mitko Dimitrov, Prof. Emil Panusheff, Prof. Daniela Bobeva, Prof. Plamen Tchipev, Prof. Pobeda Loukanova, Prof. Darina Ruscheva, Assoc. Prof. Dochka Velkova, Prof. Alexander Tashev.

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ПРЕДГОВОР

Научният сборник *„ИКОНОМИЧЕСКО РАЗВИТИЕ И ПОЛИТИКИ: РЕАЛНОСТИ И ПЕРСПЕКТИВИ. ЕВРОПЕЙСКА ИНТЕГРАЦИЯ, КОНВЕРГЕНЦИЯ И КОХЕЗИЯ“* включва статии, представени на Юбилейна международна конференция, посветена на 75-годишнината на Института за икономически изследвания при БАН, проведена на 25 ноември 2024 г. в София.

Конференцията бе открита с приветствено слово от Директора на Института проф. Ирена Зарева-Зафирова. В него тя отбеляза, че в Института се обръща приоритетно внимание на изследванията на интеграцията на България в ЕС. През последните години са публикувани резултати от редица проекти, свързани с въпросите на икономическия растеж и конвергенцията в ЕС, еврозоната и икономическите перспективи пред България, влиянието на промените на единния пазар на ЕС върху българската икономика и други. Резултати и данни от скорошно изследване от 2024 г. „Анализ за ефектите за българската икономика и гражданите от присъединяването към Шенгенското пространство и еврозоната“ са използвани при разработването на Становище на Европейския икономически и социален комитет „Цената на оставането извън Шенгенското пространство за единния пазар/България и Румъния“. Проф. Зарева-Зафирова подчерта, че преодоляването на проблемите пред европейската интеграция изисква обединяване на усилията и опита на администрацията, академичната сфера и бизнеса за намиране на адекватни решения за ускоряването и успешното протичане на процесите на интеграция, конвергенция и кохезия.

Форумът започна с пленарен доклад на тема „Концепции за конвергенция, кохезия и интеграция и реалностите в икономическото развитие на Европейския съюз“ на проф. д.ик.н. Росица Рангелова. Изложените от автора идеи и виждания и последвалото обсъждане в залата дадоха тон за по-нататъшна задълбочена дискусия във всички панелни сесии, включени в програмата на конференцията.

В научното събитие взеха участие над 90 учени, преподаватели и докторанти от страната и чужбина. Бяха направени 69 презентации, представящи резултати от завършени и текущи научноизследователски и научно-приложни проекти, свързани със съвременните тенденции, предизвикателства и икономически и социални измерения на икономическото и общественото развитие на национално и международно ниво в контекста на европейската интеграция, конвергенция и кохезия.

Сред участниците като лектори, дискусанти и гости бяха учени от Българската академия на науките, Селскостопанската академия, Румънската академия, Академията за приложни науки в Конин – Полша и Националният институт за източни езици и цивилизации – Франция, преподаватели, млади учени и докторанти от 5 чуждестранни университета в Литва, Грузия, Германия, Великобритания и 9 висши училища в България, представители на Министерството на финансите, българските фирми и медиите.

Специален гост на конференцията беше почетният професор от Мюнхенския университет Джон Комлос с презентация на тема „Необходимост от промяна на парадигмата на Кун в икономиката: на примера на хуманистичния икономикс“.

Включените в сборника научни статии отразяват тематичните направления на конференцията, систематизирани в пет панелни сесии: Пленарна сесия с подчертано теоретичен характер, Предизвикателства и политики за европейска интеграция; Макроикономически и социални измерения на членството в Европейския съюз; Регионална конвергенция и секторно развитие; Фирмите в условията на европейската интеграция. Професионалните дискусии в съответните сесии бяха модерирани от колеги от Института за икономически изследвания – проф. Митко Димитров, проф. Емил Панушев, проф. Даниела Бобева, проф. Пламен Чипев, проф. Победа Луканова, проф. Дарина Русчева, доц. Дочка Велкова и проф. Александър Тасев.

От съставителите

PLENARY SESSION

ПЛЕНАРНА СЕСИЯ

КОНЦЕПЦИИ ЗА КОНВЕРГЕНЦИЯ, КОХЕЗИЯ И ИНТЕГРАЦИЯ И РЕАЛНОСТИТЕ В ИКОНОМИЧЕСКОТО РАЗВИТИЕ НА ЕВРОПЕЙСКИЯ СЪЮЗ

CONCEPTS OF CONVERGENCE, COHESION AND INTEGRATION AND THE REALITIES IN ECONOMIC DEVELOPMENT OF THE EUROPEAN UNION

Резюме: Статията е подготвена като пленарен доклад за Юбилейната научна конференция 2024, посветена на 75-годишнината на Института за икономически изследвания при Българската академия на науките, на тема „Икономическо развитие и политики: реалности и перспективи. Европейска интеграция, конвергенция и кохезия“. Основната цел на доклада е да се представят теоретично трите понятия конвергенция, кохезия и интеграция и те да се илюстрират на примера на икономическото развитие на Европейския съюз през последните двадесет години.

Ключови думи: конвергенция; кохезия; интеграция; Европейски съюз

Abstract: The article was prepared as a keynote speech for the Jubilee scientific conference 2024 dedicated to the 75th anniversary of the Economic Research Institute at the Bulgarian Academy of Sciences titled „Economic Development and Policies: Realities and Prospects. European Integration, Convergence and Cohesion“. The main goal of the paper is to theoretically present the three concepts of convergence, cohesion and integration and to illustrate them on the example of the economic development of the European Union over the last twenty years.

Keywords: convergence; cohesion; integration; European Union

JEL: C32; F15; F63; K33; L51

1. Увод

В терминологията на Европейския съюз (ЕС) се употребяват основно три понятия, свързани с процесите на сближаване на държавите членки по икономическа и социална мощ – конвергенция, кохезия и интеграция. Нерядко обаче в публикации и експертизи се забелязва непрецизиране и дори смесване на понятията и с това се създава неяснота на резултатите и посланията. Това се случва или защото разграничаването им се подценява, или поради логическата свързаност и еднопосочна връзка между тях – по-голяма конвергенция е резултат и на по-голяма кохезия, а те водят до по-голяма интеграция между разглежданите страни. Критериите за тяхното изпълнение са взаимно свързани и взаимно обуславящи се. В по-общ смисъл, критериите за стабилност, присъединяване, конвергенция, кохезия, интеграция и т.н. са взаимно преплетени и най-често еднопосочни в действието си, поради което не винаги тези понятия могат да бъдат разграничавани отчетливо. Отграничаването им обаче би обогатило анализа. В доклада са представени теоретично трите понятия конвергенция, кохезия и интеграция и те са илюстрирани на примера на икономическото развитие на ЕС през последните двадесетина години.

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2. Конвергенция

Конвергенцията в неокласическия модел на икономическия растеж

Произходът на теоретичните основи на икономическата конвергенция се свързва с неокласическия модел на растеж на Р. Солоу (1956 г.), според който се очаква страните с по-нисък БВП на човек от населението (изоставащи) да растат по-бързо от развитите страни (напреднали) и по този начин да се приближат до тях. Това следва от разликата в съотношението капитал-труд и разликата, която се създава в производителността на капитала. В контекста на отворена икономика и с достатъчно висока мобилност на международните капиталови пазари би се създал капиталов поток от „богати“ държави (с ниска пределна производителност), насочен към „бедни“ страни (с висока пределна производителност).² Ако някои условия са изпълнени, хипотезата е, че неокласическият модел на растежа изразява икономическа конвергенция между страни и групи страни по отношение на темповете на икономически растеж.³ По този начин първоначалната разлика в капиталоемкостта ще има тенденция да намалява и дори да изчезва.⁴

На базата на математически анализ на неокласическия модел (Rangelova, 2008; Rangelova, 2021) са определени два вида хипотези за конвергенция, които изразяват различни явления: β -конвергенцията изучава *сближаването по отношение на темпа на растежа, динамиката на доходите в изучаваните страни*, а σ -конвергенцията изучава как се променя във времето *разпределението на дохода между отделните страни* в извадката. При нея се търси отговор на въпроса *дали конвергенцията в траекторията на растежа на страните води до по-малка дисперсия вътре в групата*. Макар двете концепции да са различни, те имат връзка помежду си. Може да се докаже, че β -конвергенцията е необходимо, но не достатъчно условие за σ -конвергенцията.

Теорията определя следните хипотези за конвергенция:

- безусловна (абсолютна) β -конвергенция, която е свързана с неокласическите теории и предполага бедните икономики да растат по-бързо от богатите и така в дългосрочен план да се осъществи конвергенция на доходите;
- условна β -конвергенция, при която се предполага, че всяка икономика клони към свое собствено балансирано развитие;
- клубна конвергенция, при която страни, които имат сходно първоначално равнище на доходи и близки структурни характеристики, формират клъстери и се приближават едни към други в дългосрочен план;
- σ -конвергенция, при която се отчита как се променя разсейването на доходите на човек от населението между наблюдаваните страни.

² Предполага се, че изменението в броя на населението и дела на спестяванията в БВП, или с други думи факторите, влияещи на спестяванията, са идентични за всички страни. Ако тези фактори не влияят еднакво, страните ще обособят различни стационарни състояния (steady states), но растежът на БВП на човек в отделните страни ще продължава да се доближава, защото новите технологии са въплътени в нови капиталови стоки и значението на натрупване на капитала нараства.

³ В съвременната икономическа литература и анализи се употребява и понятието догонване (catching-up).

⁴ Интересно е, че Солоу е смятал, че създава модел за изучаване само на динамиката на растежа в една страна и не е съзнавал, че това е модел, който обяснява различията в темповете на икономически растеж по страни.

Ролята на ендогенните модели за развитие на концепцията за конвергенция

Всъщност, основните допускания в неокласическия модел на растеж на Солоу се основават на производствената функция и те са: постоянен мащаб на производството, намаляваща пределна производителност на капитала, екзогенно определен технологичен прогрес и взаимозаменяемост на факторите на производството труд и капитал (Rangelova, 2008; Totev, 2010). Икономиката се разглежда като затворена система и в условията на съвършени пазари, което е невалидно за днешните условия на международно икономическо и търговско взаимодействие. Тези ограничения на модела не могат да обяснят защо някои страни растат по-бързо от други.

Ендогенните модели разглеждат икономическия растеж в условията на *отворени икономики*, включително под влиянието на протичащата глобализация в света, което предполага друг широк набор от променливи. Механизмът на тяхното създаване е *отхвърляне на предположението за намаляващата възвръщаемост от натрупването на капитал*, защото има *положителни външни ефекти от натрупването на капитал*, които *надвишават действието на отрицателните следствия от увеличаване на пропорцията капитал/труд (K/L)*. Затова пределната производителност на капитала не намалява с увеличаване на БВП на човек от населението. В резултат на това богатите остават богати, а бедните – бедни.

Предположението за нарастващата възвръщаемост на капитала отваря възможности за промени в политиката или предпочитанията, които влияят върху темпа на икономически растеж в дългосрочен план и съответно на конвергенцията. То предполага включване в моделите на растежа на показатели от други аспекти на финансовата, демографската и социалната системи, включително намаляване на неравенствата в доходите на населението и между държавите и подобряване на качеството на живот, ролята на институциите, околната среда и др.

Преходът от екзогенната теория към ендогенната се осъществява по **три канала**: (1) Търси се отражение на *преливащите (spill-over) ефекти* на знания като последица от натрупване на физически капитал; (2) Търси се начин за отразяване на ръста на производителността на труда чрез *натрупване на човешки капитал*, като се залага на това, че *има силна динамична връзка от образованието към произвеждания продукт*; (3) Търси се израз на постигане на по-високопродуктивни проекти чрез НИРД.

Понякога в процеса на натрупване на теоретични познания в науката определени предположения и мантри пускат толкова дълбоки корени в мисленето, че *почти никой не си дава сметка, че те са създадени само при определени теоретични предположения*. Неокласическата теория е силно критикувана. Въпреки това, тя нелогично преобладава сред преподаваните модели в повечето икономически факултети в света, а и преобладаващата част от научните изследвания се основават на нея. По този повод Търлуол отбелязва, че след толкова много критика е „мистерия как неокласическият модел на базата на този на Солоу продължава да доминира при обучението на икономисти по теория на растежа и вероятно е нужно социалните психолози да обяснят това” (Thirlwall, 2013, p. 34).

Подходи за изследване на конвергенцията

През последните десетилетия се развиват и прилагат идеи в духа на теориите на оптималните парични зони (Optimum Currency Area), както и по въпроса кои допълнителни условия могат да доведат до реална конвергенция между държавите членки на ЕС. Заедно с това, в различни научни публикации се появяват и анализират

различни *подходи* (видове, типове) за изследване на конвергенцията. Тези подходи се различават според разглеждания икономически сектор или икономически параметри.

Всеки подход сам по себе си е обширна тема, но тук са изброени най-популярните сред тях. Такива са: структурна конвергенция, конвергенция по основни икономически сектори, парична конвергенция, институционална конвергенция, конвергенция на бизнес-циклите, ценова конвергенция, регионална конвергенция и др.⁵

Основният въпрос, който не е намерил все още приемлив отговор, е не дали двата процеса конвергенция и дивергенция (нарастване на разликата в икономическото развитие) съществуват паралелно, което се наблюдава като факт, а да се изясни нарастването на различията или процесите на конвергенция – в кои периоди на икономическото развитие и кога се реализират в отделните страни (Totev, 2010).

Номинална и реална конвергенция в ЕС

Концепцията за *номинална конвергенция* между страните от ЕС се изразява в изпълнението на т.нар. критерии от Маастрихт.⁶ Въведени първоначално като механизъм за налагане на бюджетна дисциплина в ЕС, те по-късно стават условия за предварителна конвергенция и основни критерии за присъединяването към единната валута. Критериите включват пет основни изисквания:

1. *Инфлация* според хармонизирания индекс на потребителски цени – тя не бива да е по-висока от 1.5 пр.п. над осреднената стойност между трите държави членки с най-ниска инфлация.
2. *Бюджетен дефицит*, изразен като процент от БВП, не бива да надхвърля 3%. Правилото позволява дефицитът да надхвърля прага само при изключителни условия.
3. *Държавен дълг*, изразен като процент от БВП, който не бива да надхвърля 60%. В случай на низходящ икономически тренд, правилото позволява дълг над 60%, стига да се очаква в близко бъдеще той да падне под лимита.
4. *Дългосрочните лихвени проценти* (средната доходност по десетгодишни държавни облигации) не бива да надхвърлят с повече от 2 пр.п. осреднената стойност между трите страни членки с най-ниска инфлация.
5. *Стабилност на курса към еврото* – правилото за стабилност на курса е по-гъвкаво от останалите. Според него валутата на страната кандидат за членство не бива да е девалвирала значително през последните две години спрямо европейската валута. Отклонението може да варира в $\pm 15\%$ спрямо определения праг, с който валутата на съответната държава членка е влязла във Валутен механизъм II.

На практика изпълнението на изискванията за номинална конвергенция е различно в отделните страни, повлияно от редица специфични за тях фактори.⁷ Тук за пример е посочена динамиката на критерия за правителствения дълг в страните от еврозоната, където той нараства през разглеждания период и надвишава 60% от размера на БВП (Таблица 1). Ситуацията е особено обезпокоителна при Гърция, Италия, Франция,

⁵ По-подробно по въпроса вж. Rangelova et al., 2021, с. 39-52.

⁶ Критериите от Маастрихт са включени в приетия Договор за Европейски съюз, подписан на 07.02.1992 г. в град Маастрихт, Нидерландия, между членовете на Европейската икономическа общност (ЕИО), преименувана тогава в Европейски съюз (ЕС) и влизат в сила на 01.11.1993 г.

⁷ Същността, развитието и прилагането на критериите за номинална конвергенция (регулаторната рамка) в ЕС са разгледани в дълбочина от Даниела Бобева в Rangelova et al., 2023, с. 80-103.

Испания, Белгия (и Португалия), където надвишава 100%, както и другите страни, повлияна от редица специфични за тях фактори. Държавите с най-нисък дял на консолидиран правителствен дълг в ЕС са Естония и България, която все още не е член на еврозоната. Ниският процент на дълга е голямо постижение за България, но стои въпросът за нея доколко този относително малък дълг е ефективен за увеличаване на икономическия ѝ растеж и съответно за конвергенцията между страните.

Таблица 1. Динамика на правителствения дълг в държави членки на еврозоната, и България (% от БВП)

Държава членка	2001	2009	2012	2019	2023
ЕС-27 (от 2020)	65.7	75.9	85.2	77.8	87.1
Еврозона-19	68.3	80.5	91.3	84.2	88.7
Гърция	107.1	126.7	159.6	180.6	161.9
Италия	108.9	116.6	126.5	134.2	137.3
Франция	59.0	84.0	91.7	97.9	110.6
Испания	54.0	53.3	90.0	98.2	107.7
Белгия	108.2	100.2	104.8	97.6	105.2
Португалия	57.4	87.8	129.0	116.6	99.1
Австрия	66.7	79.9	81.9	70.6	77.8
Кипър	57.3	54.3	80.1	93.0	77.3
Финландия	43.4	44.1	57.7	64.9	75.8
Унгария	52.3	78.0	78.2	65.3	73.5
Словения	26.1	34.5	53.6	65.4	69.2
Германия	58.2	73.2	80.7	59.6	63.6
Хърватия	36.6	48.1	69.0	70.4	63.0
Естония	4.8	7.2	9.8	8.5	19.6
България	9.6	13.7	16.6	20.0	23.1

Източник: Eurostat, available at: <https://www.nsi.bg/bg/content/11476/>.

От 1992 г. досега икономическата политика на ЕС е фокусирана върху постигането на по-висока степен на номинална и реална конвергенция между неговите членове. На Икономическия и паричен съюз (ИПС) се залага като инструмент за постигане на интеграция на държавите членки в ЕС и цели, включващи „икономически и социален прогрес, високо ниво на заетост, балансирано и устойчиво развитие“ (както е посочено в член 2 от Договора за ЕС). Може да се каже, че номинална конвергенция беше повече или по-малко постигната, но какво се случва с реалната? Така изникват въпросите дали конвергенцията е естествена последица поради ефекта на „догонване“ на по-слабо развитите страни към по-развитите? Има ли и каква е връзката между номинална и реална конвергенция предвид политиката и наблюдаваните тенденции в рамките на ЕС?

Концепцията за реална конвергенция включва възможност за устойчиво нарастване на БВП през относително дълъг период, с достатъчно високи темпове за доближаване на степента на развитие на дадена икономика до тази на развития свят (Rangelova, 2021, pp. 3-26).

Връзката между номиналната и реалната конвергенция, или дали номиналната е условие за реална конвергенция не е заложена в документите на ЕК (Bobeva, 2017, pp. 15-38). Допуска се, че номиналната конвергенция постепенно води до реална конвергенция, благодарение на предимствата на макроикономическата стабилност – ценова стабилност и фискална дисциплина, премахването на риска от обменния курс, намаляването на несигурността и т.н. Дали такава връзка се доказва на практика?

Илюстрация на икономическата конвергенция в ЕС

През последните години се наблюдава забавяне на глобалната и европейската икономика и задълбочаване на регионалните проблеми. Най-общата картина, показваща равнището и динамиката на развитие на икономическото развитие в страните от ЕС-27, е представена чрез данните в Таблица 2. За еврозоната като цяло се отбелязва значително намаление на индекса на БВП на човек от населението през разглеждания период 2008-2023 г. С най-висок темп на растеж през целия период е Ирландия, което показва бързо овладяване на негативните ефекти от финансовата криза от 2008 г. Така страната се доближава до равнището на изключението (outlier) Люксембург, който досега винаги беше с индекс, много по-висок от 250, но за който се отчита намаление. Повечето от останалите високоразвити страни (с индекс над 100, тоест над средното за ЕС равнище) отбелязват намаление (с изключение на Дания), като по-чувствително е намалението при Финландия и Франция. Добро нарастване отбелязва Малта, при която равнището ѝ на икономическо развитие през 2019 г. надминава средното за ЕС-27. Страните, които трайно се отдалечават от средноевропейските равнища на БВП на човек от населението, са: Гърция, Испания, Кипър и Италия. Групата, състояща се от балтийските и други държави в СЕЕ, успяват да реализират значителен прираст през разглеждания период, макар и да остават с равнище на БВП на човек от населението под средното за ЕС-27 (Pavlova-Banova, Stoyanova, 2024). Румъния и Полша правят най-силен скок в икономическото си развитие. Значителен е напредъкът за Унгария и Хърватия. Най-нисък, макар и нарастващ индекс, е този за България (Фигура 1).⁸

Таблица 2. Индекси на БВП на човек от населението по СПС, ЕС27_2020 = 100

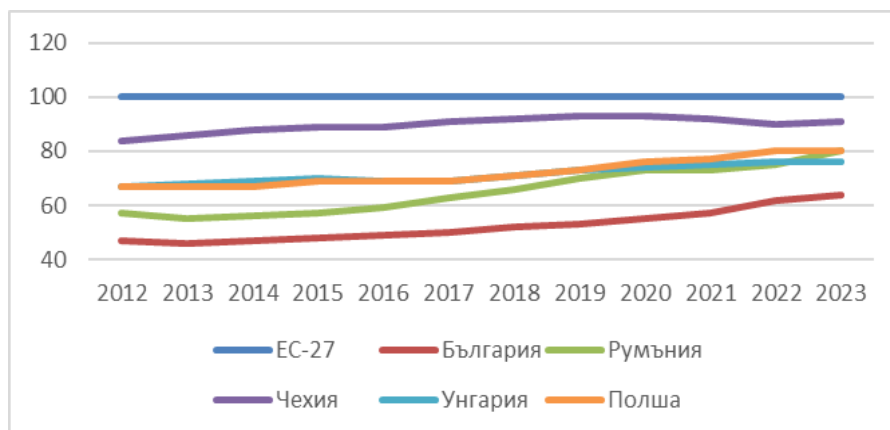
Страна	Индекси			Страна	Индекси			Страна	Индекси		
	2008	2019	2023		2008	2019	2023		2008	2019	2023
Еврозона-20 (от 2023)	110	106	104	Финландия	123	109	108	Португалия	82	79	83
				Малта	80	104	105	Естония	70	83	81
Люксембург	266	252	239	Франция	108	106	101	Румъния	52	70	80
Ирландия	136	189	211	Италия	108	97	97	Унгария	64	73	76
Нидерландия	143	127	130	Кипър	107	93	95	Хърватия	64	67	76
Дания	127	126	127	Чехия	85	93	91	Словакия	73	71	73
Австрия	127	126	123	Словения	91	89	91	Латвия	60	69	71
Швеция	129	118	114	Испания	102	91	88	Гърция	95	66	67
Белгия	116	118	118	Полша	56	73	89	България	43	53	64
Германия	118	121	115	Литва	64	84	86	Обединено кралство	113	104	98

Източник: Eurostat,

<https://ec.europa.eu/eurostat/databrowser/view/tec00114/default/table?lang=en%20%D0%B8>.

⁸ Интересен анализ на развитието на страни от ЦИЕ двадесет години след присъединяването им в ЕС е направен от румънския колега А. Радулеску (Radulescu, 2024). Той изтъква, че предвид голямата роля на технологичния прогрес и средствата за опазване на околната среда и необходимостта от огромни капитали, конвергенцията за тези страни може да се затрудни. Освен това се препоръчва ЕС да разшири бизнеса си с Азия, Африка и Латинска Америка.

Фигура 1. Динамика на БВП на човек от населението по СПС в избрани страни от ЦИЕ, 1995-2023 (ЕС средно = 100)



Източник: Eurostat,

<https://ec.europa.eu/eurostat/databrowser/view/tec00114/default/table?lang=en%20%D0%B8>.

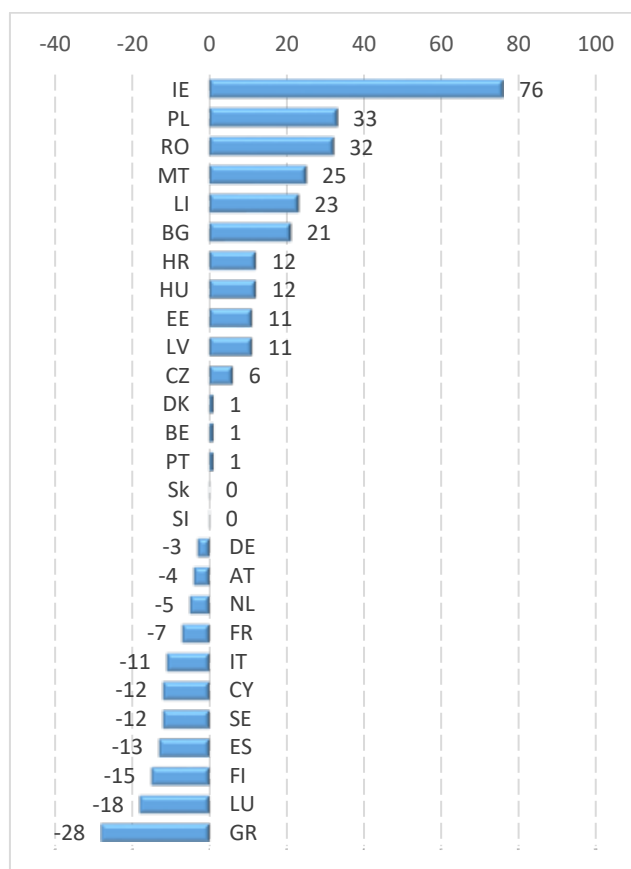
В началото на разглеждания период (последните двадесетина години) номиналната стабилност и конвергенцията в ЕС бяха задоволителни, особено през годините преди кризата от 2008 г. В повечето страни инфлацията беше много близка до определената от ЕЦБ цел от 2%. Тази среда насърчаваше огромни капиталови потоци от „центъра“ към „периферията“, благоприятствани от изчезването на валутния риск и частните потоци от капитал в еврозоната, които заместваха липсващия централизиран публичен бюджет и допринасяха за бърз икономически растеж. Малко по-висока инфлация беше регистрирана в по-бързо развиващите се тогава страни като Ирландия, Испания, Гърция и др.⁹ Световната финансова и икономическа криза от 2008 г., тоест Голямата рецесия, беше последвана от дългова криза, прераснала в стагнация, която породила съмнения относно валидността на съдържанието на ИПС (Фигура 2).

След сравнително спокойното второ десетилетие на XXI век, ЕС неочаквано се сблъска с големите здравни, икономически и социални предизвикателства, породени от пандемията COVID-19, когато се наложи да взема бързи и адекватни решения и действия, да насърчава икономическото възстановяване и в същото време да подкрепя предвидения двоен зелен и цифров преход.¹⁰ Кризата осветли непълната институционална архитектура на ЕС и разкри, че общественото мнение очаква от него да постигне положителни резултати при извънредни ситуации. Други базови въпроси, стоящи пред институционалната политика, са за разпределението и контрола на европейските фондове като институция за финансовите отношения, както и за незадоволителния контрол върху тях, основаващ се на принципа за върховенството на закона.

⁹ Тази среда обаче прикриваше нарастващите (търговски и дългови) дисбаланси в посочваните страни, които бяха наречени групата PIGS. Отражение на различната инфлационна динамика беше, че краткосрочният лихвен процент, определен от ЕЦБ, причини по-ниски реални лихвени проценти в податливи на инфлацията страни и така стимулира инвестициите в нетъргуеми дейности, както и създаването на балони на активи и жилища. Крайното значение беше „структурна дивергенция“, тъй като „периферията“ се специализира все повече – преди световната криза – в нетъргуеми дейности и строителство, докато центърът разчиташе на износ и търгуеми дейности – производство и услуги (Buti, Turrini, 2015).

¹⁰ Наред с изследването на β -конвергенцията между държавите от ЕС, подробен и систематизиран икономически анализ на разглеждания период е направен от Д. Златинов във втора глава на колективната монография Rangelova et al., 2021, с. 55-106.

Фигура 2. Изменение на индекса на БВП на човек от населението по СПС през 2023 спрямо 2008 г. (пр.п.)



Източник: Евростат (2024).

Въз основа на изследването във втора глава на цитираната монография са направени редица ценни и обосновани изводи, част от които са¹¹:

- В ЕС се наблюдава β -конвергенция, която се поражда от по-бърз икономически растеж в нискодоходните държави. За България този растеж не е достатъчен.
- Връзката между конвергенция и макроикономически дисбаланси не е еднозначна и не води непременно до засилване на реалната конвергенция. Европейската политика приоритетно отдава внимание на клубна конвергенция, най-вече в рамките на еврозоната.
- Не може да се твърди, че приемането на еврото благоприятства тенденциите за конвергенция. Ясно се очертават процесите на дивергенция между страните от еврозоната.
- И още може да се добави: Влизането на страните от Централна и Източна Европа (ЦИЕ) в ЕС подпомогна икономическото им приближаване към равнището на развитие в страните от Западна Европа, въпреки че икономическото разстояние между двете групи страни остава голямо. Конвергенцията се осъществява със значителни разлики между икономиките от ЦИЕ. Както отбелязва А. Радулеску, процесът на европейска икономическа конвергенция не е еднопосочна магистрала, което се вижда от динамиката в няколко страни от ЦИЕ (включително Чехия, Словакия и Словения)

¹¹ Пак там, с. 104-106.

след настъпването на глобалните кризи (Голяма финансова криза, коронавирусна пандемия и засилване на геополитическото напрежение – всички шокове със симетрично въздействие, но асиметрични последици за страните по света и в Европа). При това скоростта на европейската икономическа конвергенция намаля в страните от ЦИЕ през периода след пандемията (Radulescu, 2024).

- Разгледано в дългосрочен план се забелязва, че реалната икономическа конвергенция не е гарантирана нито в ЕС, нито в еврозоната поради липсата на адекватни фискални политики, трансфери за подпомагане на изоставащите региони и държави, както и стимули за въвеждане на структурни реформи. Структурните фондове на ЕС (Кохезионният фонд и Европейският фонд за регионално развитие) не са ефективни поради ограничените ресурси и тяхното неправилно използване. Ценни дългосрочни планове, като Лисабонската стратегия, последвалата я Стратегия „Европа 2020“ и др., се провалиха в много области.
- Възникването на големи икономически сътресения и липсата на адекватни механизми за приспособяване драстично увеличават социално-икономическите различия.

В наше време се насърчава включването в ЕС на страни кандидати от т.нар. Западни Балкани и по-далечни територии. Равнището на икономическо развитие на тези страни е по-ниско от стартовото на приетите вече държави членки от ЦИЕ – индексите на БВП на човек от населението по СПС за 2023 г. са съответно 52 – за Черна гора, 46 – за Сърбия, 41 – за РСМ, 35 – за Албания и Босна и Херцеговина. С тяхното присъединяване ЕС ще стане още по-разнороден, по-нестабилен и зареден с вътрешни противоречия, което несъмнено би повлияло на конвергенцията в тази общност.

3. Кохезия

Понятието кохезия¹² е тясно свързано с политиката на ЕС. Основната част от финансирането на кохезионната политика е насочена към по-слаборазвитите страни и райони (чрез участие и съфинансиране от националния бюджет) с цел да им се помогне да намалят икономическите, социалните и териториалните различия, които съществуват в Съюза.

Според Европейската комисия, „кохезионната политика е в основата на философията за изграждане на Европейската общност. Тази политика прилага инвестиционни инструменти за намаляване на регионалните различия в рамките на ЕС главно чрез Европейския фонд за регионално развитие – ЕФРР (43%) и Кохезионния фонд – КФ (13%)“ (European Commission, 2014). Политиката на сближаване е вторият по големина дял в разходите на ЕС. По данни на ЕК от 2021-2027 г. са предвидени разходи за ОСП в размер на 378.5 млрд. евро, за кохезионна политика – 372.6 млрд. евро и други политики – 459.8 млрд. евро. За сравнение, през периода на планиране 2014-2020 г. тези разходи са били по-малко.¹³

¹² Думата кохезия (cohesion, от латински слепвам) буквално означава сила на привличане, на сцепление между молекулите на едно вещество. Затова и появата му е станала най-напред във физиката и химията.

¹³ До 2020 г. ЕС се стреми да постигне пет конкретни цели – относно заетостта, иновациите, образованието, социалната политика и социалното включване и климат/енергия. Всяка държава членка е приела свои национални цели в тези области. За да се постигнат тези цели и да се отговори на потребностите за развитие във всички региони на ЕС, за кохезионната политика за периода 2014-2020 г. са заделени 351.8 млрд. евро – почти 1/3 от общия бюджет на ЕС (Стратегия „Европа 2020“ – ec.europa.eu/eu2020; Cohesion Fund 2014-2020, available at: https://ec.europa.eu/regional_policy/funding/cohesion-fund/2014-2020_en, date accessed 9 December 2024).

Кохезионната политика е основната инвестиционна политика за изграждане на Европейската общност. По-специално, кохезионната политика предоставя необходимата инвестиционна рамка и стратегия за постигане на договорените цели за растеж. Тя е насочена към всички райони и градове, за да подпомогне създаването на работни места, конкурентоспособността на бизнеса, икономическия растеж, устойчивото развитие и да подобри качеството на живот на гражданите. Инвестициите спомагат за постигането на много други цели на политиката на ЕС като тези, които се занимават с образование, заетост, енергетика, околна среда, единен пазар, научни изследвания и иновации. Затова кохезионната политика е в основата на европейската солидарност.

В основата си политиката на сближаване се опитва да балансира несъответствието между ефективност и справедливост в рамките на единния пазар. Опитът обаче показва, че регионалните различия не се повлияват по най-ефективния начин, въпреки усилията и финансовите ресурси. Политиката на сближаване започна да действа като резервен източник за други политики. Например, тя трябва да играе ключова роля в изпълнението на Зелената сделка, като осигурява преход, който се възприема като справедлив за региони, подпомагани по различни начини чрез Фонда за справедлив преход. За тази цел според Изследователската служба на Европейския парламент (2021) най-малко 30% от финансовите средства по кохезионното финансиране са предназначени за зеления преход. Освен това, в отговор на геополитически предизвикателства като войната в Украйна, политиката на сближаване беше използвана, за да осигури достъпни цени на енергията и да подпомогне интеграцията на бежанците.

Кохезия – икономическа и социална

Понятието кохезия в ЕС се разглежда теоретично и в научната литература като икономическо и повече като социално понятие. Някои автори с основание разглеждат **икономическата кохезия** като елемент на икономическата интеграция. Залага се на това, че колкото по-голямо сходство има в отделните показатели между националните икономики, толкова по-голяма е кохезията между тях в европейското икономическо пространство. Така дефинираната икономическа кохезия прилича и се смесва с икономическата конвергенция.

Социалната кохезия се дефинира като „подход и процес на сближаване и приобщаване в обществото, основаващ се на преодоляване на неравенството, несправедливостта, маргинализирането и социалното изключване на определени индивиди и групи. Социалната кохезия не може да реши и премахне социалните проблеми, но има за цел да смекчи социалните контрасти и да отслаби икономическата тежест върху социално слабите“.¹⁴ Социалната кохезия може да се разглежда като функция на икономическата кохезия. Логично е да се смята, че колкото по-голяма е икономическата кохезия и е по-сходна структурата на икономиките на разглежданите страни, толкова по-сходна е и структурата на доходите. Според нас обаче трябва да се прецизира за какви структури става дума и доколкото в случая играят роля различни и разнопосочно действащи фактори.

В някои източници като трети вид кохезия се разглежда **териториалната**. Според нас тя е много важна, но се основава на икономическата и социалната кохезия и не може да бъде техен равностоен вид, защото ги включва.

¹⁴ Вж. Тълковен речник. Налично на: <http://rechnik.info/%D1%81%D0%BE%D1%86%D0%B8%D0%B0%D0%BB%D0%BD%D0%B0+%D0%BA%D0%BE%D1%85%D0%B5%D0%B7%D0%B8%D1%8F>.

В Евростат се проследяват състоянието и промените в социалната сфера в страните от ЕС¹⁵ и на тази база се предприемат определени политики. Основният финансов инструмент за сближаване между отделните държави членки на ЕС е Кохезионният фонд (CF), учреден през 1993 г., който предоставя финансова помощ по проекти в областта на околната среда и транспортната инфраструктура в по-бедните региони в държавите членки с БВП по-малък от 90% от средния за ЕС. В бюджета на кохезионните фондове за периода 2021-2027 г. за този фонд са предвидени 42.6 млрд. евро. Целта е тези държави да намалят своето икономическо и социално изоставане, както и да стабилизират икономиката си. Този фонд е подчинен на същите правила за програмиране, управление и контрол като на Европейския социален фонд (ЕСФ+), който се концентрира върху развитието на човешкия капитал и социалните аспекти. За него са заделени 99.3 млрд. евро. Европейският фонд за регионално развитие (ERDF) е със заделен фонд от 226 млрд. евро и служи за инвестиции за конкурентоспособност, иновации, зелен преход и европейско териториално сътрудничество. Европейският земеделски фонд за развитие на селските райони (EFRD) е със заделен фонд от 95.5 млрд. евро и допринася за регионалното развитие в селските райони, част от Общата селскостопанска политика (ОСП). Фондът за справедлив преход (JTF) със заделен фонд от 17.5 млрд. евро подкрепя изпълнението на Зелената сделка, Европейския фонд за морско дело, рибарство и аквакултури (EMFAF), както и предстоящия социален климатичен фонд (SCF).

Политиката на сближаване работи чрез шест отделни фонда, всеки с няколко мисии (някои припокриващи се) и множество регулации, администрирани и разпределени чрез десетки инструменти и стотици регионални програми. Тази сложност и разпокъсаност налага огромна тежест върху стратегическото програмиране и напредъка на ниво ЕС. За разлика от тях, Механизмът за възстановяване и устойчивост работи с единен бюджет и интегрирани планове, създадени от държавите членки, опростявайки цялостното управление и позволявайки по-лесно финансиране за широкомащабни проекти.

Опитът обаче показва, че регионалните различия не се повлияват по най-ефективния начин, въпреки усилията и финансовите ресурси, които по данни на ЕК (2014) за периода на планиране 2014-2020 г. възлизат на 32.5% от общия бюджет на общността, или, както се отбелязва 351.8 млрд. евро (European Commission, 2014).

Съществуващите финансови проблеми в ЕС и сложният геополитически пейзаж показваха необходимостта от преосмисляне на бюджета на ЕС за управление на кризи и нарастващи изисквания за разходи. Става дума за преосмисляне на политиката на сближаване, която има втората най-голяма разходна позиция в бюджета на ЕС. Действителността налага да се подобрява разпределението и ефективността от използване на кохезионните фондове. Дискусията, която се води днес, свързана със законодателния цикъл на ЕС и преговорите за бъдещия бюджет, които трябва да започнат следващата година, обхваща четири области (Schwab, 2024) и те са: мисията на политиката на сближаване; финанси и икономика; оптимален дизайн на политиката, особено в светлината на Механизма за възстановяване и устойчивост; синергии с други политики.

¹⁵ Основните разглеждани в ЕС показатели, свързани с измерване на социалната кохезия, се намират на сайта на Евростат под рубриката „Income and Living Conditions“. Такива са: относителен дял на бедните по пол и възрастови групи, относителен дял на бедните по икономическа активност и по пол (за лица на 18 и повече години), процент от населението, живеещо с материални лишения по възраст и пол и др. Налично на: <https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions>.

Перспективи пред развитието на кохезионната политика

На темата за положителна промяна на политиката на сближаване е посветен анализ на експерти от Центъра за европейски политически изследвания (CEPS). Те обосновават виждането си, че бъдещите дискусии за многогодишната финансова рамка (МФР) следва да се *съсредоточат върху преразпределението на съществуващите средства, а не върху разширяването на бюджета на ЕС*. Дългосрочният, определящ акцент върху инвестициите като основна цел на политиката на сближаване е поставен пред предизвикателство, което се изразява в необходимостта тя се адаптира, за да реагира на евентуални кризи. Потенциалната му роля във финансирането на нови приоритети на ЕС може да доведе до сблъсък на цели и отклонение от основните му цели. *Освен това, намаляващите нива на усвояване и припокриването с Механизма за възстановяване и устойчивост породиха опасения за неговата ефективност* (Rubio et al., 2024).

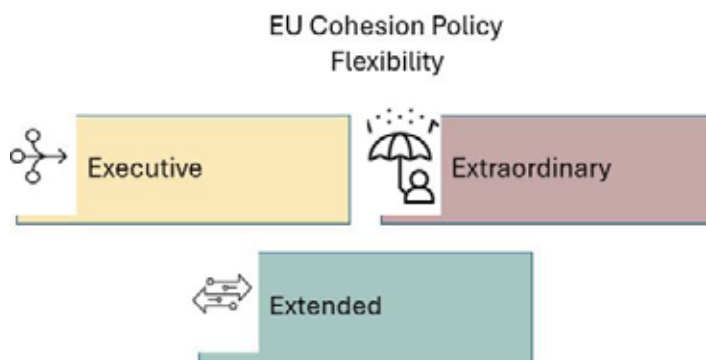
Експертите от CEPS защитават мнението, че повишаването на гъвкавостта на политиката на сближаване може да направи фондовете на ЕС по-ефикасни и ефективни при посрещането на възникващи нужди, като същевременно запазват основните си цели. С този документ цитираните експерти от CEPS се надяват да допринесат за дискусията за бъдещето на политиката на сближаване чрез изследване на настоящите предизвикателства, а също да се дадат обосновки за подобряване на бюджетната гъвкавост и формулиране на опции за нейното прилагане. Хоризонтът на изследване на политиката на сближаване е след 2027 г., като въпросът по-конкретно е как може да се повиши гъвкавостта.

Основната идея на експертите от CEPS е, че повишаването на гъвкавостта в различните измерения на политиката на сближаване може да осигури значителна свобода на действие, за да станат фондовете на ЕС по-ефективни и ефикасни при посрещането на нуждите на ЕС. Ключовите въпроси според тях включват: балансиране на използването на фондовете за реакция при кризи с фокус върху дългосрочни цели; бъдещия подход на управление и разпределение; ролята на политиката в подкрепа на новите инвестиционни приоритети на ЕС и как политиката да стане по-ефективна чрез опростяване на правилата, като по този начин се намали административната тежест и се засили административният капацитет.

Експертите смятат, че гъвкавостта в политиката на сближаване е предизвикана или използвана в *три различни аспекта* (Фигура 3). Необходимостта от опростяване на правилата за сближаване за управляващите органи е насочена към повишаване на гъвкавостта на *изпълнителната власт* (executive). Гъвкавостта при преразпределянето на средства между програми и региони, както беше приложена по време на пандемията COVID-19, за да се предложи отговор на кризата, е в контекста на *изключителна гъвкавост* (extraprdinary). И накрая, наскоро беше въведена гъвкавост при пренасочване на средства към нови стратегически приоритети поради съображения за икономическа сигурност, което авторите наричат *разширена гъвкавост* (extended). Всеки от тези видове гъвкавост, освен предимства, има и ограничения. Това несъмнено би породило липса на консенсус при определянето им за следващия програмен период. Приносът на експертите на CEPS е, че предлагат набор от опции за подобряване на тези три различни вида гъвкавост в политиката на сближаване.

По трите аспекта за подобряване на гъвкавостта в политиката за сближаване авторите предлагат конкретни мерки, описани в Таблица 3.

Фигура 3. Видове гъвкавост в политиката за сближаване, предложени от CEPS



Източник: Rubio et al., 2024.

Таблица 3. Мерки за повишаване на гъвкавостта на политиката на сближаване

Executive (изпълнителна)	Extended (разширена)	Extraordinary (изключителна)
Намаление на броя на фондовете на ЕС и хармонизация на специфичните за фондовете регулации	Създаване на „базирани на място“ тематични инициативи от национални пакети за сближаване	Кризисни резерви в националните пакети за сближаване
Опростяване на прилагането на кохезионните фондове на ЕС	„Рециклиране“ на отменени задължения за финансиране на нови инвестиционни приоритети на ЕС*	Реформиране на член 20 от Регламента за общите разпоредби (Common Provisions Regulation)**
	Задължителни трансфери към някои програми на ниво ЕС	

* Един вариант за пренасочване на кохезионните фондове на ЕС в подкрепа на новите инвестиционни приоритети на ЕС може да бъде премахването на по-висок процент от ресурсите на политиката на сближаване от националните пакети и използването им за подкрепа на тематични инициативи на ЕС.

** Този член позволява на Комисията да активира временни мерки (до 18 месеца) при изключителни или необичайни обстоятелства.

Източник: Rubio et al., 2024.

Степента на *изпълнителна гъвкавост*, която държавите членки имат при прилагането на своите разпределения за споделено управление, може да подобри капацитета на националните и поднационалните органи за прилагане на кохезионните фондове. По-голяма гъвкавост може да бъде постигната чрез опростяване на правилата и процедурите при използването на кохезионните фондове, както и чрез намаляване на броя на фондовете и чрез хармонизиране на изпълнението на фондовете на ЕС.

Повишената *изключителна гъвкавост* по време на криза може да насърчи капацитета на ЕС да реагира на потенциално по-чести кризи. Това може да се постигне чрез разширяване на член 20 от Регламента за общите разпоредби – за активиране на временни мерки поради изключителни или необичайни обстоятелства – и чрез създаване на резерви за кризи в националните пакети. Лесното обвързване с условия следва да гарантира, че краткосрочните цели за подпомагане няма да се отклоняват от дългосрочните цели за сближаване.

Увеличаването на *разширената гъвкавост* може да позволи на ЕС да подкрепи нови приоритети. Въпреки че опитът с тази форма на гъвкавост е много ограничен, тя може да стане по-търсена с появата на нови инвестиционни приоритети. Вариантите за повишаване на тази гъвкавост за насърчаване на нови приоритети като конкурентоспособността и растежа на ЕС, включват създаване на „базирани на място“ тематични инициативи в рамките на националните пакети, позволяващи на държавите

членки да „рециклират“ освободени средства и да налагат целеви задължителни трансфери към ниво ЕС програми, заедно с интелигентни стимули за преразпределяне на средства.

Предложеният подход според нас съдържа базови елементи по подобряване на политиката на сближаване, които са добра основа за по-нататъшна работа в тази област, но се нуждаят от по-нататъшно развитие.

4. Интеграция

Понятието интеграция има най-широк смисъл в сравнение с двете други разглеждани понятия – конвергенция и кохезия. Европейската интеграция е процес на взаимодействие между икономическите, социалните и политическите институции на държавите в Европа. Тя се разглежда като процес на засилване на политическото, юридическото, икономическото и дори общественото и културното взаимодействие на европейските държави, в това число и на държави, частично или близко разположени до Европа.

Институционална интеграция

Институционалната интеграция в рамките на ЕС се осъществява в съответствие с определени двустранни или многостранни договори, които изразяват интересите и очакванията на отделните държави членки. Тези документи трябва да са съобразени, освен с конкретни международно установени икономически норми, но и със съответните правила в сферата на международното сътрудничество, определени от международни организации като ООН, СТО, МВФ и др., в широк обсег на човешките отношения като демокрация, световна сигурност, околна среда, защита на правата на човека и т.н.

Договорът за ЕС определя условията (член 49) и принципите (член 6), на които трябва да отговаря всяка държава, желаеща да се присъедини към и да се интегрира в ЕС. Европейският съвет определи критерии в Копенхаген през 1993 г. (известни като Критерии от Копенхаген), които бяха доразвити на заседанието в Мадрид през 1995 г. Те биха могли да бъдат разделени в три групи – политически, икономически и административен капацитет. Тези условия са следните:

- стабилност на институциите, гарантиращи демокрацията, върховенството на закона, човешките права и закрилата на малцинствата;
- съществуване на функционираща пазарна икономика и способност за издържане на конкурентния натиск и пазарните сили в рамките на ЕС;
- способност за изпълнение на задълженията на членството, включително готовност за придържане към целта за икономически и валутен съюз, известен като Еврозона.

Освен това, критериите за членство изискват страните кандидатки да създадат условия за *интегрирането си* в ЕС чрез приспособяване на *административните си структури*. Това изискване беше въведено от Европейския съвет в Мадрид през декември 1995 г. То се отнася до способността на страните кандидатки не само да приемат, но и да прилагат ефективно хармонизираното европейско законодателство чрез съответните

административни и съдебни структури. Всички тези критерии бяха утвърдени като задължителни с Договора от Амстердам от 1997 г.¹⁶

За да започнат преговори за присъединяване към ЕС, страните кандидатки трябваше да отговарят на политическите (първата група) критерии, като се предполага, че ще продължат усилията си към изпълнение и на другите критерии до пълна интеграция.

Формулировката на критериите показва, че *по характера си те са тълкувателни, а не зададени с параметри, както е при политиката за номиналната конвергенция*. Оценката за изпълнението им се осъществява на базата на множество показатели за всяка страна, но има възможност за субективно разглеждане и оценка.¹⁷

Дори и днес, 20 години след присъединяването си, някои от държавите членки на ЕС от ЦИЕ не отговарят напълно на изброените по-горе Копенхагенски критерии и условия. Новоприсъединилите се държави бяха приети в ЕС доброжелателно и насърчително, но и по стратегически геополитически причини. Важно предизвикателство на ЕС с разширяването през XXI век досега от гледна точка на конвергенцията, кохезията и интеграцията беше присъединяване на неподготвени, по-слабо развити и неконкурентоспособни страни от ЦИЕ. Дори и при постигнат значителен успех на повечето от тези страни, *сравнително икономически хомогенният ЕС си остана разнороден*.

Предстои включването в ЕС на страни кандидати от т.нар. Западни Балкани и други страни. Приемането на всички или на някои от тях ще представлява силно предизвикателство пред ЕС поради увеличаване на разнородността между тях и засилване на нестабилността, заредена с вътрешни противоречия, което несъмнено би повлияло на интеграцията в тази общност.

Икономическа интеграция

Най-общо казано, **икономическата интеграция** изразява нарастващо икономическо взаимодействие между държавите. Тя включва премахване на дискриминационните бариери в търговията между засегнатите страни, развитие и задълбочаване на сътрудничеството между тях.¹⁸ Икономическата интеграция носи ползите от по-големия мащаб, вътрешната ефективност и стабилност за икономиката на ЕС като цяло и за икономиките на отделните държави в него. Това предлага възможности за стабилност, по-висок икономически растеж и по-голяма заетост, каквито биха били преките ползи за гражданите на ЕС. Авторът Е. Маринов (Marinov, 2017, pp. 293-306) дефинира икономическата интеграция като „икономическо споразумение между различни държави, целящо повишаване на благосъстоянието, което се характеризира с намаляване или премахване на тарифните и на нетарифните пречки пред търговията, както и координиране на паричната и фискалната политика, като крайната цел е постигане на

¹⁶ Accession criteria (Copenhagen criteria), available at: https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=LEGISSUM:accession_criteria_copenhagen.

¹⁷ ЕК оценява напредъка на реформите в страните кандидатки чрез годишни доклади до Съвета. Преговорите се провеждат под формата на междуправителствена конференция на държавите членки със страните кандидатки.

¹⁸ Икономическата интеграция има много и различни форми. Според широко цитираната книга „Теория на икономическата интеграция“ (Ballassa, 1961) съществуват четири различни етапа на икономическа интеграция: зона за свободна търговия (ЗСТ), митнически съюз (МС), общ пазар (ОП) и икономически съюз (ИС).

пълна интеграция, включваща единни парични, фискални, социални и икономически политики, управлявани от наднационални институции“.

Икономическата интеграция в ЕС се управлява от ИПС, който включва координация на икономическата и фискалната политика, общата парична политика и общата валута – еврото. Разчита се на факта, че степента на сходство на икономическите системи може да бъде повишена в процеса на самата интеграция и протичащите процеси на засилен конкуренция, интеграция на пазарите, либерализация на капиталовите потоци и т.н.

Всичките 27 държави от ЕС участват в ИПС, но 20 страни направиха допълнителна стъпка в интеграцията, като приеха еврото като единна валута, с което формират еврозоната. *Създаването на еврозоната е заложено като акт на задълбочаване на интеграцията между държавите членки на ЕС.* Еврозоната представлява ядрото от по-тясно свързани икономики с единна валута, чиито брой следва постепенно да нараства и с това да укрепва мощта на Съюза. Присъединяването на всяка държава към еврозоната е политически ангажимент, поет при присъединяването ѝ към ЕС. Договорът за присъединяване не посочва конкретен срок или датата, на която това задължение трябва да бъде изпълнено. Икономическото и социалното развитие на страните от еврозоната е важно за България, още повече при включването ѝ във Валутен механизъм II (ВМ II) от юли 2020 г. и предстоящото ѝ присъединяване към еврозоната.

Икономическата интеграция се основава на приети икономически споразумения между различни държави, включващи единни парични, фискални, социални и икономически политики, управлявани от наднационални институции. Основните цели на икономическата интеграция са постигане на по-висока ефективност на използване на факторите за производство и по-справедливо разпределение на доходите между хората и държавите, предвид съществуващите помежду им неравенства (Marinov, 2023). Същият автор разграничава следните видове икономическа интеграция: (а) според обекта на интегриране – интеграция на пазарите (премахване на пречките пред свободното движение на производствените фактори) и интеграция на политиките (създаване на обща рамка за функциониране на отделните сектори или икономики); (б) според средствата (посоката) за осъществяване – положителна (създаване на средства, мерки и институции) и отрицателна (премахване на бариерите и пречките); (в) според формата на осъществяване – неформална (практически действия, взаимодействие между пазарите) и формална (институционализиране, политически решения).

През последните няколко десетилетия динамични структурни промени в глобалната икономика, предизвикани от институционални, пазарноориентирани и геополитически фактори и напрежение, налагат коренна преоценка на традиционните теории за икономическа интеграция, включваща източниците на несигурност в съвременните международни икономически отношения и регионалната икономическа интеграция.

5. Вместо заключение

В последно време разсъжденията за състоянието, проблемите и перспективите на ЕС се свързват основно с доклада на Марио Драги.¹⁹ Тези въпроси несъмнено имат пряко отношение с протичащите процеси на конвергенция, кохезия и интеграция в ЕС. В

¹⁹ Марио Драги е бивш италиански премиер и бивш управител на Европейската централна банка. Докладът беше изготвен по поръчка за председателя на ЕК Урсула фон дер Лайен. Документът, съдържащ 400 страници, беше обсъждан на 07.11.2024 г. на неформалната среща на върха на Европейската политическа общност на ЕС в Будапеща.

доклада си авторът прави обстоен и обективен анализ на проблемите пред европейската икономика, като произнася нейна диагноза.²⁰ Докладът, от друга страна, е критикуван за радикалните реформи, които предлага, и за липсата на ясен план как да се мобилизира частното финансиране, необходимо за изпълнението му.

Марио Драги предупреждава, че от 2000 г. насам „доходът на човек от населението се е увеличил почти два пъти повече в САЩ, отколкото в Европа“. Европа преживява икономически спад в сравнение със САЩ и трябва радикално да се реформира, ако иска да избегне „бавна агония“. ЕС е недостатъчно продуктивен, твърде малко иновативен, твърде зависим от Китай за определени технологии или суровини. Икономиката на Европа е болна. Старият континент се носи по течението с лошо проектирани финансови пазари; електроенергията е твърде скъпа, научноизследователската и развойна дейност е хаотична и нивото ѝ варира в отделните страни; държавите членки се раздират от вътрешнополитически борби и не успяват да тръгнат в една посока.

Марио Драги препоръчва ЕС да засили общите си политики, като същевременно намали своята бюрокрация. Той препоръчва също ЕС да бъде „по-малко наивен в областта на търговската политика, но същевременно да не изпада в протекционизъм“. Авторът препоръчва сливане на компании в технологичния сектор, за да могат те да станат оператори на европейско ниво. Той пледира за истински съюз на капиталовите пазари. Препоръчва емитирането на общи дългови облигации, защото частните капитали няма да са достатъчни за нуждите от инвестиции на Европа. Драги препоръчва и по-олекотени и хармонизирани правила във финансите, телекомуникациите, енергетиката и отбраната. Конкретни предложения на Марио Драги:

- нова индустриална стратегия за Европа, базирана на инвестиции от 800 млрд. евро годишно, идващи главно от частния сектор, за да се справи с изоставането на икономиката на ЕС от САЩ и Китай;
- по-тясна интеграция между европейските нации, за да се постигне по-силна и конкурентоспособна икономика, което според него ще срещне трудности предвид вътрешнополитическата нестабилност и фрагментираните реакции на държавите членки.

6. Включване на потенциала на Института за икономически изследвания при БАН в изследването на проблемите по разширяване и укрепване на ЕС

След 1989 г. научната общност в икономическата област в страната се отзова в положението, когато трябваше много бързо да се пренасочи и подготви за новите реалности – преминаване от централно планирана към пазарна икономика и демокрация чрез ориентация на страната, заедно с другите страни от Централна и Източна Европа, към членство в ЕС. Ситуацията беше много сложна, защото, както казахме тогава, „вече няма план, но още няма и пазар“. Действителността беше коренно променена и нямаше никаква информация, както и малко познания за предстоящото изграждане на пазарна икономика. През този период се създадоха благоприятни възможности за подходяща подготовка на учените от страните от ЦИЕ чрез откриване на различни международни фондове, програми, възможности за разработване на международни проекти и т.н. За целта бяхме улеснени от въведените различни предприєдинителни и други програми и проекти, насочени към учените: на първо място PHARE ACE за икономическата наука, Европейската програма за сътрудничество в науката и технологиите (COST), Четвърта,

²⁰ The Future of European Competitiveness, Part A. A competitiveness strategy for Europe, September 2024.

Пета, Шеста и Седма Рамкова програма на ЕК, по-нататък Хоризонт 2020, двустранни договори и програми (Норвегия, Швейцария), ЕБР по линия на БАН, организиране на двустранни и многостранни международни проекти и т.н. Икономическият институт на БАН (тогава) се включи още от началото на 90-те години в разработването на въпросите по европейската интеграция и в други основни направления, предвид предстоящото тогава влизане на България и другите страни от ЦИЕ в ЕС. Наблюдаваше се активно участие на колегите в международното сътрудничество, съпътствано с продължително отсъствие на колеги поради пребиваване в чуждестранни научни институти и университети. Думите в оборот бяха: *scholarship, fellowship, projects*. Така получихме възможност за запознаване и създаване на полезни контакти с колеги от различните страни, възприемане на техните научни стандарти и критерии; с други думи, включихме се в международната научна общност. Може да се обобщи, че колегите ни се представиха достойно в този обмен. Едно от първите неща, които се забелязаха тогава, беше широкото участие на жени в научната сфера у нас (40% от общия брой учени), както беше и в другите бивши социалистически страни. Направените от нас изследвания, отразени в нашите публикации, послужиха като база и източник за запознаване на обществеността с нашите постижения и използване на резултатите при формиране на икономическата политика в България и ЕС.

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**CHALLENGES AND POLICIES FOR
EUROPEAN INTEGRATION**

***ПРЕДИЗВИКАТЕЛСТВА И ПОЛИТИКИ
ЗА ЕВРОПЕЙСКА ИНТЕГРАЦИЯ***

IS NOMINAL CONVERGENCE SUPPORTIVE TO THE REAL CONVERGENCE

Abstract: *The relationship between nominal and real convergence is at the heart of the Economic and Monetary Union. Saturated with revolving crises, recent years have put to the test the conventional thinking and the results of previous research on the impact of nominal convergence on real convergence. The goal of this article is to identify and assess the impact of the nominal convergence criteria on the progress in the real convergence achieved by the countries that are not in the euro area. Based on panel data for the last twelve years, an answer is sought on the extent to which the sustainable coverage of the nominal convergence criteria is a factor for real convergence. Outlined are striking controversial tendencies and the unforeseen impact of the nominal convergence on the real convergence performance of the studied countries.*

Keywords: *Economic convergence; real convergence; nominal convergence; GDP per capita*

JEL: *E31; F15; O52*

1. Introduction

Since the establishment of the concept of the Economic and Monetary Union (EMU), this topic has been a subject of academic discussion. However, saturated with revolving crises, recent years have put to the test conventional thinking and the results of previous research on real convergence. The accelerated economic dynamics, supported by large fiscal stimuli and compensations, the central banks' policies – all this in a short period of time results in contradictory effects on nominal and real convergence and their interconnection. The regulatory framework of this process imposes on the countries strict compliance with the criteria for joining the euro area (criteria for nominal convergence) and real convergence is expected to be achieved by the sustainable fulfilment of these criteria. Bulgaria orthodoxly follows the requirements of the Stability and Growth Pact, but does not progress sufficiently in the real convergence. Bulgaria remains with the lowest in the EU real convergence over the entire period of EU membership, while countries with a persistent deviation from the nominal convergence criteria have progressed significantly.

The COVID crisis, the subsequent period of high macroeconomic imbalances and the war in Ukraine have led to a slowdown in the European economy and recessions in some European countries. This period offers new events that shape contradictory tendencies in real and nominal convergence, as well as the relationship between them. Many questions remain unanswered.

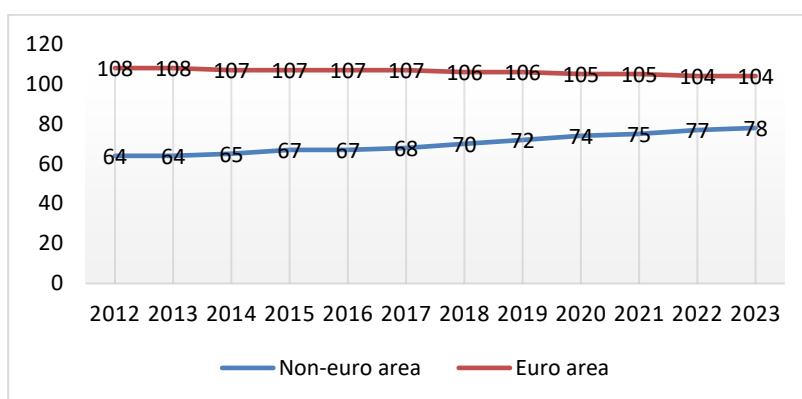
The goal of this article is to analyse the relationship between nominal and real convergence. Based on empirical data for the last twelve years, an answer is sought on the extent to which sustainable compliance with the nominal convergence criteria is a factor for real convergence. The main hypothesis of this research is that nominal convergence itself does not automatically generate catch-up in real convergence. The study focuses on the performance of countries obliged to join the euro area, namely Bulgaria, Czechia, Hungary, Poland and Romania (Sweden excluded). Based on panel data, the dynamics of the real convergence of the selected countries are studied and the impact of the four convergent (Maastricht) criteria on the real convergence in the studied period is estimated.

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2. How Did Real Convergence Evolve?

The financial crisis has been followed by a long period of slow and unsustainable economic recovery, further deteriorated by the COVID crisis and the war in Ukraine. Over the entire 12-year period (2012-2023), GDP per capita in the PPS indicator in the euro area has decreased from 108% to 104% of the EU average (Figure 1). This is due mainly to the developments in the large economies in which GDP has slowed down. In France, the deviation of GDP per capita from the EU has decreased from 108% in 2012 to 101% in 2023. In Germany, the decrease is from 124% to 115%. In the Netherlands, the decrease is from 135% to 130%, while in Austria – from 133% to 123%.

Figure 1. GDP per capita in PPS (EU average = 100)



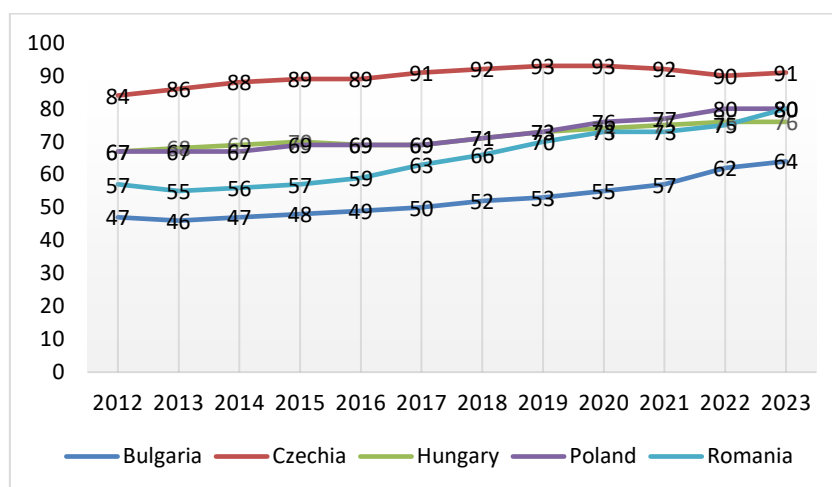
Note: Non-euro area, excluding Denmark and Sweden

Source: Calculated from Eurostat data.

Within the euro area, smaller catching-up economies (with the exception of Slovakia) have reversed the trend of the large economies, continuing to catch up to the EU average GDP per capita. The biggest jump is made by Croatia (from 62% to 76%), Latvia (from 61% to 71%), Lithuania (from 71% to 86%) and Slovenia (from 83% to 91%).

Unlike the euro area, the countries outside it have accelerated the catch-up and thus the differences between the individual countries have decreased, measured by a standard deviation from 43.8 in 2012 to 39.8 in 2023.

Figure 2. GDP per capita in PPS (EU average = 100)



Note: Non-euro area, excl. Denmark and Sweden

Source: Eurostat.

The most remarkable real convergence is achieved by Romania, which during the period has even overtaken Hungary and in 2023 has equalled Poland by this indicator. The only country with a decreasing value of this indicator in the last five years, albeit slightly, is Czechia. Also of interest is the fact that in 2020 (the year of COVID-19) all four countries have shortened the distance to the EU average GDP per capita.

During the studied period, a high instability of the real convergence is demonstrated. This supports the thesis that real convergence is a dynamic concept and the factors determining it change. Among them, the role of nominal convergence is traditionally considered to be the main one.

3. How does Nominal Convergence Evolve?

Nominal convergence data for countries from the euro area and non-euro area show a mixed picture. No country in the euro area meets the Maastricht criteria for the entire period. Some countries systematically underperform on all indicators.

Price stability criterion

There are different ways of measuring price convergence. From a monetary policy perspective, price stability is defined by the European Central Bank's mandate at 2%. Price stability is defined in Art. 140 of the Treaty on the Functioning of the European Union (TFEU) as „The inflation rate must be no higher than 1.5 percentage points above the average of the three best-performing Member States for 1 year”.

The EMU's foundation is based on the view that price stability creates conditions for sustainable and stable economic growth and therefore for strengthening real convergence. The new rules for assessing the price stability, which provide for the possibility of removing from the calculation the three countries with the lowest inflation, create a tolerance for higher inflation than that provided for in the TFEU when assessing the nominal convergence of euro area candidate countries.

According to the Convergence reports for the respective year, the fulfilment of this criterion shows that Romania is the worst performer in complying with inflation meeting the criteria only 2 out of 11 years, followed by Hungary. Sweden and Czechia are the best followed by Poland and Bulgaria (Table 1).

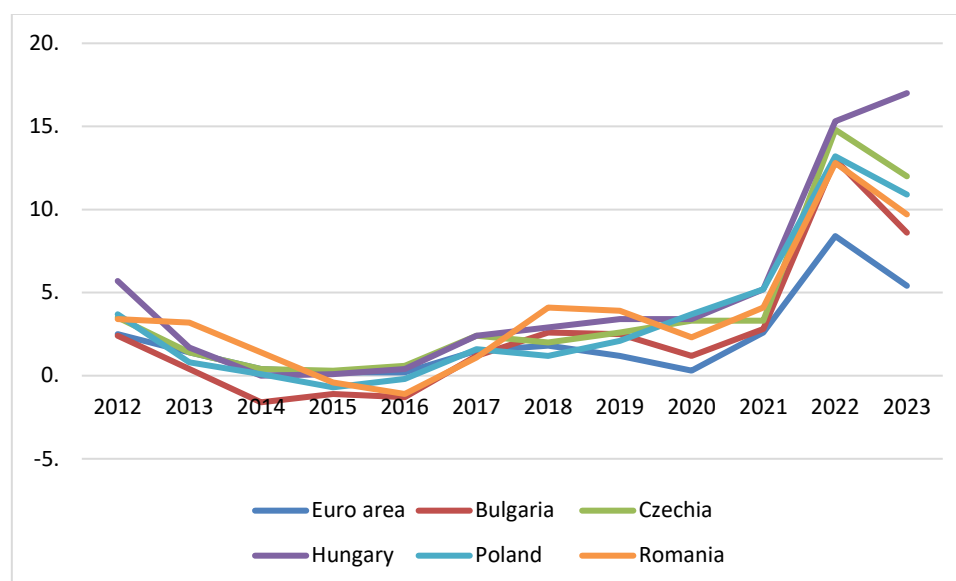
Table 1. Countries meeting the inflation criteria as per art.140 of TFEU

	2007	2008	2010	2012	2013	2014	2016	2018	2020	2022	2024
Bulgaria	NO	NO	NO	YES	YES	YES	YES	YES	YES	NO	NO
Czechia	YES	NO	YES	YES	YES	YES	YES	NO	YES	NO	NO
Hungary	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO	NO
Romania	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO
Poland	YES	YES	NO	NO	YES	YES	YES	YES	YES	NO	NO
Sweden	YES	YES	NO	YES	YES	YES	NO	NO	YES	YES	NO

Source: Own calculations from the ECB and EC Convergence reports.

For most of the studied period, countries outside the euro area have demonstrated a high degree of convergence of their inflation cycle with that of the euro area. However, since the COVID crisis, a process of decoupling has been underway (Figure 3).

Figure 3. HCPI (Annual Average Rate)



Source: Eurostat.

Thanks to the policy of the European Central Bank (ECB), inflation in the euro area is significantly lower than in the reference group of countries, while none of the surveyed countries meets the inflation criterion in 2024.

The data show that during the period of high inflation over the past three years, there has been the most significant shortening of the distance with the average levels of GDP per capita.

Government finances criteria

Art. 140 of the TFEU requires sound and sustainable public finances. Meeting the criteria means the absence of a Council of the EU decision on the existence of an excessive deficit. At the heart of this part of the criterion is the budget deficit, which ratio to GDP should not exceed the reference value (fixed at 3% of GDP in the Protocol on the Excessive Deficit Procedure). In the latest convergence reports, this criterion has found a fairly broad interpretation, which has allowed for higher tolerance for bigger deficits and bigger public debt (Rangelova et al., 2023).

According to the Convergence reports, the best performer during the entire period is Sweden followed by Bulgaria, while Romania has not met the criteria in 6 out of 10 years (Table 2).

Table 2. Government fiscal Deficit (-)/Surplus (+)

	2008	2010	2012	2013	2014	2016	2018	2020	2022	2024
Bulgaria	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES
Czechia	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO
Hungary	NO	NO	NO	YES	YES	YES	YES	YES	YES	NO
Romania	NO	NO	NO	YES	YES	YES	YES	NO	NO	NO
Poland	NO	NO	YES	YES	YES	YES	YES	YES	YES	NO
Sweden	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

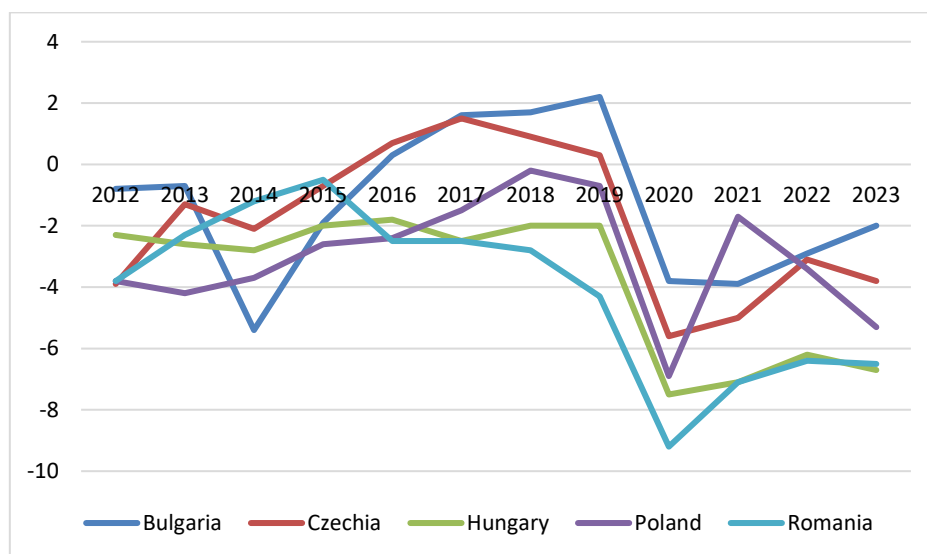
Note: 2022 special clause of excluding some budgetary costs

Source: ECB and EC Convergence reports.

The fiscal policy of referred countries has been hardly hit by COVID-19 when public expenditures have reached the highest levels and the fiscal deficit has reached the highest in

Romania (9.2%) and the lowest in Bulgaria (3.8%) (Figure 4). GDP has decreased in all countries, but Bulgaria, Romania and Poland have reduced by 2% the gap with the EU average GDP per capita.

Figure 4. Fiscal deficit to GDP (%)



Source: Eurostat.

Fiscal consolidation has occurred at a different pace in the studied countries. Because of the ambition to join the euro area, the public deficit in Bulgaria maintains low levels (below 3%), while in Romania and Hungary, the maintained levels are high (around 6.5%).

The expansion of the fiscal space enables these countries to encourage domestic demand and investment and thus counter the general trend of contraction of the European economy. However, high public spending encourages inflation. It turns out that in periods of high inflation and excessive fiscal deficit, real convergence progresses most significantly.

Achieving the fiscal criterion is very difficult not only outside but also inside the euro area (Frank, et al., 2018). In terms of the Excessive Deficit Procedure (EDP), the worst fiscal performance is recorded by Hungary (9 years in EDP), Romania (8+ continuing years), Czechia (5 years) and Poland (6 years)².

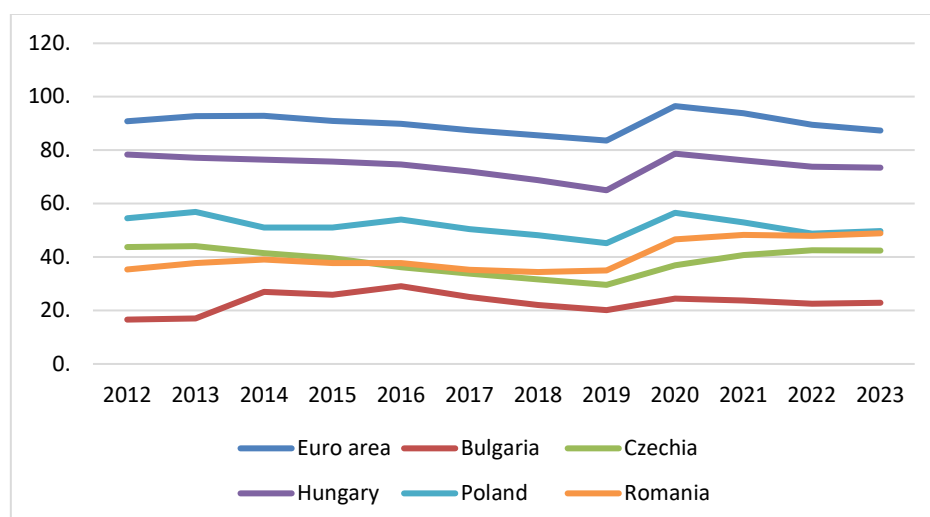
Government debt to GDP

By government debt to GDP, the best performers are Bulgaria and Czechia (they have complied with the criteria during the entire period). Hungary is the worst performer (it has never complied with the criteria).

The referent group of countries have lower levels of government debt to GDP than the EU average (Figure 5), although there is a slight tendency of convergence (standard deviation has decreased from 25.2% to 20.9%).

² https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/corrective-arm-excessive-deficit-procedure/excessive-deficit-procedures-overview_en.

Figure 5. Government debt to GDP (%)



Source: Eurostat.

Bulgaria and Poland are the only countries where government debt to GDP declines in the last three years but it is due rather to GDP growth than fiscal consolidation.

Long-term interest rates criterion

As a Maastricht criterion, the long-term interest rate faces no serious difficulties for the target group of countries to meet it. Long-term interest rates strongly depend on external factors rather than country-specific factors. That is why it does not correlate significantly with the real convergence dynamics.

4. How do Nominal and Real Convergence Interact?

The analysis of the degree of nominal convergence criteria shows that the best performers in real convergence are not those in nominal convergence. Bulgaria proves to be the best performer in nominal convergence and worst in real convergences, while Romania performs worst in nominal convergence (together with Hungary) but is the best performer in real convergences.

Table 3 presents the correlation between three of the nominal convergence criteria (inflation, fiscal deficit to GDP and government debt to GDP) and the real conversion (measured by the percentage of GDP per capita from the EU average) for each of the studied countries.

Table 3. Correlation matrix

	Inflation and GDP per capita	Fiscal deficit and GDP per capita	Government debt and GDP per capita
Bulgaria	0.85	-0.22	0.05
Czechia	0.16	0.04	-0.67
Hungary	0.71	-0.82	-0.21
Poland	0.86	-0.24	-0.28
Romania	0.71	-0.84	0.74

Source: Own calculations based on the Eurostat data.

Inflation has a significant positive correlation with the real convergence with all countries except Czechia. The real convergence increases in times of high inflation. The fiscal deficit has also played a significant but negative correlation with real convergence. The larger deficit results in faster real convergence and catching-up. Those results do not sound encouraging for the countries to follow strict fiscal policy and pursue low inflation. Government debt does not correlate with the real convergence tendencies in Bulgaria, Hungary and Poland. In Romania, the increase in public debt correlates with the shortening of the distance between the country and the EU average GDP per capita.

Other studies obtain similar results (Bobeva, 2021). In the EU candidate countries (North Macedonia, Montenegro, Serbia and Albania), the economic cycle is broadly harmonized with that of the EU, but in terms of real convergence, the countries mark different trajectories. By the nominal convergence criteria, Northern Macedonia performs best and Montenegro is the furthest from the criteria. On the other hand, by the real convergence criteria, Montenegro performs best among the candidate countries.

Back in 2006, Figuet and Nenovsky (2006) raised questions as „to what extent the policy of financial stability is compatible with economic growth to what extent it is necessary to keep the equilibrium (and even surplus) of the budget”. The literature is dominated by the categorical results of many empirical studies, which show that the stronger the fiscal discipline and the fiscal consolidation the faster the real convergence. However, the expectations that all attempts at fiscal stimulation of domestic demand sooner or later will come into conflict with external constraints have turned out to be not justified by the above data.

The results of this study contradict partly with the research of Hoyo (del Hoyo et al., 2017) who explains the „non-convergence trap” of some euro area member states with the productivity and the „crucial interaction of real convergence with „Maastricht convergence” and institutional quality”. As evidenced by the data in the case of catching-up economies outside of the euro area, there are countries with remarkable progress in real convergence based on excessive fiscal stimuli without progress of productivity and improvement of institutions.

Since conventional thinking cannot explain the different avenues of convergence in the EU, a number of authors (Monfort, et al., 2018) outline the creation of convergence clubs of countries. For example, Eastern European countries are divided into two clubs. Some authors consider that the European economic policy lacks focus on convergence and stimulates club convergence between high-income Member States (Rangelova et al., 2021).

5. Conclusions

The last twelve years, full of shocks to the EU economy, have indications of a positive impact on the real convergence of the catching-up countries. This is a rather contradictory phase of interaction – most of the major economies in the euro area diverge, while catching-up economies outside the euro area converge.

The main conclusion of the study is that nominal convergence is not a significant factor for real convergence, and in some periods, such as the one in the recent years, of high inflation and high fiscal deficits, when convergence strengthens. For more than a decade, there have been two contradictory cases – Bulgaria as a country with the best indicators for nominal convergence and the worst for real convergence, and Romania with a high jump in real convergence realised with excessive public deficits and high inflation.

Other authors draw similar conclusions. However, they believe that fiscal expansion can only have a positive impact on convergence in the short term, but this process has been observed for

a decade. It is quite demotivating that in case of non-compliance with the requirements of the Stability and Growth Pact, some countries progress faster than those that comply with it.

Bulgaria consistently follows the requirements of the Stability and Growth Pact, but does not make enough progress in real convergence. There is no automatism in the convergence process, which should instead be seen as a result of many factors of structural nature instead of simple compliance with the Maastricht criteria.

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EU COHESION POLICY: THE PROBLEMS OF ITS REFORM AND THE CHALLENGES TO THE BULGARIAN ECONOMY

Abstract: *The article has the goal to discuss the current problems of the EU cohesion policy and to outline Bulgaria's position in the ongoing European debate on the state and future of the EU Cohesion Policy. The advantages and disadvantages of the financing mechanisms and instruments of the EU Cohesion Policy and the NGEU and financial instruments and funds are compared and evaluated as impact factors. The problems of the EU Cohesion policy are discussed in the context of the difficulties and problems of the negotiation and implementation of the Multiannual Financial Frameworks of the EU, the introduction of the NGEU and the RRF facility as its main instrument together with the National plans for recovery and resilience. Conclusions are made for prospects of the EU Cohesion policy reform alternatives for the future.*

Keywords: *Economic integration; Financial issues of international integration; International public finances and fiscal problems*

JEL: *F15; F3; H87*

1. Introduction

The objective of the article is to present the results of the analysis of the current state of the EU Cohesion policy and its future reform as it has already been set on the agenda of the elected in 2024 European Parliament and European Commission. By taking into consideration the implementation of the EU Multiannual Financial Programming period (MFP) until 2027 and with regard to the negotiations for the next MFP (2027-2034) the goal is to underline the achievements and to discuss the problems encountered with the EU Cohesion policy at the present stage.

In order to reveal better the EU Cohesion policy reform process and its future opportunities it is necessary to underline that in addition to the EU budget as a source of funding of all of the traditional EU funds for economic, social and regional cohesion, since February 2021 the EU has started to implement the NextGenerationEU (NGEU) as programme of green and digital transition through the Recovery and Resilience Facility (RRF) and additional funds and instruments. The RRF implementation has raised many questions about its differences and similarities with the EU Cohesion policy (Koopman, 2022). The ongoing discussion has raised some issues regarding its future governance of the EU funds taking into consideration the lessons drawn from the experience so far of implementing the RR Facility as additional and at the same time competing with the Cohesion policy funding (Bachtler, 2022).

During the present multiannual Programming period (2021-2027) the EU and Member States have experienced some delays in the implementation of the EU Cohesion funds. In addition, the implementation of the NGEU programme (including the RRF and other new instruments) has been also delayed and marked by a number of rising differences among Member States in their accomplishment of the relevant National Plans for recovery and resilience. However, as of late March 2024, only just over a third of the total funds available for disbursement under the RR facility have been paid out. The absorption of traditional cohesion funds is lagging significantly behind the EU average too and, given that RRF funding „competes” with cohesion funding, the challenges remain. To a large extent, the success of the new RR Facility has

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become dependent on the proper individual choice of each EU Member State for shared governance with EU institutions. The stress has been laid on each Member State's own capacity to adequately encounter the challenges identified in country-specific recommendations under the European Semester framework of economic and social policy coordination.

Since February 7, 2022, the positive assessment of Bulgaria's recovery and resilience plan by the European Commission has been a step forward for the EU to start on the road of implementation of the requirements for the disbursement of €6.3 billion in grants under the Recovery and Resilience Facility (RRF). However, Bulgaria has encountered difficulties in the implementation of the Plan having made use only of about 7 per cent of the total sum by the end of 2024 due to the political uncertainty of frequent preliminary Parliamentary elections and the instability of Governments in the Cabinet. Thus, in the medium term, Bulgaria has to meet the challenges to carry out the due reforms in order to support the implementation outlined in Bulgaria's recovery and resilience plan.

The article discusses the main features of the EU Cohesion policy and some aspects of its reform based on: 1) a SWOT analysis of the funding of the EU Cohesion policy; 2) an analysis of the main changes and challenges to the EU Cohesion policy since 2021 onwards and the lessons to be drawn.

2. The State of the Problem

There are significant achievements of the Cohesion Policy contributing to economic and social convergence in the Union. However, the 9th Cohesion Report of the European Commission underlines that challenges remain especially at a regional level, and these will be further impacted by structural transformations (European Commission, 2024). A stronger and modernised policy is essential to fortify Europe's growth model, to build an inclusive Union, and to deliver on the Treaty objective of economic, social and territorial cohesion. Inequalities and regional disparities remain to be tackled (Eurofound, 2023).

The 2024 report from the High-Level Group on the Future of Cohesion Policy stresses the need for a Cohesion Policy that, may better achieve its focus on economic, social, and territorial cohesion and convergence by a pan-European approach in concert with other EU and national policies and initiatives (Rodríguez-Pose et al., 2024). The reform of the Cohesion policy has to be designed to stimulate the shift of the Cohesion Policy from a 'support' mechanism to a central driver of growth, jobs, equality, and opportunities at a regional level, particularly in vulnerable areas to bridge economic disparities and ensure that prosperity reaches everyone (European Commission, 2024a).

NextGenerationEU (NGEU) allows the EU to issue a significant volume of debt at the European level. Thus, instead of the EU budget, the money raised are a new source of funding for the NGEU funds and instruments. Besides the RRF grants, the total NGEU grant volume includes other instruments such as ReactEU, Just Transition Fund, Horizon Europe, InvestEU, Rural Development, and RescEU (Pfeiffer et al., 2021).

Specifically, the issuance of new NGEU debt takes place between mid-2021 and 2026 in the form of bonds of up to €150 billion. The Commission takes a role in the capital markets as a major provider of safe (AAA-rated) assets denominated in euros. The debts under the RRF facility have to be repaid in full between 2028 and 2058. The EU countries are individually responsible for repaying their RRF loans. The EC borrowing used to fund grants paid out to EU countries – along with the accompanying interest charges – must be repaid collectively by the EU. However, as the European Court of Auditors pointed out, there are risks to mitigate the

increased risk resulting from the RRF model of financing not linked to costs and there is little enthusiasm among member states for increasing their contributions to the common pot. (European Court of Auditors, 2024).

The discussion for the possibilities of making further use of this mode of raising collective debt at the EU level like the temporary usage of the NGEU instruments has become indicative of the difficulties in the EU's search for new approaches to foster growth, competitiveness and social welfare.

On one side, since its origin 30 years ago the EU Cohesion policy implemented by the traditional EU funds has had a pan-European scope based on an inclusive bottom-up approach that ensures the participation of diverse regional stakeholders in the implementation of EU structural funds.

In contrast, the RRF has been managed centrally but by relying on the National plans negotiated between the European Commission and 27 EU Member States. Thus, the RRF indirectly has been involved with cohesion and convergence by public investment and regional development and its implementation fully depends on the rising role of centralised Governments' governance of the National plans. The success of these EU instruments has become highly dependent on the proper operational management and political choice of national Governments.

The NGEU and its new instruments, despite having some similarities with the Cohesion Policy and also complementing the Cohesion policy in some respects, differ substantially in other respects such as their overall top-down Government governance design, drivers, timeframe and financing arrangements.

3. Methodology

The research methodology is based on the political economy of international relations and theories of regulation in order to analyse the driving forces of open strategic autonomy and the economic rationale of its implementation in the EU reform of the investment rules. On the basis of the classical concept of „negative” and „positive” international integration, we distinguish in the contemporary situation the dominating trend of positive integration in the EU by re-regulation or/and introduction of new rules of functioning of the Union in response to global rivalries.

4. Results and Discussions

Our study has been focused on the SWOT analysis of the funding of the EU Cohesion policy as a main area of the EU budget spending under MFF 2014-2020 and MFF 2021-2027.

The strengths of the EU Cohesion policy involve several main features:

- The EU Cohesion Policy is the most important solidarity and investment EU policy, over 30 years of history proving its indispensable role in the European integration process;
- All regions, cities and municipalities benefit from the EU Cohesion Policy as it maintains the focus on the long-term needs of social, economic and territorial development of EU regions;
- The Cohesion policy addresses unforeseen crises such as the COVID-19 pandemic and the war in Ukraine;

- The effective application of the principles of partnership and multilevel governance in the implementation of Cohesion Policy programmes.
- The efficient and timely use of existing EU funds now is a key element in ensuring the progress of economic and social Cohesion in the future.
- The NGEU through exogenous investments apart from the EU budget's own resources is in support of the EU Cohesion policy. National implementation of NGEU in fact provides credit lines for national governments to foster growth and competitiveness.
- A palpable driver of economic recovery and structural reform, the RRF has also helped countries make tangible steps towards the green transition, with many well exceeding the 37% minimum requirements on climate-related objectives through their ambitious national plans.
- In February 2024, three years into NextGenerationEU's existence, the European Commission delivered a favourable mid-term evaluation of the RRF's progress. With €225 billion in funding already disbursed and over 1,150 milestones and targets reached, EU countries are rapidly tackling long-standing challenges and effectively responding to new ones (EC, 2024).

The weaknesses of the EU Cohesion policy may be summarized as follows:

- the trend towards a multiplication of investment funds at the EU level, with some being under direct while others under shared management does not allow simplification and better governance of EU funds; (Nuñez, 2022).
- European Commission's plans to transfer resources from structural funds to other programmes, most notably to REPowerEU;
- controversies of the concept of 'do no harm to cohesion' and its inadequate implementation;
- difficulties in assessing the impact of EU policies.

The opportunities of the EU Cohesion policy:

The implementation of the 27 National plans under the RRF offers opportunities to streamline EU policies and improve their coherence across sectors, but it needs a stronger Institutional capacity and coordination of the territorial dimension.

Threats:

- the lack of coordination mechanisms between the Recovery and Resilience Facility and the 2021-2027 Cohesion Policy creates problems for the public accountability and efficiency of EU funds; (European Court of Auditors, 2023).
- Each new NGEU instrument comes with its own objectives, negotiation and programming procedures, eligibility criteria, delivery and implementation systems, timelines and governance arrangements. In parts, these overlap with those of existing programmes.

5. Conclusions

The analysis of *the evolution of the EU Cohesion policy reforms* reveals the important changes introduced under the implementation the EU Global strategy (2016), the adoption of the EU New Strategic Agenda 2019-2024, the Strategy of European Green Deal and respectively legal acts related to NGEU and RepowerEU through implementation of the Mechanism of Recovery and Resilience and the ongoing fulfilment of the goals of the Multiannual Financial Framework

(2021-2027). The debate concerning the future EU Cohesion Policy has focused on the overall political tasks encountered by the EU and its Member States in times of global tension and geopolitical uncertainty. In a recent study of the European Policy Center (Brussels), it is argued that it has become necessary for the EU to reconsider the goals of the Cohesion Policy and „reframe” it with a strategic, long-term investment perspective: EU resilience, security, strategic autonomy and reforms (Hunter, 2023).

Our research has pointed out *several types of risks* that may be encountered by the Union and Member States. Such an approach aims to consolidate the functioning of the Cohesion Policy. The European economic security strategy of 29 June 2023 identified four risk categories to be addressed as a matter of priority, i.e. risks to the resilience of supply chains; risks to the physical and cyber-security of critical infrastructure; risks for technology security and of technology leakage; and risk of weaponisation of economic dependencies or economic coercion” (EC, 2024). It has been acknowledged that in order to govern these risks adequately, the Union and its Member States have to improve *the shared management* of the EU funds. By distinguishing the negative consequences of the global risks for the Union and the Member States, the analysis raises the question of improving the efficiency of the Cohesion policy fostering competitiveness, trade and economic growth.

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EUROPEAN STRATEGIES FOR IMPROVING THE COMPETITIVENESS OF EU INDUSTRIAL PRODUCTION AND CHALLENGES IN THE POST-PANDEMIC CRISIS PERIOD

Abstract: The main intention of the competition rules is to maintain a balanced alignment of EU industrial policy with the concept of improving the competitiveness of European industry. The regulations are aimed at a sustainable industrial policy, in accordance with its provision of domestic raw materials and resources, to reduce dependence on third countries and to raise the Single Market to a highly developed competitive market in the world. One of the main objectives of the EU is to improve international competitiveness in order to gain advantages in the competitive struggle with the US and China. The EU's industrial strategy is based on the green and digital transition, while protecting strategic autonomy and preserving quality jobs, as well as strengthening innovation capacity in Europe. The purpose of the article is the importance of the European strategy for improving competitiveness and changes in EU regulations aimed at improving the functioning of the Single Market based on clean energy and digitalization.

Keywords EU Industrial Strategy; Competitiveness of European Industry, Investments in the EU; Single Market
JEL: F15; F13; F21

1. Introduction

European Union regulations are aimed at harmonizing EU competition rules with EU industrial policy. According to the New Industrial Policy, sustainable European industry should be provided with raw materials and resources that reduce the EU's dependence on imports from third countries, as well as strengthen the functioning of the Single Market (SM) to a highly developed competitive market in the world (European Commission, 2021). In relation to this strategy, one of the main objectives is to improve the international competitiveness of European industry, to withstand the competition of US and Chinese manufacturing and trade.

The EU industrial strategy is based on the ecological and digital transition, on the open strategic autonomy, on the preservation of quality jobs and on investments in new technologies in Europe. In the conditions of dynamic and uncertain geopolitical relations, the strengthening of European industrial competitiveness is the basis of overcoming the dependence on imports of critical and strategic raw materials and goods, of new technologies, which is a guarantee for safe, ecologically clean and affordable energy. Investments in strategic sectors, in research and development, as well as the diversification of suppliers, based on the conclusion of non-sectoral partnerships and alliances, are an integral part of the EU's industrial strategy and of improving competition rules. In order to ensure the smooth functioning of the SM, EU countries should implement commercial and technological alliances that ensure independence in the supply of raw materials and goods that are critical for the economy, as well as improve competition in trade relations in the SM and with third countries at a global level. The first part presents the main EU strategies for the development of the New EU Industrial Strategy in the context of the imperative implementation of innovative technologies and improving the competitiveness of European industry. The second part examines the main factors that determine the state of European companies.

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2. The EU Industrial Strategy and the Single Market

The EU's industrial strategy is to ensure the smooth functioning of the SM. The aim is to establish equal conditions of competition within the EU and outside the SM, in order to avoid distortions in trade relations between partners. The European Union implements monitoring to track and comply with EU rules, to ensure a competitive advantage for companies operating in the SM and to stimulate the global transition to a circular, climate-neutral and energy-efficient economy. The monitoring tracks compliance with the rules of functioning of SM by the European companies. The establishment of European standards has an important role in strengthening and functioning of the SM and has a positive impact on the competitiveness of European industry. In this regard, the EU industrial strategy is directed towards securing financing from private funds, from state aid and from European Structural Funds. Over the past years, improving the competitiveness of the European economy and the initiatives for re-industrializing Europe through environmental and digital transformation have been the strategic objectives of the EU.

This practice is not perfect and raises a number of questions and difficulties arising from the different degrees of economic development and structure of economies and finances in the EU. Open questions remain on how to overcome the differences in the budgetary capabilities, in the different degrees of indebtedness of countries, in their ability to generate new investments and other factors arising from the significant financial assistance granted by EU countries to support the economic state of local businesses during the COVID-19 pandemic crisis. Disparities in fiscal policies between countries and the payment difficulties of companies are a problem that leads to the fragmentation of the SM. Moreover, the majority of state aid provided during the COVID-19 pandemic crisis was not absorbed by the majority of EU member states. The European Commission is establishing a Strategic Technology Platform for Europe (STEP), whose focus is the full use of EU instruments to provide financial support for business investments. The platform is part of initiatives to support industry by expanding and developing EU strategic technology industries such as digital, clean and biotech. The policy is aimed at supporting industrial companies, building resilience and meeting the goals of the environmental and digital transition, which will strengthen European sovereignty – one of the main goals of STEP.

Another issue important for the competitiveness of European industry is the quality of the vocational education of the workforce in the context of open strategic autonomy and based on ecological and digital technologies. This allows the development of a strategy for industrial competitiveness and commercialization of strategic technologies within the EU and overcoming differences between countries in the field of financing the implementation of innovations. The regulation of the common strategy on critical raw materials is aimed at green projects towards digitalisation and at improving the functioning and strengthening of European global value chains (GVC). In this regard, the improvement of industrial competitiveness and reindustrialization of European industry and the prevention of deindustrialization, which has been going on for years, are the focus of EU strategies for the attainment of open strategic autonomy in the field of industrial production and the accumulation on key technologies, in relation with the „green deal industrial plan and zero emission era” (La Commission européenne, 2021). These ambitious policies are complemented by the European Solar Photovoltaic Industry Alliance and the European Clean Technologies Platform from 2022.

InvestEU is relevant, to expand investments in strategic sectors and support industrial enterprises experiencing financial difficulties due to geopolitical and geoeconomic shocks. The main point is to assess investment costs and resource scarcity, as well as the impact of the US Inflation Act on the EU economy. Easing the administrative burden for small and medium-

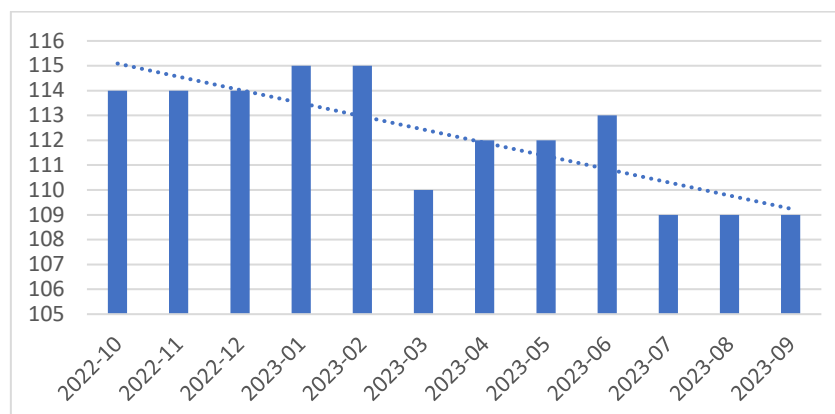
sized enterprises (SMEs) and start-ups and meeting social and economic standards, companies are subject to a competitiveness test, complying with the EU's strategic objectives with a focus on new technologies. However, the implementation of EU-wide and cross-border projects requires the collection of „sufficient” funding (Le Parlement européen, 2023). According to the European Sovereignty Fund, new initiatives, goals and policy tasks must be based on attracting new additional funds from private capital sources. The European Sovereignty Fund is expected to finance cross-border energy infrastructure to overcome the lack of solid fossil fuels, renewable energy production and energy efficiency in line with the European Green Deal, cyber security, industrial competitiveness, circular economy, food security and sustainable development.

3. The Factors Affecting European Companies' Competitiveness

One of the main factors, affecting the smooth functioning of European companies is the pandemic crisis due to COVID-19, when a large part of the European industrial sector had ceased to work at previous rates, with some enterprises closing altogether. Another impact is the increase in inflation in Europe, fuelled by the European Central Bank (ECB) monetary policy, as well as the expansion of national fiscal policies to counter the pandemic crisis. The second wave of inflation was caused by the increase in the price level, because of the suspension of traditional channels of transfer of goods due to the war on the territory of Ukraine and other political imbalances, which also changed the traditional ways of transport and supplies. This also affected the organization of international trade and imposed new ways and necessities for effective production and organization of the functioning of European companies. The growth of wholesale natural gas and electricity prices since the beginning of 2021 (by nearly 15 times) has negatively affected the competitiveness of European multinational companies (MNCs) and changed their plans and functioning. The costs of companies are increasing through a number of channels: First, the high cost of electricity supply leads to an increase in costs. Second, the high price of oil and gas makes industrial production more expensive. Third, the increase in the prices of basic goods puts an additional financial burden on businesses and consumers. In an indirect way, the competitiveness of European production is affected by the disruption of conformity in the supply of goods and services along the GVC. During the pandemic crisis, some industries were harder hit than others, because those industries require higher energy consumption. The change in the ways of supplying energy carriers in Europe also caused an upgrade of the EU industrial and competition policy, aimed at the implementation of energy-saving mechanisms recommended and applied to European companies and requiring the reorganization of the management and the production process.

The recovery of economic sectors in the post-crisis period required imports of raw materials and intermediate goods, which process encountered difficulties due to the delay in the organization and the functioning of GVC. This also had an impact on the rise in prices of raw materials and goods. Transport costs increased by 3.6%. The wave of inflation in Europe decreased the competitiveness of European companies on the international market as the labour productivity in major European industrial sectors deteriorated. Those factors have led to a decline in economic activity and output, which remains volatile and is trending downward into 2023.

**Figure 1. European Union – 27 countries (as of 2020) Industrial production [teis090],
Volume of production index, Monthly data from October 2022 to September 2023,
2015=100 (SCA)**



Source: Eurostat.

Companies suffer losses also in line with the increase in their dependence on bank credit, which makes them financially vulnerable. Mechanisms have been introduced in order to overcome the high indebtedness of companies. They include special guarantees for the location of the economic activity and financial support, energy saving and energy efficiency recommendations in order to reduce the demand for electricity. Also, the attraction of private and public investments; and the introduction of fiscal framework conditions to expand renewable energy production to reduce dependence on fossil fuels have been underlined as important instruments. These ambitious goals required significant financial means and reorganization of the industry in Europe because firstly, this process is slow and secondly, it requires significant capital investments, which have been especially mentioned earlier.

An unfavourable factor for the development of the European industry is that large European companies exported part of their activities to the USA, due to the relatively lower administrative costs, lower prices of energy carriers and more accessible forms of doing business. European companies choose the USA because of higher stock valuations, deeper markets, and the US anti-inflation law, which earmarks money for sustainable industrial projects. The localization of European companies in other markets disrupts the sustainability of the SM and negatively affects the EU's strategic autonomy.

The activity of SMEs operating in industries and services also experienced difficulties. A number of European countries have introduced temporary export bans and restrictions on the export of critical goods. During the crisis, most economies were under full or partial lockdown and the implementation of already concluded trade and investment deals remained uncertain. The future of offshoring remains uncertain in the post-COVID-19 crisis period as well. The EU remains dependent on imports of goods for structural industries and for consumption. European companies continue to experience difficulties and shortages in the production of important components for the electronics industry (microchip production) and for the automotive industry. One of the reasons is the slow recovery of GVC in the post-pandemic crisis period, which turned out to be longer than predicted.

Global value chains reoriented production networks and channels of supplies of goods at destinations, which are closer to the main companies' headquarters (Antràs, 2020). It is a reflection of the fluctuating and changing development of EU international trade. The location

criteria of European value chains are important, since they focus on much more security of supplies of goods and services and less dependence on long-distance transport.

European companies are obliged to comply with Environmental and Social Governance (ESG) requirements and to upgrade technological drivers and skills needed to improve competitiveness. The implementation of the EU's reindustrialization strategy based on new technologies is facing unknown domestic and foreign economic and policy developments. Despite the attractiveness of the EU, the ambitious goals for deep transformation of the industry are directly related to solving problems such as continued political instability, rising costs of energy carriers and electricity, excessive regulation of the SM, continued deindustrialization in relation to the displacement of companies to other more financially profitable destinations and, in addition, the outflow of highly qualified personnel seeking high incomes and realization in Asia and the USA.

4. Conclusions

Mario Draghi's report „The Future of European Competitiveness” argues that government investment is the basis for improving European competitiveness (Draghi, 2024). As emphasized above, the growing challenges in geopolitical terms and the high indebtedness of the Eurozone countries cannot solve the problems with the lower labour productivity of the EU member states, compared to the main trade competitors. Although, substantial investments are needed to finance the scientific, educational and research activities that are the basis of the development of new technologies and implementation of the ambitious goals for a green industry, clean energy and a climate-neutral economy.

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UNPRECEDENTED CHALLENGES FOR EUROPEAN COMPETITIVENESS

Abstract: *The Euroland economy is confronted with unprecedented challenges at present, in the context of the persistent global geo-political tensions, and the discontinuity of the structural reforms. During January-July 2024 the exports of goods and industrial production in Euroland declined by annual paces of around 3% and almost 4%, according to the Netherlands Bureau for Economic Policy Analysis (CPB). In this respect, the EU Strategic Agenda for the period 2024-2029 underlines competitiveness as a fundamental pillar. The current paper applies standard econometric tools and uses the database of Eurostat, the Netherlands Bureau for Economic Policy Analysis (CPB), and Market Risk Premia in order to identify the main weaknesses for the international competitiveness of the economy of European Union, including the slow dynamics of the labour productivity, and the high level of the energy prices and of the financing costs.*

Keywords: *EU economy; competitiveness; labour productivity*

JEL: *C22; E32; E62; H30; J24*

1. Introduction

The economies of the member countries of the European Union are confronted with an unprecedented competitiveness crisis nowadays, determined by the consequences of the exogenous shocks (the coronavirus pandemic and the crisis in Ukraine) and the discontinuity of the structural reforms.

The Euroland (which contributes by around 85% to the GDP of the European Union) is the region mostly affected by the competitiveness crisis, as its volume of exports of goods contracted for the 16th month in a row in July 2024 and declined by an average annual rate of 2.9% during January-July 2024, according to the statistics of the Netherlands Bureau for Economic Policy Analysis (CPB, 2024).

This evolution is in divergence, compared to the increase in the volume of the exports of goods in the USA (the largest economy in the world, with a nominal dimension of over USD 29tn in 2Q 2024, according to the estimates of the Bureau of Economic Analysis (BEA, 2024)) and in China (the second largest economy of the world) by average annual rates of 3.1% and 10.7%, respectively during January-July 2024, as reflected by the CPB data.

In fact, competitiveness has represented the most important economic challenge for the member countries of the European Union and this block as a whole over the past decades, and this determined the policy-makers to implement several measures in order to address this challenge. For instance, the Lisbon Agenda had as its main objective the transformation of the European Union into the most competitive and dynamic economy in the world by 2010. This strategy was a failure, given the existence of an externality and the fact that the reforms are painful, as emphasized by Wyplosz (2010).

Furthermore, the EU Strategic Agenda for the period 2024-2029 is based on three pillars, according to the Council of the European Union (2024):

1. free and democratic Europe;
2. strong and secure Europe;

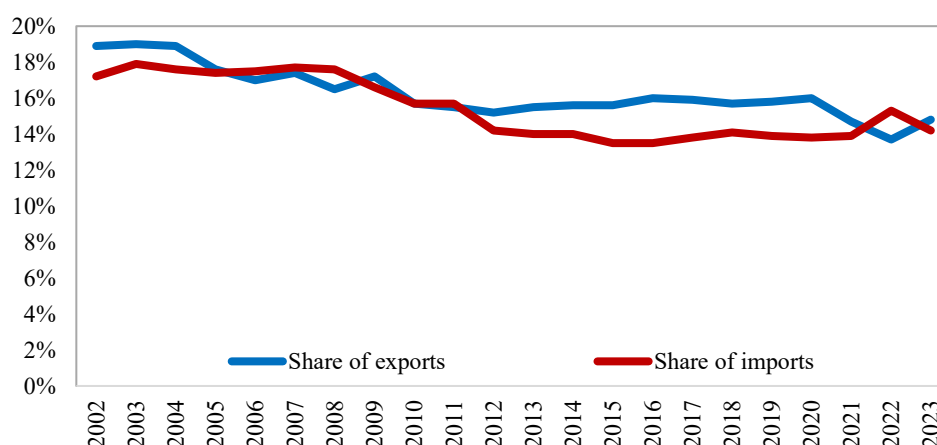
¹ Senior Researcher Dr. Andrei Rădulescu, Institute for World Economy and Macro-Modelling Centre, Romanian Academy, member of the Bretton Woods Committee: iemradulescu@gmail.com.

3. prosperous and competitive Europe.

Despite the efforts of the policy-makers, the competitiveness of the Euroland has deteriorated since its inception in 1999 (when the EURO was launched), an evolution determined by the incidence of endogenous (especially the Great Financial Crisis) and exogenous shocks (including the coronavirus pandemic and the crisis in Ukraine).

This is reflected by the decline of the weight of exports of the European Union in world exports from 18.9% in 2002 to 14.8% in 2023, according to Statista (2024). Furthermore, the share of the imports of the European Union in the world imports decreased from 17.2% in 2002 to 14.2% in 2023, as can be noticed in Figure 1.

Figure 1. The share of the EU in the world exports and imports of goods



Source: Statista, 2024.

The most severe decrease in the weight of the exports and of the weight of the imports of the European Union in the world was noticed in the context of the outbreak of the Great Financial Crisis in 2007-2008.

In fact, the worst world economic and financial crisis since the end of the Second World War determined a *W* crisis in Euroland, due to the impossible adjustment across the countries located in the Southern part of Europe, heavily indebted in euro, a currency that they could not control (as the monetary policy is set by the European Central Bank for the Eurozone as a whole), as pointed out by De Grauwe (2011).

At the same time, in the context of the outbreak of the COVID-19 pandemic, the Eurozone was confronted with a more severe adjustment than the US economy, due to the measures implemented by the policymakers to support the employees.

Last, but not least, the intensification of the geopolitical tensions starting in February 2022 had a significant negative impact on Euroland, as Germany (the economic locomotive of the region) was highly dependent over the past decades on the imports of energy resources at affordable prices from Russia and exports of high value-added goods on Chinese market, according to Krugman (2022).

The rest of the paper has the following structure: Chapter 2 presents the recent macroeconomic developments, focusing on the structural weaknesses for the competitiveness of Euroland; Chapter 3 briefly presents the applied methodology; the results of the econometric estimates are presented in chapter 4; the conclusions are drawn in the last chapter of the paper and of the presentation.

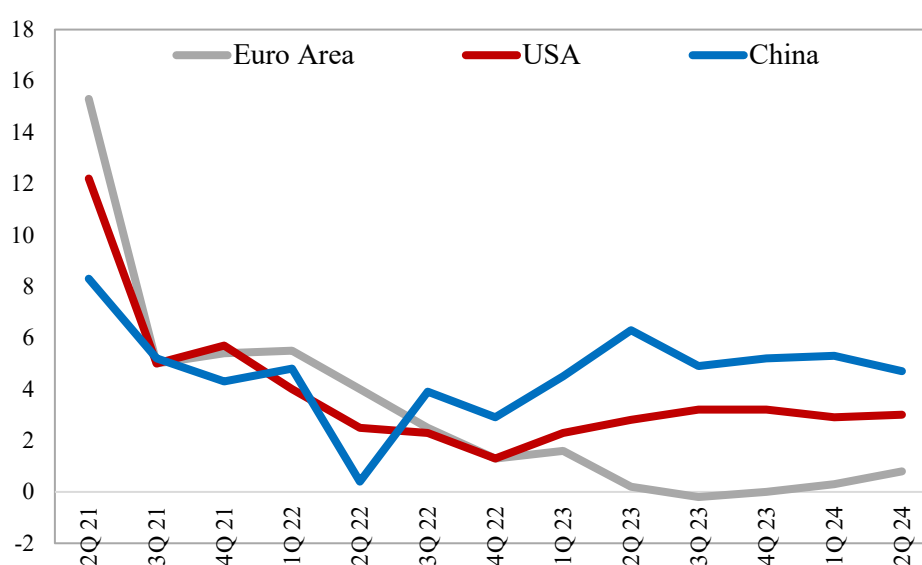
2. Recent Macroeconomic Developments in the European Union / Euroland

The macroeconomic climate in the European Union / Euroland deteriorated since the outbreak of the crisis in Ukraine in February 2022 (as can be noticed in the following figure), an evolution determined by the consequences of the geo-political fragmentation and by the high level of dependence on the imports of energy at affordable prices from Russia.

According to Eurostat data, the GDP in Euroland grew by an annual pace of only 0.4% in 2023, significantly below the dynamics in the USA (2.9%) and China (5.2%).

Furthermore, in the first half of 2024 the economic activity inched up by an annual pace of 0.6% in Euroland, a slower level compared to 5.0% in China and almost 3% in the USA, as reflected by the data released by Eurostat, National Bureau of Statistics of China and the Bureau of Economic Analysis from Washington, represented in Figure 2.

Figure 2. The annual pace of the GDP (%)



Source: Eurostat, Bureau of Economic Analysis, and National Bureau of Statistics in China, 2024.

Furthermore, the economy of Euroland resumed the contraction in the month of September 2024, according to the PMI Composite indicator (manufacturing and services) estimated on a monthly basis by S&P Global (Trading Economics, 2024a).

There can be noticed the persistence of a tough climate across the industry (the contraction pace of manufacturing intensified in Euroland in September, according to the PMI indicator, as reflected by the data of Trading Economics (2024b)), as the secondary sector of the economy (and the engine of the economy from the supply-side perspective) of the region has been confronted with a structural crisis over the past quarters, an evolution determined by several factors:

1. geopolitical fragmentation, with a negative impact on the dynamics of global trade (the volume of world trade inched up by an annual pace of 1% during January – July 2024, according to the figures released by the Bureau of Economic Policy Analysis from the Netherlands (CPB, 2024));
2. high level of the price of energy, as the region continues to be dependent on imports;
3. high level of the real cost of financing (the nominal cost of financing adjusted by inflation);
4. weak dynamics of the labour productivity;

5. slower implementation of the Digital Revolution and of the Artificial Intelligence Revolution, at least compared to the dynamics in the USA, and China.

For instance, between 2011 and 2022 the prices for household electricity in the European Union were higher compared to those in the USA by 80% on average, according to the Eurostat database.

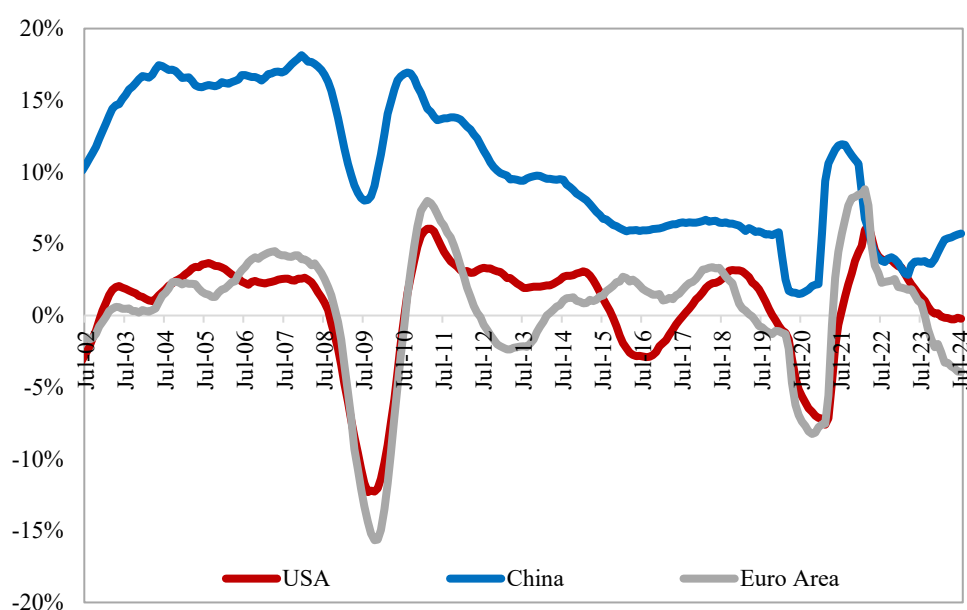
Furthermore, the prices of electricity for companies in the European Union are 2-3 times higher than in the United States, as emphasized by the report on competitiveness elaborated by Draghi (2024).

At the same time, the figures published by the European Central Bank (ECB) and Federal Reserve (FED) show that labour productivity grew by average annual paces of 0.1% in Euroland and 2% in the USA for the period 1999-2023.

Moreover, the market risk premium in Germany was higher by 2.3 pps on average compared to the USA over the past two decades, according to the estimates of Market Risk Premia, 2024.

Taking into account the above-mentioned factors the volume of industrial production in Euroland decreased by an annual average pace of 3.8% in the first seven months of 2024, a divergence compared to the decline of only 0.3% in the USA and the increase of 5.8% in China, according to the figures released by the Netherlands Bureau of Economic Policy Analysis (CPB, 2024), reflected in Figure 3.

Figure 3. The volume of the industrial production (annual pace, MA12)



Source: Netherlands Bureau of Economic Policy Analysis (CPB), 2024.

3. Methodology

This paper employs standard econometric tools (OLS regression and Hodrick-Prescott filter) in order to assess the impact of several factors (global trade, financing costs, and electricity prices) on the dynamics of industrial production in the Euroland.

Among the sources of data used for this purpose, one can mention: the Netherlands Bureau for Economic Policy Analysis (CPB, 2024) for the evolution of industrial production and global trade; the Marketriskpremia platform for the dynamics of the market risk premium in Germany,

the largest economy in the Euroland; Eurostat, for the evolution of the industrial production and electricity prices.

Monthly observations were employed for the period May 2002 – July 2024, while the econometric software E-Views was used.

For the industrial production in Euroland and the world trade flows there were considered the annual dynamics, moving averages of 12 months.

For the electricity prices, the annual pace was taken into account in the analysis.

The trend component of the above-mentioned variables was estimated by implementing the Hodrick-Prescott filter, one of the most used standard econometric methods in order to distinguish between the cyclical and the structural components of the macroeconomic indicators.

The Hodrick-Prescott filter is based on the following relation:

$$\text{Min} \sum_{t=1}^T (\ln Y_t - \ln Y_t^*)^2 + \lambda \sum_{t=2}^{T-1} ((\ln Y_{t+1}^* - \ln Y_t^*) - (\ln Y_t^* - \ln Y_{t-1}^*))^2 \quad (1)$$

where Y_t , Y_t^* and λ represent the macroeconomic indicator, its structural component (trend), and the smoothness parameter, with the following characteristic: the lower its value, the closer the value of the indicator to its potential.

Given the fact that this paper uses monthly observations, a value of 14400 was considered for the smoothness parameter, as suggested by the paper of Hodrick-Prescott (1997).

Afterwards, a standard OLS (ordinary least square) regression was implemented, as reflected in the following relation:

$$\text{INDPRODTR} = c(1) * \text{WORLDTRADETR} + c(2) * \text{MARKETRISKTR} + c(3) * \text{ELECTRICITYTR} \quad (2)$$

in which INDPRODTR, WORLDTRADETR, MARKETRISKTR, and ELECTRICITYTR are the trend components for the industrial production in Euroland, the volume of world trade, the market risk premium in Germany, and the electricity prices in the Eurozone.

4. Research Results

The results of the econometric estimates are expressed in the following table (Table 1).

According to the results of the methodology applied (described in the previous chapter), the evolution of industrial production in the Euroland is directly dependent on the dynamics of world trade, the estimated coefficient is 0.40 for the period May 2002 – July 2024.

In other words, an increase in the volume of global trade by 1% contributed to the advance of industrial production in the Eurozone by 0.4% over the analysed period.

On the other hand, it can be noticed that the evolution of industrial production in Euroland is negatively dependent on the dynamics of the market risk premium in Germany, with an estimated coefficient of -0.07 for the period May 2002 – July 2024. The increase of the market risk premium in Germany in this interval contributed to the decline of industrial production by 0.07% in Euroland.

Last, but not least, there is also a negative relation between the industrial production in the Eurozone and the dynamics of the price of electricity in the region, with an estimated coefficient

from the regression of -0.04%. In other words, the increase of the electricity prices in Euroland by 1% determined the decline of the volume of industrial production in the region by 0.04% during the period May 2002 – July 2024.

Table 1. The estimated OLS regression for the trend components of the macroeconomic indicators

Dependent Variable: INDPRODTR

Method: Least Squares

Date: 10/20/24 Time: 19:21

Sample(adjusted): 2002:05 2023:07

Included observations: 255 after adjusting endpoints

INDPRODTR = C(2)*WORLDTRADETR+C(3)*MARKETRISKTR+C(4)*ELECTRICITYTR(+12)

	Coefficient	Std. Error	t-Statistic	Prob.
C(2)	0.401708	0.024935	16.11005	0.0000
C(3)	-0.074450	0.020448	-3.640931	0.0003
C(4)	-0.044610	0.018573	-2.401839	0.0170
R-squared	0.502203	Mean dependent var		0.515899
Adjusted R-squared	0.498253	S.D. dependent var		1.624898
S.E. of regression	1.150982	Akaike info criterion		3.130804
Sum squared resid	333.8396	Schwarz criterion		3.172465
Log likelihood	-396.1775	Durbin-Watson stat		0.005009

Source: the results of the econometric estimates, employing the methodology described in the previous chapter and using the econometric software E-Views.

5. Conclusions

The structural challenges in terms of competitiveness for the EU economies have been known for many decades, while solutions have been proposed by experts. These include prioritization of resources allocated for R&D, implementation of the Banking Union and of the Capital Markets Union, the development of the business potential with the emerging and developing economies in Asia (we are living in the Asian Century) and Africa, the implementation of the Digital Revolution and Artificial Intelligence Revolution, diminishing the dependence on imports of energy, and implementing the Political Union.

However, the implementation of the structural reforms in the European Union countries was characterised by discontinuity over the past decades.

Furthermore, instead of amplifying the efforts in terms of (economic) diplomacy, the EU countries are significantly increasing military spending.

In this context, a new Vision and a calibrated Strategy are needed more than ever in the European Union, to support investments in new technology, innovation, human capital and to contribute to the sustainable transition towards a New Economy, by focusing on quality and entrepreneurship.

Last, but not least, important changes are needed in terms of governance, implementation and accountability in the European Union, in order to put the economy back on track.

By implementing the above-mentioned recommendations, by setting up the strategic dialogue and by rediscovering the unity of the EU member states (the best asset to counter the current challenges) the European Union would be better prepared for the next crises, would improve the management of the multiple responsibilities (including the integration of migration) and

would better address the impact of the global changes, including the economic integration within the Global South (SCO/BRICS) and the de-dollarization.

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THE NEW EUROPEAN FISCAL FRAMEWORK – IN SEARCH OF THE BALANCE BETWEEN SUSTAINABLE PUBLIC FINANCE AND PUBLIC INVESTMENT

Abstract: Recently new EU economic and fiscal governance framework was adopted. The article aims to reveal the main features and goals of the updated rules while highlighting some challenges for future implementation.

Keywords: fiscal rules; government debt; expenditures

JEL: E61; H5; H6

1. Introduction

Since the end of April 2024, a revised EU economic governance framework is in force². There were several amendments to the rules after the introduction of the „six-pack” reform in 2011 in order to ensure sound and sustainable public finances. The new philosophy focuses on the public expenditures path and gradual reduction in government debt and deficit ratios while encouraging key reforms and investments. The previous rules have been widely criticized for not coping with maintaining the reference values of debt and deficit levels. The idea for a new change escalated especially after several exceptional situations that led to the general escape clause from the fiscal rules starting with the COVID-19 pandemic, geopolitical tensions, energy price increase and global inflation hikes. Looking twenty years backwards euro area gross government debt defined by the Maastricht Treaty has always been a challenge. It seems none of the reforms succeeded. In 2007 general government consolidated gross debt³ for the EU⁴ and EA⁵ was 62.4% and 65.9%, respectively. Till the reform in 2011, it increased significantly to 81.7% and 87.2%. In 2013 after the next change of the rules, the indicator even worsened to 86.7% and 92.7%, respectively. In 2018 a small reduction was reached while in the pandemic year 2020 euro area average public debt reached its historical high of 96.5%. In the following years, an improvement was observed reaching 87.4% in 2023. It was driven also by higher nominal GDP growth, while the balance between fiscal consolidation, a stable path of debt decrease and the need for investment got more problematic, especially for the countries with persistently high debt.

2. The Idea to Bring More Reforms and Investments while Providing the Needed Fiscal Space for Gradual Reduction of the Public Debt

The aim of the new revision was to achieve gradual and plausible fiscal consolidation while at the same time promoting sustainable growth in all member states through reforms and investment. Thus, not making the fiscal consolidation on the back of reducing important capital

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² The new framework is in force since April 30-th, 2024.

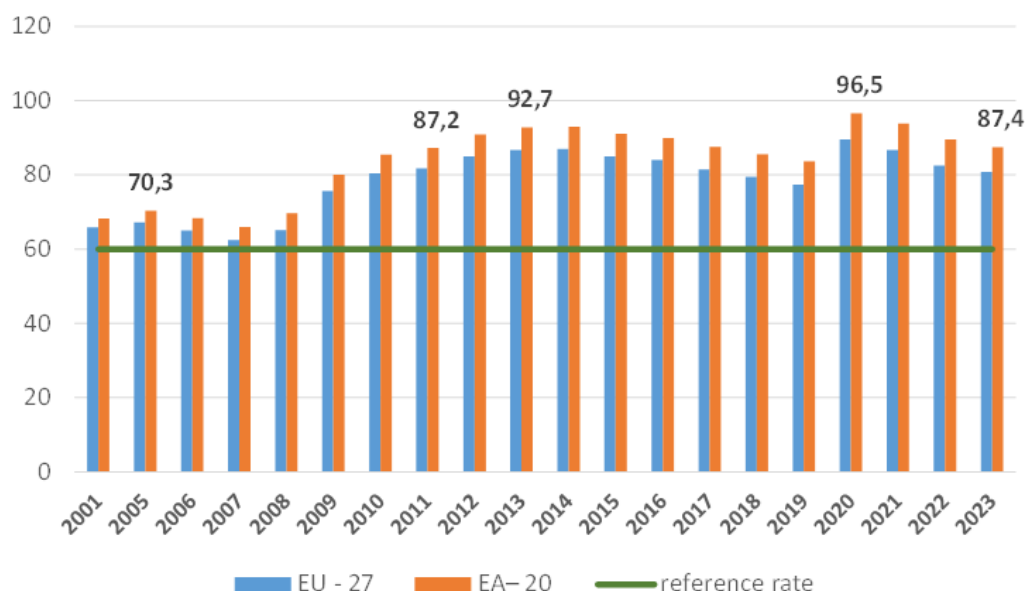
³ National accounts indicator (ESA 2010) methodology.

⁴ European Union changing composition- 27 countries (from 2020).

⁵ Euro area changing composition – 20 countries (from 2023).

investments and limiting the potential growth in a bad demographic situation across the EU. How the Maastricht criteria of a maximum of 3% fiscal deficit of GDP is achieved – on the back of fewer capital investments or reduced expenditures, or/and higher social expenditures, is crucial. The new reform brings the proper direction, but the question is if this could be sustainably achieved in a constantly changing and challenging environment. Moreover, the way it is technically set and achieved by each country is also questionable.

Figure 1. Evolution of the EU gross government debt (% of GDP)



Source: Eurostat.

While the government debt was sustainably increasing during the past decades, public capital investments in the EU did not boost despite all efforts and amounts engaged through the EU funds. Public investments in the EU are still quite low at the level of around 3.5% of GDP and lack prominent results. A recently announced report by Mario Draghi on the EU's competitiveness points out that public investments in R&D are insufficient while EU countries do not collaborate enough on innovation. According to this report public sector in the EU spends about as much on research and innovation as the US as a share of GDP, but only one-tenth of this spending takes place at the EU level (Draghi, 2024). At the same time, some EU member states kept relatively high social expenditures and high government debt at the same time, while other countries have chosen to comply in the wrong way by cutting investment.

The new framework was packed up into three pillar legislative acts („the package”). These are Council Regulation (EU) 2024/1264 of 29 April 2024 amending Regulation (EC) No 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure, Council Directive (EU) 2024/1265 of 29 April 2024 amending Directive 2011/85/EU on requirements for budgetary frameworks of the Member States and Regulation (EU) 2024/1263 of 29 April 2024 on the effective coordination of economic policies and on multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97. The processes of the last reform were initiated and started in 2020:

- In 2020 started the evaluation of the 2011 and 2013 reforms.
- In 2021 the European Commission relaunched the review.

- In March 2022 public consultation results were announced.
- In November 2022 the EC communication on the reform of the economic governance framework was released.
- In March 2023 – EU Council conclusion on the European Commission orientation.
- In April 2023, the European Commission published the legal proposals.
- In April-December 2023 – discussions were held on the new rules.
- End of April 2024 the new reform is in force.

It seems that the public consultations took quite a comfortable time while the political, expert level and technical discussions had been in a tense short time dead-end before the final adoption of the package. Some of the EU countries pushed the reform to happen as soon as possible on the back of less clarity on the technical aspects of the new specific calculations which resulted in difficulties in implementation.

3. Methodological Approaches That Will Guide the New Governance Framework

According to the new rules, EU member states shall prepare National medium-term fiscal structural plans which will replace the previous Convergence/Stability Programs and National Reform Programs, covering a period of 4 or 5 years. The new plans shall include policy priorities, structural reforms and investment plans, as well as the relevant fiscal plans that will ensure these priorities through sustained fiscal position and sustainable growth. The fiscal adjustment set in the plans may take 4 or 7 years in case of extension.

As regards the fiscal plans, the previous structural balance mid-term objective (MTO) and expenditure benchmark are replaced by a new operational indicator – net expenditures. These are government expenditure net of: interest expenditure, discretionary revenue measures, expenditure on programs of the Union fully matched by EU funds revenue, national expenditure on co-financing of programs funded by the EU, cyclical elements of unemployment benefit expenditure, one-offs and other temporary measures. The main difference with the old expenditure benchmark is that national expenditure (as co-financing on EU programs) are excluded which gives more fiscal space.

The net expenditure path is set as annual growth rates of the nominal net expenditure as such to provide a deficit below 3%, debt below 60% and sustainability in the medium term through additional safeguards. Net expenditure growth for the forecast period will be derived from the nominal potential growth and change in the structural primary balance. A minimum annual adjustment of 0.5% of GDP (structural balance) is set for countries with a deficit above 3% of GDP in the previous year. A requirement to gradually reduce the structural deficit until it reaches a resilience margin in structural terms of 1.5% of GDP is introduced. The improvement in the structural primary balance should be 0.4 pps (0.25 pps for countries with extension) until a structural deficit of 1.5% of GDP is reached (deficit resilience safeguard). Additionally, general government debt should decrease by a minimum annual average amount of: 1 percentage point of GDP as long as the general government debt-to-GDP ratio exceeds 90%; or by 0.5 percentage points of GDP as long as the general government debt-to-GDP ratio remains between 60% and 90% (debt safeguard). The new framework is based predominantly on the Debt sustainability analysis (DSA) which is used to forecast the debt level and determine the fiscal adjustment needed to fulfil the new rules.

According to the new framework, prior to preparing the plan, the Commission shall provide member countries with debt above 60% of GDP, or deficit above 3% with a reference trajectory (i.e. expenditure path that will ensure a gradual decline in debt level/correction of deficit in the adjustment period and stays at prudent levels in the medium-term). The net expenditure path set in the Plan can be different from the reference trajectory but there should be an economic explanation, so the member countries can convince the Commission that the path is plausible. The submission of the national medium-term fiscal-structural plan is preceded by a technical dialogue with the Commission. After submission, the Plans will be approved by the Council on recommendation by the Commission (the Council should adopt a recommendation setting the net expenditure path and, as appropriate, endorse the reforms and investments underpinning the possible extension of the adjustment period). The Council may require a new Plan (on a recommendation by the Commission).

Under the annual fiscal surveillance countries shall submit an annual progress report on the implementation of its national medium-term fiscal-structural plan, by 30 April each year, incl. implementation of net expenditure path, broader reforms and investments.

Deviations in the net expenditure will be recorded in a special control account (Regulation (EU) 2024/1263, Art. 22). This will be a record of the cumulated upward and downward deviations of the observed net expenditure from the net expenditure path set by the Council.

The Commission will prepare a report when: the ratio of the government debt to GDP exceeds the reference value, the budgetary position is not close to balance or in surplus, and the deviations recorded in the control account of the member state either exceed 0.3 percentage points of GDP annually, or 0.6 percentage points of GDP cumulatively. If there is a significant deviation in the implementation of the net expenditure path, then the Corrective arm of the SGP is enforced. If structural reforms and investments are not implemented, then the EC provides country-specific recommendations or a new net expenditure path in case of an extension of the adjustment period.

One of the main features of the new framework is the shift from strict numerical targets to a more flexible approach based on economic conditions and investment needs especially for green and digital transition (see Table 1).

Table 1. New elements in the updated fiscal framework – comparison with the old one

Old framework	New framework
National Reform and Convergence programs	National fiscal structural plans
Structural balance (Mid-term objective) and expenditure benchmark rule	Net expenditure path
Gross consolidated government debt goal	Debt sustainability analysis and gradual debt reduction
Budget balance deficit goal	Flexibility of the fiscal targets
No special focus on public investment	Reforms though investments are a priority
Measurement issues related to the output gap used in the calculation of the structural balance	Measurement issues related to the calculation of structural primary balance still remain

Source: EU Legal packages on economic governance.

4. Results

It seems that Member states with the biggest public debt will be left with some fiscal space and more light rules compared to the previous framework. Fiscal adjustment requirements under the new EU fiscal framework will be lighter for them compared with the old rules. Preliminary calculations (Darvas et al., 2024) based on the spring 2024 European Commission forecast show similar results. For example, probable adjustment requirements for Greece and Portugal

will be small, notwithstanding their high debt levels, because these countries already have sizeable primary surpluses (Darvas et al., 2024).

Looking through the published fiscal plans till mid-October 2024, it might be observed that part of the countries preferred to use their own macroeconomic forecasts for the technical calculations, not the Commission forecast. This leads to different net expenditure paths from the EC reference trajectory and it is supported by specific arguments provided by the governments.

Another issue with the new framework is the lack of published historical time-series data on EU-financed expenditures, one-off expenditures, and discretionary revenue measures. This complicates how observed net expenditure will be comparably calculated. Eurostat doesn't publish such indicator and most of the underlying components of net expenditures are not published, too which gives the sense of a lack of enough transparency.

5. Conclusions

With the new rules, countries with high debt will be allowed to follow adjustment paths based on their individual commitments to reforms. Though with better goals the idea for more simplicity new rules seems more complex in technical terms while the procyclicality and other issues in output gap calculations still remain.

While the new rules seem to be more complex and unclear in terms of technicality, assumptions and calculations, the new framework does not give enough solutions in a situation when a country suffers political crisis for long, with frequent changes in governments. This will actually lead to a circle of frequent updates of the fiscal plan rising costs and administrative burden, as well as a lack of consistency and comparison with the other member states. The new updated legal framework does not envisage sanctions for delays or not sending on time the fiscal plans.

Critics argue that loosening the rules might lead to non-compliance, further imbalances and increased divergence. At the same time, comparability issues between EU countries seem to be a challenge. The focus on public investment should better reflect the quality of expenditures, too.

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FISCAL INCENTIVES FOR THE IMPLEMENTATION OF CIRCULAR ECONOMY IN THE EUROPEAN UNION

Abstract: Governments are faced with the complex challenge of developing policy packages for the transition from a linear to a circular economy, through public policies to reduce pollution and natural resource depletion. European circular economy policies contribute to the achievement of sustainable development goals, with governments having to effectively manage waste and natural resources. European requirements to reduce waste to landfill and incineration, to recycle packaging, construction waste and PFAS materials in the textile industry spur governments to introduce additional tax incentives and public policies to encourage new business and household behaviour. This article analyzes the fiscal incentives in the European Union (EU) to stimulate the reduction and recycling of waste, as well as its reuse in production. Theoretical and empirical aspects of the circular economy, European policies and their aims to address the wide range of environmental consequences associated with the generation of waste from economic activities and households are explored. The objectives of public policy related to the disposal and recycling of waste, and the EU citizens' views to achieve these objectives in the Member States are analyzed.

Keywords: fiscal policy; circular economy; government regulations

JEL: H30; H23; G38

1. Introduction

The circular economy has become a priority and part of the EU's industrial strategy through the EU Circular Economy Transition Plan in 2015 (European Commission, 2015). In 2018, the European Commission (EC) emphasised the importance of monitoring progress towards a circular economy, leading to the creation of an extensive set of indicators (European Commission, 2018).

Following the adoption of the European Green Deal Investment Plan and the Just Transition Mechanism by the EC in January 2020, in March of the same year, the EC presented a new Action Plan for a circular economy (European Commission, 2020), for a clean and more competitive Europe. The plan has aimed to speed up the European Green Deal while further developing circular economy measures (European Commission, 2022a, 2022b).

In order to transpose the EU legislation for circular economy, Member States are developing their strategies and plans. Bulgaria has developed its Strategy and Action Plan for the transition to a circular economy during the EU program period 2021-2027, which builds on the measures laid down in the projects of new sector strategies and programs, the main ones being in the field of economy, environmental protection and regional development.

2. Empirical Aspects of the Circular Economy

The concept of circular economy as part of the concept of the green economy was introduced by environmental economists Herman Daly in his work „Steady State Economics” (1974) and David Pearce's „A Blueprint for the Green Economy” (1989) with the idea of showing that the environment is a fundamental system in the economy and not just a supplier of resources. Over

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the years, this model has received increasing attention in the literature and from governments and economic agents. Applying the Hegelian doctrine for economic and social development circular economy is defined as a new stage of economic development with a changed content of the object, subject, and means for achieving the goal (Chobanova, 2022).

The coronavirus crisis has highlighted the fragility of supply chains and affected small businesses and industries. The potential link between environmental policy and foreign direct investment, as well as international trade and investment patterns, is central to the competitiveness debate (Panushev et al., 2021). The evolution of the economy from a linear model to a circular one, and thus to a green economy that recycles or reuses in production should reduce carbon emissions, stimulate economic growth and create job opportunities (Zlatinov, 2020; Zhelyazkova, 2017). Challenges of the green transformation in agriculture and from the asymmetry of information are outlined (Dimitrova, 2023; Mochurova et al., 2018).

A number of studies examine the interrelationship of sustainable finance, environmental taxes and subsidies with the transition to a circular economy in Bulgaria (Ivanova, 2022). McGinty and de Vries (2009) analyze the relationship between environmental subsidies, the diffusion of clean technology and the degree of product differentiation in an imperfectly competitive output market. Substantial changes must be made in the basic economic paradigm for the linear model that industrialized nations and achieved significant success in generating material wealth in the XX century, but its sustainability in the modern economy become questionable (Sariatli, 2017).

The comprehensive definition of circular economy in the literature is given in the work of Kirchherr et al. (2017) where an analysis of 114 circular economy definitions produced a meta-definition that described the circular economy as „an economic system that changes the „end-of-life” characteristics of the linear economy by reducing, reusing and recycling materials and resources in the processes of production and consumption to achieve sustainable development and benefit the future generation”.

3. European Objectives and Fiscal Measures for Waste and Resource Management

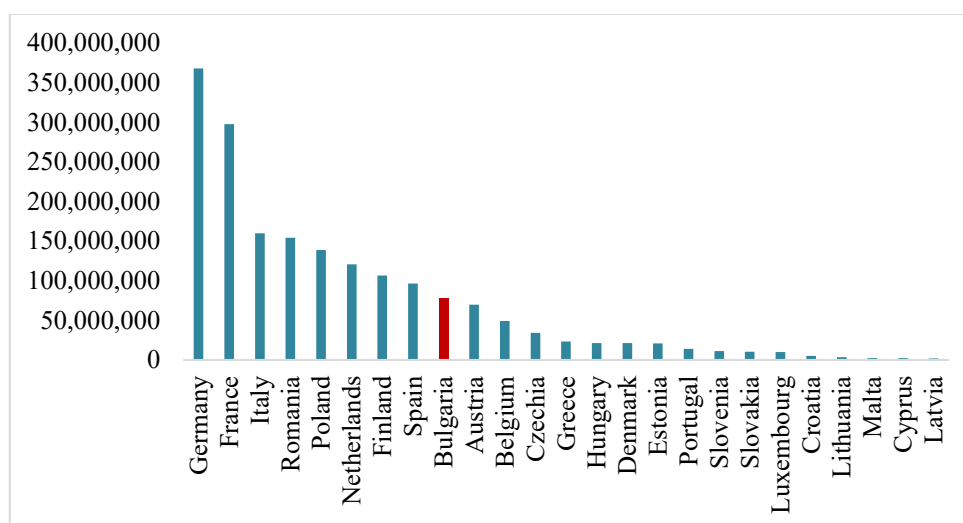
From 01.01.2021, the EC introduced a new fiscal incentive to implement a circular model in the economy through national contributions based on the amount of non-recycled waste from plastic packaging. They are introduced as a new own resource of the EU. This own resource is closely related to the EU's policy priorities for the implementation of a circular economy and the reduction of packaging waste.²

The main economic instruments of fiscal policy used to reduce pollution and reuse resources are related to the introduction of landfill taxes, incineration taxes, pay-as-you-throw systems and separate collection schemes.

The EU's goal for limiting household waste disposal is up to 10% of total waste by 2035 (Directive (EU) 2018/850). In 2022, the amount of household waste generated per person in the EU amounted to 513 kg, 4% less per person than in 2021, and a significant part is already recycled. Germany and France are the leaders in terms of the amount of treated waste as the EU's biggest economies.

² Contributions will be calculated on the basis of Eurostat data that Member States already collect and provide under existing reporting obligations. More specifically, in accordance with the Directive on packaging and packaging waste (Directive 94/62/EEC) and the Decision implementing this directive (Decision (EU) 2019/665) Member States already provide data on the generation and recycling of plastic packaging waste. This data is publicly available on the Eurostat website.

Figure 1. Waste treatment in EU Member States, 2022 (kg)



Source: Eurostat, 2024.

Landfill or incineration taxes are imposed in order to make these ways of waste treatment more expensive and thus to make recycling or prevention more economically attractive and/or to generate revenue that can be invested in better waste management. Landfill taxes are currently applied in 22 EU Member States. The EU average is approximately EUR 39-46 per tonne of landfilled waste, with significant differences between countries, from less than EUR 20 per tonne to over EUR 100 per tonne.

About 1/6 of the municipalities in Bulgaria fulfilled the goals for reuse and recycling of waste materials, including paper and cardboard, metal, plastic and household glass and similar waste from other sources no less than 40% of the total weight of this waste, but recycling process still needs improvement (EEA, 2023).

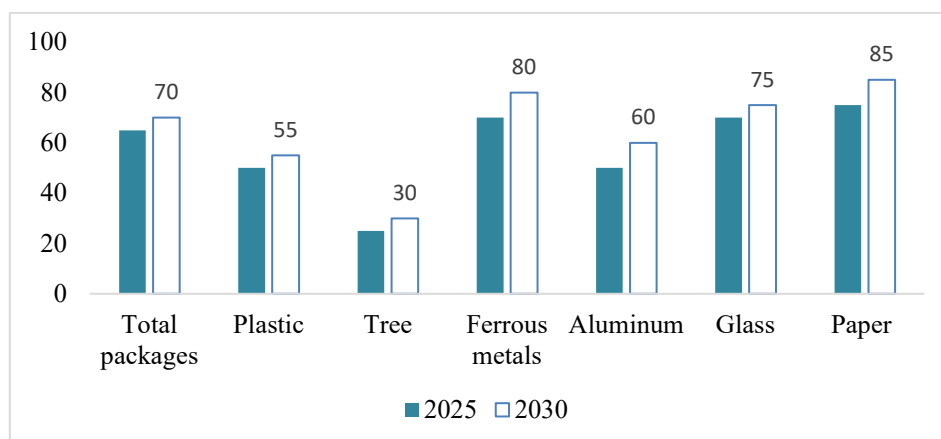
In Belgium, a ban on landfilling biodegradable waste was introduced in 2007. The landfill tax is levied on all Belgian waste destined for landfill, also on waste exported from Belgium for landfill in other countries and on waste imported from other countries for landfill in Belgium. In France, the tax rate depends on the design of the landfill, and in Slovakia, the tax varies from EUR 11 to 33 per tonne, depending on the share of separately collected household waste in a given municipality. In Slovenia, the tax applies to residues from household waste treatment. Poland and Spain apply a lower level to output from mechanical-biological treatment plants, and a higher level applies to untreated municipal waste. In Italy, taxes are set by the regions within a nationally defined range. There is no landfill tax in Malta, but landfill entry charges apply to mixed waste deposited in public waste management facilities, which are expected to rise from €40 per tonne in 2023 to €120 per tonne in 2027 (EEA, 2023).

4. Recycling of Packaging Waste

Several EU waste directives, such as the EU Directive 94/62/EC on packing and packing waste and Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), address certain types of waste included in household waste and set collection and/or recycling targets. Correct implementation of these directives should help the EU and its Member States to achieve their municipal waste recycling targets.

Paper, glass, plastic and textiles, and WEEE are among the most suitable materials for recycling and new production. Digitization and mapping of resources can help the industry create supply chains, processing and manufacturing new products. To facilitate recycling, the EU requires at least paper and cardboard, plastics, glass and metals to be collected separately from mixed household waste. Separate collection of bio-waste (food and garden waste) is required by the end of 2023 and for textiles and hazardous household waste by the end of 2025.

Figure 2. EU packaging waste recycling target rates (% of total waste)



Source: Directive (EU) 2018/851.

Effective separate collection can also be achieved by improving the infrastructure, providing for the possibility of separating biological waste and promoting the activity of separate collection sites. For Bulgaria, the Environment program funded by the EU funds for the EU program period 2021-2027 provides BGN 145 million for municipal waste management. Specific beneficiaries are 78 Bulgarian municipalities from 14 Regional Waste Management Associations.³

For packaging waste, the general goal for the EU is to recycle 65% by 2025 and 70% by 2030. Specific goals by type of packaging have also been set. The Member States also have targets to achieve 25% recycled content of plastic in PET bottles by 2025, and all bottles must be made of at least 30% recycled materials by 2030. Bulgaria has already taken measures to ban the marketing of plastic products such as forks, knives, spoons, plates and straws.

In December 2023, the European Council and the Parliament achieved agreement on the EC's proposed revision of the construction products regulation. In the EU, the waste from the construction sector represents 38 % of total waste for 2022 (Eurostat, 2024).

In June 2024, the European Council agreed to revise Directive 2008/98/EC on waste, including measures to reduce textile waste. Fashion brands and textile manufacturers will have to pay fees to help the process, as this waste is part of the manufacturing industry sector, generating 10.3% of the total waste for 2022 in the EU. The use of PFAS materials in the textile industry contributes to environmental pollution due to its sustainability, which necessitates its recycling.

The March 2024 Eurobarometer survey found that 72% of EU citizens consider promoting the circular economy the most effective way to tackle environmental problems, followed by

³ Official website for European funds in Bulgaria: <https://eufunds.media/2024/06/21/nad-145-mln-lv-stavat-dostapni-za-retsiklirane-na-biorazgradimi-otpadatsi-v-78-obshtini/>.

restoring nature. Moreover, 84% of citizens indicate the need for environmental legislation to protect the environment in the Member States.

Table 1. Some of the results of the survey on EU citizens' support for the circular economy

% of EU citizens	Proposed measures by EU citizens
84	More than four in five respondents want measures to counter the effects of harmful chemicals present in everyday products that harm their health. A similar proportion are concerned about the impact of such chemicals on the environment.
78	Over 3/4 of Europeans believe that the EU should propose additional measures to tackle Europe's water-related problems.
72	Promoting the circular economy as the most effective way to deal with environmental problems and their direct impact on their lives and health.
17	Promoting the circular economy by reducing the generation of waste, reusing or recycling materials
15	Restoring nature
14	Products sold on the European market should not contribute to environmental damage

Source: European Union, Eurobarometer (2024), <https://europa.eu/eurobarometer/surveys/detail/3173>.

In Spain, Greece, Cyprus, Malta, Portugal and Italy 88% and 98% of citizens are very concerned that the environment affects their daily life and health. In Greece, Portugal, Spain, Estonia, Cyprus and Bulgaria, environmental restoration is of primary importance to citizens.

5. Conclusion

Over the past decade, EU Member States have faced the complex challenge of developing policy packages for the transition to a circular economy, ensuring that the workforce is prepared for the transition to a green economy. Fiscal policy through tax incentives for waste management, innovative technological solutions, and environmental subsidies for recycling and reuse of materials in production contributes to promoting a circular economy and achieving climate neutrality targets in the EU by 2050.

EU citizens have a positive attitude towards the separate collection of waste, but they do not confirm it with their actions. In most cases, citizens are not informed about the existence of separate collection sites in the municipality and do not take action to take advantage of this opportunity to dispose of bulky waste. The weak motivation of citizens can be corrected through financial instruments if the fee for household waste is linked to the actual amount and volume of discarded waste, but this is not yet done in some Member States, including Bulgaria.

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CIRCULAR ECONOMY IN THE EU MEMBER STATES – GETTING CLOSER OR GROWING APART

Abstract: The EU has declared circular economy to stand at the heart of its Green Deal. For this purpose, a number of strategic documents backed up by legislation have been launched aiming at organizing the smooth transition in the Union from a linear to a circular economy. Despite the common policies, the results of the countries reveal quite a divergent picture. The aim of the present paper is to shed light on the question of whether the countries in the EU are getting closer or growing apart in terms of outcomes when applying actions towards the circular economy. For the purpose selected, key indicators of the European Union on circularity are analyzed within the context of the union's policy in that direction.

Keywords: circular economy; circular material use rate; end-of-life recycling input rates; trade-in recyclable raw materials

JEL: Q50; Q58

1. Introduction

The European Union (EU) officially launched its strategy towards the transition to a circular economy in 2015 by introducing its first circular economy action plan, despite the fact that a number of countries have long before started more or less systematic initiatives in this direction. In 2020, as a continuation of this policy, the EU adopted a new circular economy action plan aiming at further streamlining the efforts towards the transition as one of the main building blocks of the European Green Deal (Circular economy action plan, EC). This plan announces initiatives along the whole lifecycle of products, and this corresponds to the gradual introduction of numerous policies and regulatory documents to ensure that the right framework for the implementation of the plan is in place. The regulations need to take into account the local specificities of the countries in the union, as each one of them has its own unique structure of economy and capacity. In order to track the progress towards the desired goals in the area of circular economy, Eurostat has been collecting particular indicators. These show the progress both at the Union and at the country level. The aim of the paper is to analyze the outcome of selected indicators and reach a conclusion on whether the countries in the EU have been growing closer or growing apart in their common efforts towards circularity for the years covered by the statistics.

2. State of the Matter

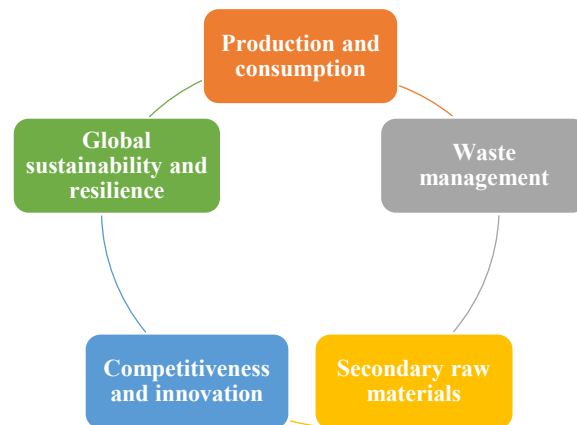
The circular economy, which has actually been the natural way of functioning of the world economy for millennia, has been overshadowed by the linear economy established through industrialization and has not been deeply understood and actively adopted as an approach until after the end of the XX century. The circular economy stays at the heart of the Juncker Commission's ambition for a sustainable economy and is indeed embedded in the theoretical concept of sustainability (D'Adamo et al., 2024; Bockreis, Ragossnig, 2023; D'Adamo et al., 2023; Zorpas et al., 2021). At present, it is an instrumental part of the second Von der Leyen

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Commission implementation of the European Green Deal. Academic literature aiming at understanding the impacts of circularity has grown exponentially during the past 10 years, despite that understanding and evidence of the economic, environmental, as well as social implications of the circular economy remaining on the surface (Friant et al., 2020; Donati et al., 2020; Lekan, Rogers, 2020; Lindgreen et al., 2020; Velis, 2018). The impacts of the circular economy on economic growth, social justice, and sustainability, too, need much wider and deeper research as outlined by a number of authors (Friant et al., 2020; Mayumi, Giampietro, 2019; Millar et al., 2019; Moreau et al., 2017; Murray et al., 2017; Temesgen et al., 2019). This research will be unfolding in the future, backed by data collected for the purpose.

In 2018, the European Commission adopted the so-called monitoring framework through which to keep progress on the developments of the transition towards a circular economy. Since its inception, it has been revised, and under the current version, there are 11 indicators (some of them including sub-indicators) that are being followed, and they are grouped within 5 thematic sections as presented in Figure 1. At present, work is undergoing to expand them to cover a broader spectrum of the matter.

Figure 1. Thematic Sections of Indicators in the EU for Circularity



Source: Eurostat. <https://ec.europa.eu/eurostat/web/circular-economy/information-data#Waste%20management>.

3. Methodology

Due to the limitations of the scope of the present work, the indicators from the category „Secondary raw materials”, one of which has two sub-indicators, have been analyzed:

- 1) Contribution of recycled materials to raw materials demand, which is measured by 2 sub-indicators:
 - Circular materials use rate (CMUR);
 - End-of-life recycling input rates (EOL-RIR);
- 2) Trade in recyclable raw materials (TRRM).

The biggest limitation to performing an in-depth analysis of the indicators is the fact that their collection has started at different times and with different frequencies – for CMUR there is available annual data from 2010 until 2022, for TRRM – from 2014 until 2023, and for EOL-RIR data is published on a triennial basis starting from 2013 until 2022. Given this state of the matters, we approached the data the following way:

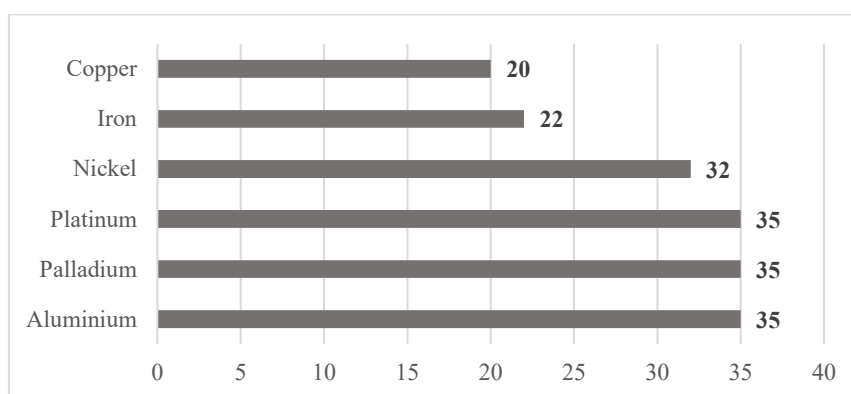
- A comparison is done in terms of ranking of countries in terms of CMUR and TRRM for the starting and the finishing year with available statistics;
- As for EOL-RIR, we did a comparison between the first and the last year with available statistics in terms in descending order so as to identify leading materials.

4. Results

The analysis of the three indicators revealed a rather diverging picture in terms of outcomes when comparing the data for the first and last years for which it exists.

Starting from the EOL-RIR, there are appealing developments. According to the definition of Eurostat, the indicator measures, for a given raw material, how much of its input into the production system comes from recycling of „old scrap” i.e. scrap from end-of-life products (Eurostat). The EOL-RIR does not take into account scrap that originates from manufacturing processes („new scrap”) (Eurostat, <https://ec.europa.eu/eurostat/web/circular-economy/database>). At present, Eurostat tracks information on a total of 30 raw materials and their EOL-RIR. The present analysis is focused on those materials with more than 20% EOL-RIR. Thus, it was found that for 2013, there are six in total, as depicted in Figure 2.

Figure 2. EOL-RIR 2013



Source: Eurostat.

https://ec.europa.eu/eurostat/databrowser/view/cei_srm010/default/table?lang=en&category=cei.cei_srm.

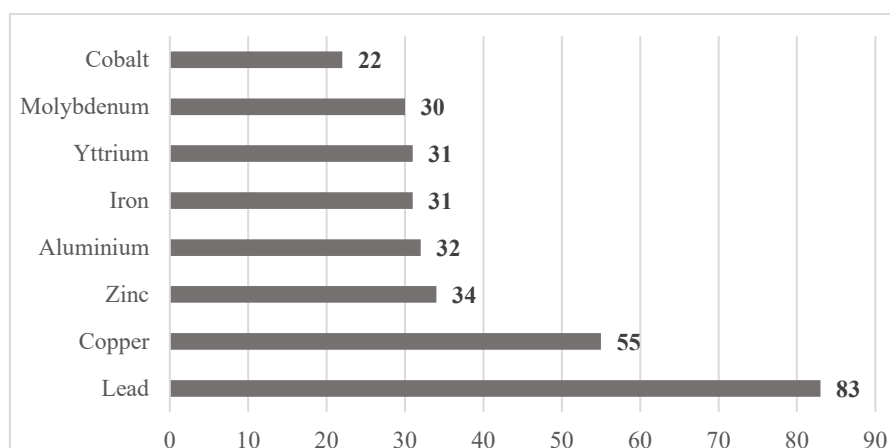
The analysis of the data shows that in 2013, aluminium, palladium, and platinum were the raw materials, in whose use in production 35% came from recycled parts, and this made them the raw materials with the highest EOL-RIR among all tracked materials. They were followed by nickel (32%), iron (22%), and copper (20%).

In 2022, the materials with EOL-RIR are already eight in total and presented in Figure 3.

Now lead has the leading position with 83% EOL-RIR, followed by copper (55%), zinc (34%), aluminium (32%), iron and yttrium (31% each), molybdenum (30%), and cobalt (22%).

When analyzed, data on the percentage change of CMUR from 2010 to 2022 also shows interesting outcomes, presented in Figure 4.

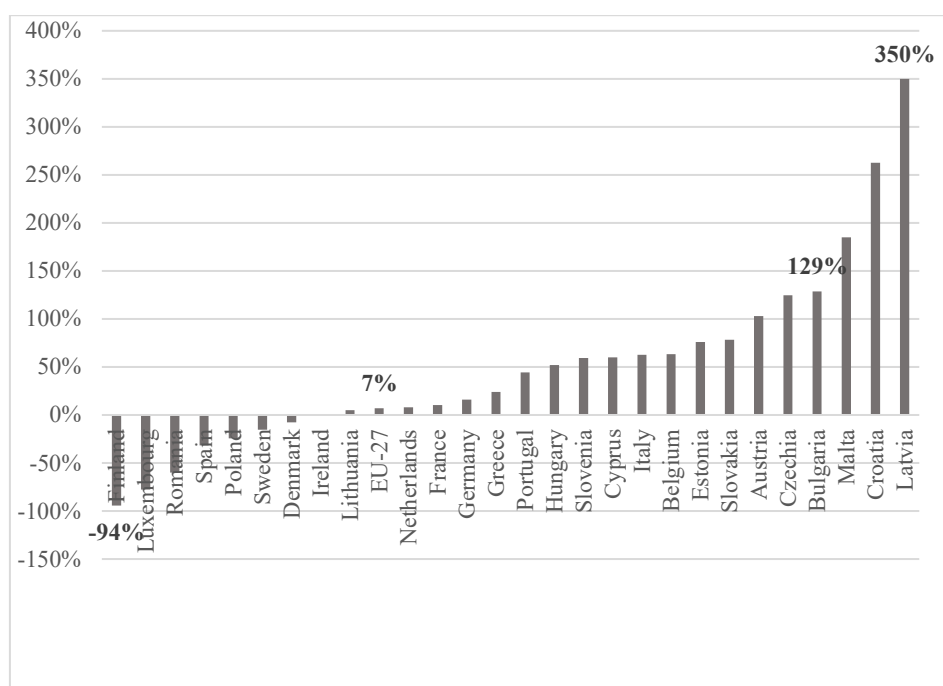
Figure 3. EOL-RIR 2022



Source: Eurostat.

https://ec.europa.eu/eurostat/databrowser/view/cei_srm010/default/table?lang=en&category=cei.cei_srm.

Figure 4. CMUR, percentage change (2010-2022)



Source: Eurostat.

https://ec.europa.eu/eurostat/databrowser/view/cei_srm030/default/table?lang=en&category=cei.cei_srm.

It is interesting to note that during the period between 2010 and 2022, when a number of EU regulations in the area of circular economy were operationalized, the particular countries had quite divergent results. Thus, seven of the countries: Finland, Luxembourg, Romania, Spain, Sweden, and Denmark have negative CMURs; however, Ireland has not experienced a change in its CMUR, while the rest of the countries have seen an increase in their CMURs. EU-27 have shown an increase of 7%. The country with the highest increase – of 350% – of its CMUR is Latvia, followed by Croatia (263%), Malta (185%), and Bulgaria (129%).

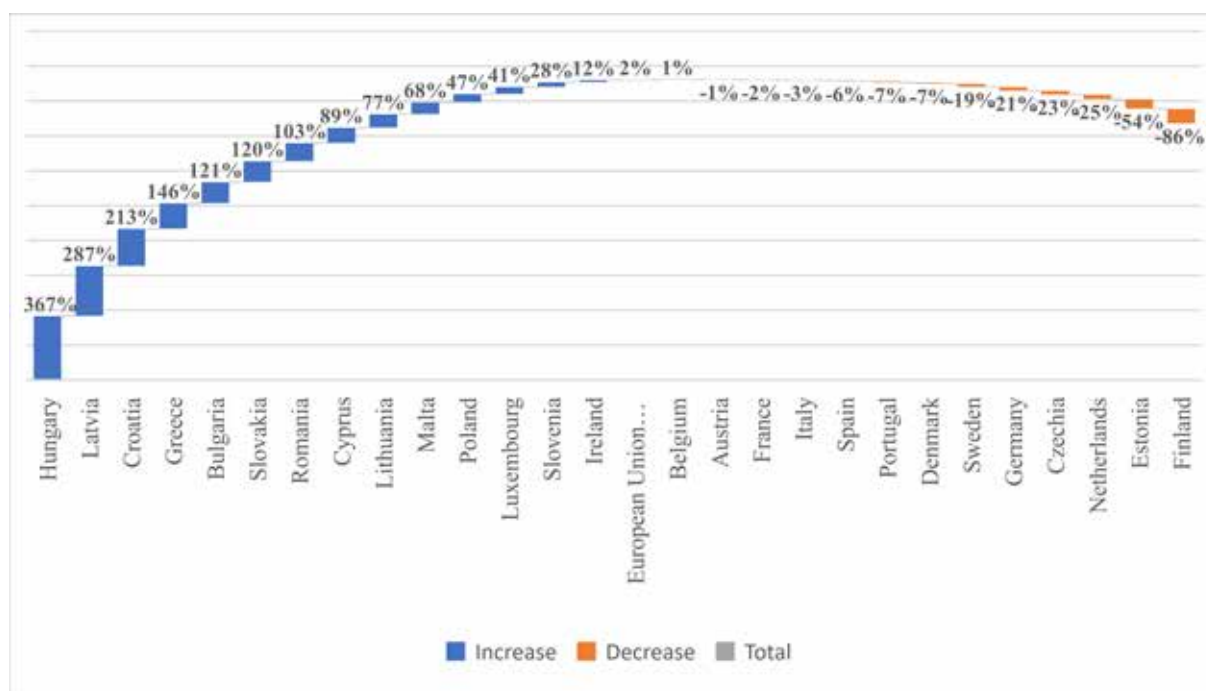
As regards the TRRM, data again reveal a picture that entices numerous questions, which could be the subject of a whole separate study. According to Eurostat, the indicator measures the quantities of selected waste categories and by-products that are shipped between the EU

Member States (intra-EU) and across the EU borders (extra-EU). Five classes have been selected: plastic; paper and cardboard; precious metal; iron and steel; copper, aluminium and nickel. The indicator includes the following variables:

- Intra-EU trade of selected recyclable raw materials (measured as imports from EU countries)
- Imports from non-EU countries and exports to non-EU countries of selected recyclable raw materials (as regards extra-EU trade). The indicator is based on International Trade in Goods Statistics (ITGS) published by Eurostat (Eurostat: <https://ec.europa.eu/eurostat/web/circular-economy/database>).

When analyzed closer, the comparison between the first and the last year with available statistics reveals that, for this indicator, too, there are a number of divergencies for the various countries as presented in Figure 5. While 15 of the countries have achieved an increase in their TRRM over the analyzed period, 12 have seen decreases. The EU as a whole has marked a modest increase of 2% of the indicator. The countries with the highest increase are Hungary (367%), Latvia (287%), Croatia (213%), Greece (146%), and Bulgaria (121%). Those with the most significant decrease in their TRRM are Finland (86%), Estonia (54%), the Netherlands (25%), the Czech Republic (23%), Germany (21%), Sweden (19%), Denmark (7%), Portugal (7%), Spain (6%), Italy (3%), France (2%), Austria (1%), Belgium (1%), Ireland (1%), Slovenia (28%), Luxembourg (41%), Poland (47%), Malta (68%), Lithuania (77%), Cyprus (89%), Romania (103%), Slovakia (120%), Bulgaria (121%), Greece (146%), Croatia (213%), Latvia (287%), and Hungary (367%).

Figure 5. TRRM (2014-2023)



Source: Eurostat.

https://ec.europa.eu/eurostat/databrowser/view/cei_srm020/default/table?lang=en&category=cei.cei_srm

5. Conclusion

The circular economy is a complex concept, and the road to it is complicated and full of surprises. The EU has adopted a positive approach towards the transition to circularity, seeking to incorporate and accommodate as much as possible the differences among its member states when building its regulations as a framework for its policies. A vast challenge remains the availability and collection of appropriate data, which would shed enough light on the multifaceted dimensions of circularity so as to enable policymakers and business leaders to

keep the direction most suiting their circumstances and long-run goals. Another challenge is the increasingly deep complexity of circularity within a globalized world where trade plays a significant role in material flows. Hence the numerous obstacles to designing and then reading the indicators in an enabling way. Despite that, the analysis of three of the key indicators for circularity – the CMUR, the EOL-RIR, and the TRRM shows that countries in the EU are rather growing apart when it comes to moving towards circularity than coming closer together. While some of them show exceptional results, others reveal significantly negative outcomes, showing deep incongruencies. This explains the overall sluggish movement of the EU as a whole towards circularity materializing in the aggregate figures for EU-27 of the selected indicators.

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HOW CIRCULAR ECONOMY AFFECTS FLYING

Abstract: *Tourism is one of the EU's most important sectors in terms of revenue and employment. The sector's impact on the economy is well recognised as a driver of economic development and an alternative for many destinations that were previously dependent on agriculture. The new EU requirements to adopt circular economy principles are putting the industry under great pressure, as tourists are becoming very sensitive to the quality of services provided. This is also the case in the aviation sector. In the EU, over the last decade, low-cost airlines have introduced statutory fares that have turned many cities into affordable tourist destinations. The low-cost transport market has reshaped the tourism industry and had an impact on the revenues of the aviation sector. This study explores the challenges of the EU circular economy for aviation and highlights the main barriers that the industry faces in meeting the EU's targets for 2050. The study aims to provide a complex picture of sustainable air transport in the coming years, based on the analysis of the latest data in this field.*

Keywords: *circular economy; green aviation; transportation in tourism; sustainable air transportation*

JEL: L83

1. Introduction

Moving from an economy based on consuming natural resources to a circular economy affects all economic sectors and influences how they are developed. In the field of transport, the adoption of sustainable practices is accompanied by major changes in the entire supply chain, leading to significant changes in the marketing policies of companies as well. The achievement of the zero emissions target set by the European Commission for Member States has also led to a real race between companies to promote their services as having zero impact on the environment, raising major questions about the terminology currently used, which is often misleading, and the ease with which citizens can be manipulated about the environmental impact of transport.

The targets set by the European Commission for the years 2030 and 2050 are currently considered to be extremely ambitious, taking into account the reports from 2022 on the main indicators assumed in the transport sector. It can therefore be seen that, for each of the indicators, the percentages achieved to reach zero environmental impact are far from the targets assumed for 2030 and 2050. With regard to air transport, in 2022 only 0.10% of the total amount of fuels used internationally will be in the category of sustainable fuels, which calls into question the achievement of a percentage of use of 13% in 2030 and 100% in 2050.

The main objective of this article is to identify the main barriers to the adoption of green practices in aviation, considering aviation is one of the last sectors to respond to the recommendations of the European Commission to achieve zero emissions by 2050. Given the important role of air transport at national and international levels and the knowledge that a country's increased air connectivity is similar to its economic competitiveness, the results are useful for stakeholders wishing to become aware of the latest aviation practices that could affect current business models.

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2. State of the Problem

In the case of aviation, the European Commission's target to achieve zero CO₂ emissions by 2050 is extremely ambitious given the structural changes required in the sector, including major changes in product design (e.g. electric aircraft), fuel used (replacing traditional fuel with sustainable fuel, called SAF), airport operations, control tower operations and ongoing campaigns to change passenger behaviour. Despite the obvious difficulties in achieving the goal of zero CO₂ emissions by 2050, the International Air Transport Association (IATA) has committed itself to achieving net-zero emissions from global aviation by 2021. This reinforces the European Commission's commitment (Bergero et al., 2023).

It should also be noted that in the air transport sector, the attitude of passengers towards environmental initiatives is for the most part neutral. Although in theory customer behaviour has changed over the last two decades and they are increasingly interested in the sustainable aspects of the products and services they buy when it comes to tourism services, including air travel for tourism purposes, the willingness to pay a higher price for the air ticket is reduced. Tourists are not willing to give up the comfort of travel, although overall they indicate that they are increasingly concerned about the impact of tourism, and implicitly air travel, on the environment, despite the fact that air travel is recognised as the largest contributor to CO₂ emissions from tourism (Peeters, Papp, 2024; Karakoc et al., 2022). This characteristic of tourists is described in several studies. For example, in their research, Korba et al. (2023) found that most tourists agreed that aviation should reduce its CO₂ emissions and adopt sustainable industry practices, but less than half agreed that it should do so at a cost to passenger comfort.

Aviation has a complex set of stakeholders including airlines, airports, air traffic control, aircraft and engine manufacturers, suppliers and national and international regulators. It should also be noted that most efforts are focused on developing alternative fuels and building aircraft that will revolutionise the sector. However, the reduction of CO₂ emissions is a concern for all activities in the sector. It would also be possible to achieve a significant reduction in emissions by making flight management more efficient. One concrete example is finding workable solutions to the current situation where hundreds of aircraft flying over major hub cities and needing to land at international airports like JFK New York can land and unload passengers in a reasonable time. Currently, these procedures can take up to an hour to complete, and during the wait, aircraft are left with their engines running, causing avoidable pollution (Lawrence, 2009).

It should also be noted that all these targets are set against a background of steadily increasing international demand. Nevertheless, we must bear in mind that demand for air transport currently varies considerably between countries and between individuals. This means that there is an uneven distribution of global demand and, by implication, of CO₂ emissions. According to studies, only 11% of international citizens travelled by air in 2018 and only 4% flew international. In terms of air travel by location, it is notable that the US has as much CO₂ emissions as the next ten largest emitters combined: UK, Japan, Germany, France, Australia, Russia, Canada, Spain, Turkey and Italy (Gössling, Lyle, 2021).

3. Methodology or Methodological Approaches

To achieve the main objective of the research, namely to identify the main barriers to ensuring sustainable practices in aviation, this article is based on a bibliometric analysis of the main academic sources published in the field of sustainable aviation and on a critical analysis of secondary sources (industry reports).

To do so, we analyzed original articles published between 2020 and 2024 in Web of Science journals (all databases), filtering by publication mode (we chose only articles published in OA) and written in English. The search was carried out on the topic of the article, that is, on the title, the abstract and the subject headings of the documents, using two terms established in the literature: „sustainable aviation” and „green aviation”. The results were interpreted using the VOSViewer software. Inclusion/exclusion criteria are justified below:

- Among the types of documents indexed in the WOS database, original articles make the greatest contribution in terms of novelty and innovation brought to a field of research;
- The search was carried out using the two terms identified in the title, the abstract and the keywords, as these three parts of an article are the most relevant for such an analysis;
- We chose the Web of Science database because it is considered to be one of the most relevant at the international level and is used at a national level as a reference base for institutional and individual research assessment;
- Only documents published in the period 2020-2024 were selected, as an earlier period would not have been relevant for the analysis of the current topic, i.e. accelerating the transition to sustainable aviation from 2020 onwards;
- Only Open Access articles were included in the review, as we wanted to comply with the European Commission's recommendation that the results of publicly funded research should be published in an open-access format, so that they can be used for other research;
- Only English-language documents were selected so that the items identified as trends in the research could be grouped into the correct clusters;
- The VOSviewer software was used because it is a dedicated software for systematic analysis of the literature, is scientifically validated and is also used in the analysis of the circular economy.

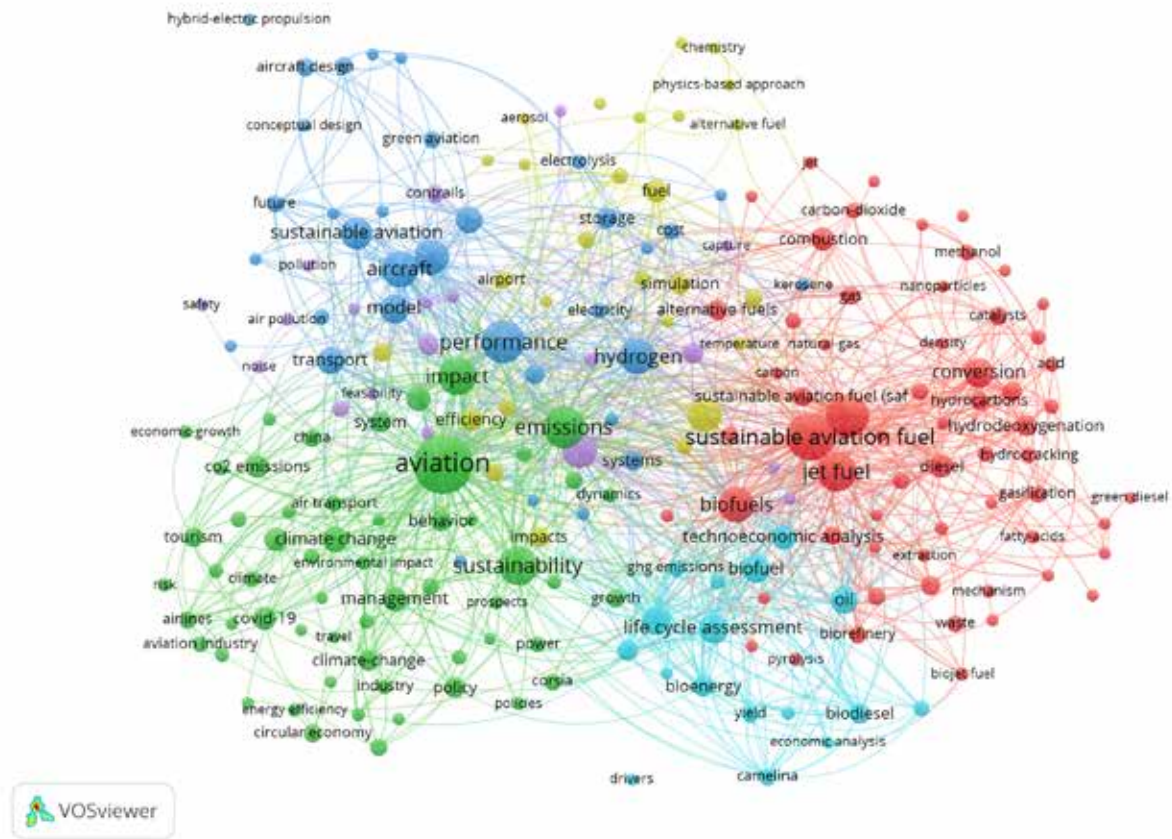
4. Research Results

In order to identify the main trends in research regarding sustainable aviation, we investigated the co-occurrence of the most used items in the selected papers. The co-occurrence map revealed that there are 216 items that were identified as appearing in at least five papers, which can be grouped into six clusters of interest or describe major trends in sustainable air transport research (Figure 1). The clusters suggest which is the actual focus of the research and what was considered relevant in the last five years.

The red cluster, containing 62 terms, concentrates research trends whose main research objective is the analysis of alternative fuels of different types: production of biodiesel, biomass, alternative fuels and fuels derived from vegetable oils. The green cluster contains 57 terms and includes research topics that are clustered around aviation from an infrastructure perspective. The main focus is on airlines, their practices, airports, air transport as a component of tourism services, the costs for stakeholders involved in the transition to sustainable air transport, and legislation forcing airlines to reduce CO₂ emissions (e.g. the CORSIA agreement). The blue cluster contains 34 terms and is concerned with product design, in particular the analysis of alternative aircraft designs. Terms such as aircraft, aircraft design, conceptual design, electrical and optimisation are among the most commonly used by researchers to describe their research. The yellow cluster, which contains 27 terms, covers topics related to the chemical industry as part of the fields involved in the green transition in aviation, and the purple cluster brings into

discussion elements related to the environmental impact of aviation, referring to pollution, noise, air quality, electricity use and water resources involved in the production of alternative fuels. The blue cluster contains 17 items and illustrates research focused on analysing the opportunities presented by the emergence and development of sustainable fuels.

Figure 1. The co-occurrence map of the selected items



Source: Generated with VOSviewer software.

The bibliometric analysis has highlighted the main trends in research on sustainable air transport. Taking into account the specificities of the subject, it can also be identified the main barriers to ensuring the transition from traditional air transport are of a technological nature. Other barriers that were identified after the analysis of the specialised reports are the following:

- There are concerns about securing the necessary quantities of sustainable aviation fuel. For example, in Europe, which is a densely populated region, the potential for agricultural land use for dedicated feedstock is limited. Because of potential competition with food production, this has traditionally been viewed critically by regulators;
- Emissions Trading Scheme (ETS) in the case of European Union Member States. Pressure on the aviation sector has increased recently with the phasing out of free allowances under the 'Fit for 55' package;
- The flagship ReFuelEU legislation, adopted in 2023, requires fuel suppliers to blend specified SAFs into fuel supplies from 2025 (World Economic Forum, 2024);
- Sustainable aviation fuel (SAF) is up to two to eight times more expensive than conventional jet fuel;

- Due to its complexity and the view that aviation accounts for „only 2% to 3% of global emissions”, aviation has often been seen as a sector that will decarbonise later than others;
- Passenger reluctance to accept the cost of low-emission solutions, lack of regulatory support, prohibitive SAF costs and concerns about quality, transparency and communication are other barriers to decarbonisation (Deloitte, 2024);
- The low public awareness of SAF (PwC, 2023);
- Sustainable fuels do not have a 100% clean reputation. Sustainable aviation fuels (SAFs) – sometimes known as aviation biofuels or jet biofuels – are low-carbon fuel alternatives for the aviation industry. Without proper sustainability certification, some of these fuels risk negative social and environmental impacts, such as negligible reductions in greenhouse gas emissions (or even increased emissions), reduced food security through the diversion of food-producing land to feedstock production, environmental degradation through deforestation, and unsustainable use of land and water (Sustainable Biomaterials, 2024);
- SAF is more expensive than conventional kerosene and can lead to an increase in ticket prices;
- Investment in SAF plants is perceived as high risk due to technology risk, feedstock challenges and revenue uncertainty faced by current SAF project developers. (KPMG, 2022).

Conclusions

Adopting green practices in aviation is not easy. The measures that can have a real impact are those that involve new technologies for aircraft construction and sustainable fuel production. Airline initiatives to reduce the amount of plastic products used on aircraft or at the airport, together with green initiatives at airports, have very little impact on reducing CO₂ emissions. The main aspects that will have a real impact on reaching the zero emissions threshold by 2050 remain the use of sustainable fuels and accelerating the production of electric or similar aircraft.

The present article provides an overview of the main barriers that the international aviation industry faces in achieving climate neutrality by 2050. The findings are useful for industry stakeholders such as researchers, airline representatives, policymakers and civil society representatives, and sound the alarm on the costs and economic implications, as well as the competitiveness of EU Member States. However, the article also has some limitations. The most important of these is the lack of a quantitative data analysis to complement the literature review, which would add more complexity to the results obtained.

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TOWARDS AN EU „FOREIGN ECONOMIC POLICY”

Abstract: *At present, the Westlessness concept coined in the Munich Security Report 2020 is widespread in the literature and the EU is confronted with many vulnerabilities and threats. The rise of nationalist forces in many European countries, synonymous with the motto „national sovereignty prevails” is antagonistic to the EU’s ambitions to become a global player. Besides, the economic situation worsened along overlapping crises. As an answer at the current challenges, the Report on the Future of European Competitiveness proposes a set of initiatives. In this paper are analysed those related to the EU foreign policy and its interrelations with major EU policies/strategies. De-risking and reducing dependencies, using more efficient tools to react to unfair practices, as well as more unity, coordination and common action in the EU are essential for the future of Europe.*

Keywords: *international relations; European Union; Global South; multilateralism; competitiveness*

JEL: *F02; F50; F59; O52*

1. Introduction

The global economic environment has changed „fundamentally” over the past decade (Baur, 2024). For the European Union (EU), there have been both internal and external shocks, such as: the migration crisis, the rise of populism, nationalism and extremism, disunity, Brexit, the trade war between the United States and China, the COVID-19 pandemic, the war in Ukraine. The relationship with China changed together with the awareness of the risks accompanying a too high dependency on China as a dominant supplier of critical raw materials. Similarly, the economic growth model of many EU member states based on cheap gas and oil from Russia was forced to change course, albeit the new „green” path is costly and takes time. Capital has become much more expansive and the indebtedness of nations is on the rise.

The EU remains a key actor in trade and investment flows, nevertheless, its shares in the global economy are decreasing. The overall power of the EU is declining, owing primarily to its „politico-institutional structures that continue to constrain its capacity to adopt and implement common external policies” (Webber, 2016).

The geopolitical competition between major powers is present in trade, investment, connectivity, technology, and has been translated into broad EU foreign policy objectives and goals since 2021. China and Russia are considered „the most serious threats to Western power since the Soviet Union” (Ludewig, 2021). The EU moral authority, similar to the larger Western authority, „seems increasingly pilloried in many places”. This was coined at the Munich Security Conference of 2020 as „Westlessness”, with „symptoms” such as „populism, nationalism, right-wing extremism, terrorism and democratic fatigue” (Ludewig, 2021).

This paper synthesizes and interprets the recent Report on the *Future of European Competitiveness* from the perspective of the EU foreign policy and its interrelations with major EU policies/strategies.

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2. State of the Art – The Need for a Genuine EU Foreign Economic Policy

The concept of foreign economic policy is not new (Bearce, 2021). Neither is the understanding that the EU foreign policy should focus more on economic aspects, understood as in the definition given by Sargent (2017): namely the mediation and management of economic flows across borders.

The Report on the *Future of European Competitiveness* is not the first one emphasizing the need for uniting the international security policy objectives and international economic goals of the EU. IfW-Bruegel-DIW Berlin (2021) stresses that „the common foreign and security policy is still very much underdeveloped and remains on the national level while the field of trade, monetary, competition and single market policy almost completely fall under the exclusive competence of the union”. As competitors such as the US and China do not face such impediments, the EU „has to overcome this separation in order to enable effective implementation of its targeted assertiveness”. The EU has to design defensive and offensive strategies against „weaponized interdependence” (IfW-Bruegel-DIW Berlin, 2021).

Baur (2024) concludes that „in terms of economic security, the approach of targeted de-risking is generally pointing in the right direction. The focus should be on reducing dependencies in critical areas, not on cutting trade relations per se”. Protectionism should be avoided, as intensifying trade and investment relations with like-minded partners is one of the keys to strengthening economic security. Nonetheless, Alcidi et al. (2023) underscore that „in practice, it will be very difficult to strike a balance between openness and autonomy”, as the latter can lead to increased state intervention in the markets, such as trade barriers and state subsidies.

Old papers, with reference to the US, are good lessons for the EU and its way forward. Pasvolsky (1941) is worth mentioning: „... during the war or after the war, we must do everything that is necessary to protect our national interest and to promote the well-being of our people”.

3. Methodological Approaches

The investigation is based on a qualitative analysis, starting from the Report entitled *The Future of European Competitiveness* (Draghi, 2024a). Among keywords, there are: *foreign economic policy, competitiveness, innovation, technological progress, education, social inclusion, solidarity, decarbonisation, digitalisation, defence, increasing scale, standardisation and interoperability*.

In the first part of the Report, foreign economic policy/policies are mentioned many times (Draghi, 2024b).

First, „industrial strategies today – as seen in the US and China – combine multiple policies, ranging from fiscal policies to encourage domestic production, to trade policies to penalise anti-competitive behaviour, to foreign economic policies to secure supply chains”. In the EU, the legislative process is too long, and sometimes there is no coordination between national and EU efforts and the veto rights may block important initiatives.

Second, the EU needs a „genuine” foreign economic policy. „The EU will need to coordinate preferential trade agreements and direct investment with resource-rich nations, build up stockpiles in selected critical areas, and create industrial partnerships to secure the supply chain of key technologies”. But contrary to U.S. protectionism, the Draghi Report supports free trade agreements as tools to enhance security and de-risking (Steinberg, Bergmann, 2024).

The Report underlines also the importance of developing „a strong and independent defence industrial capacity that allows it to meet the increasing demand for military assets and equipment and remain at the forefront of defence technology”.

Third, the new Economic Security Strategy proposed in June 2023 is considered a much-needed instrument. That was followed by a package of five new initiatives in January 2024, focused on inbound and outbound investment screening, export control, dual-use and advanced technology research and protection from leaking to strategic competitors. One of the targeted competitors is China, considered simultaneously a cooperation partner, a competitor and a systemic rival.

The Report criticizes the still low coordination in the EU’s foreign direct investment (FDI) decisions. It is concluded that fragmentation associated with the FDI screening „prevents the EU from leveraging its collective power in FDI negotiations and complicates the formulation of a common FDI policy”.

Fourth, the EU needs to secure critical resources, including critical raw materials and key inputs for various industries. For instance, strategic dependencies exist also in the field of critical technologies for the digitalisation of the economy: the EU relies on foreign countries for over 80% of digital products, services, infrastructure and intellectual property. It is emphasized that dependencies are extreme for semiconductors, as this industry is dominated by a small number of large players.

4. Research Results

The EU Industrial Strategy of March 2020, updated in May 2021, highlights three drivers of the transformation of the EU industry: the green and digital transitions, together with international competitiveness. The European Commission (EC) emphasizes the need to strengthen the EU’s open strategic autonomy (OSA) through agreements with international partners with similar views and industrial alliances in strategic areas.

The OSA, a result of recent challenges and changes, is seen as a new tool „to protect and promote European interests and values in a changing world”: the EU remains as open as possible but also intends to become as autonomous as necessary (Schmitz&Seidl, 2023).

Trade policy of the EU continues to be based on „openness, multilateralism and cooperation”, however, in a time of a weaker rules-based multilateral trading system, even large EU economies like France or Germany „can only act on an equal footing with major economic players like China or the United States as part of a united Europe” (Baur, 2024).

Import dependencies, exposure to global value chains and access to critical raw materials reflect that the EU economy is vulnerable to external shocks, especially in the context of the return of great power competition (US-China) and moving away from a multilateral trade system based on rules and coming closer towards a system dominated by power (Alcidi et al., 2023).

Among the key factors to bolster OSA are the following: increasing support for research and development, manufacturing of strategic net-zero technologies, implementing an ambitious economic security strategy, and boosting investments in areas of critical importance where the EU displays high dependencies (EC, 2023).

The strategic choice of openness emphasizes that the EU prefers to act multilaterally and with like-minded countries, such as the United States (Alcidi et al., 2023). According to the EC (2021), the transatlantic relationship remains „the biggest and most economically significant partnership in the world”, while the EU’s trade and investment relationship with China is „important and challenging”. Strengthening relations with countries in and around Europe

(especially those who are geographically closest, including Africa) is a priority. The network of trade agreements is seen as a way to diversify external relations and build/consolidate relations with like-minded partners. The EU has in place the largest trade network in the world, with over 40 individual agreements with countries and regions (EC, n.d.) and many other under negotiation (for example, with India, Indonesia, Philippines and Thailand, pointing to the EU renewed efforts to be more active in the Indo-Pacific).

Similarly, the connectivity initiative Global Gateway launched in December 2021 is a way „to boost smart, clean and secure links in digital, energy and transport sectors and to strengthen health, education and research systems across the world” (EC, n.d.). It is „a European countermove” to the Chinese Belt and Road Initiative (Karjalainen, 2023) and is considered the external dimension of the EU's twin climate and digital transition agenda (Bilal & Teevan, 2024). The Global Gateway is seen as one of the instruments for reducing fragmentation in EU global action (Tagliapietra, 2022). This, together with other initiatives will support the EU future foreign economic policy.

All the aspects mentioned above have to be correlated with the concept of the EU as a normative power.

The „geopolitical Commission” underpins the „EU’s role in the world as a promoter of freedom, democracy, and the rules-based order” (EC, 2024). The EU is the most important provider of development and humanitarian aid worldwide.

EU characterizes itself as a defender of values, norms and standards and in the literature is described as a normative power (Manners, 2002), from the standpoint of human rights and democracy, regional integration, and multilateral organizations and also as a global trade power, a provider of aid, and a political and security actor (Balfour et al., 2022). However „in the Global South, it is not seen as a regulator and standard setter in the global economy or governance” (Balfour et al., 2022).

BRICS for instance assume themselves the role of normative power and are recognized as such by others. This is true if one admits the definition by Kavalski (2013) that „normative powers are those actors that are recognized as such by others”.

Changing the other is essential to normative power (Gerrits, 2009). However, the EU’s ability to export its norms is limited, as demonstrated by the new Divide between West and East. Besides, Europeans and non-Europeans tend to think differently about the EU’s global role and relevance (Gerrits, 2009). The EU is a distinct power as it is extracting its prerogatives from the root of civilian, not military power (Duchêne, 1972). As long as Global South and the developed world consider themselves to be the right „normative power”, but disregard each other, there will be conflicts in the world economy and no one will be on the safe side.

5. Conclusions

The Future of European Competitiveness brings to the forefront weaknesses of the EU foreign policy and the need for change. The economic foreign policy has a great role to play in the future in order for the EU to become more competitive and close the innovation gap with the US and China. Security and competitiveness mean de-risking and reducing dependencies, using more efficient tools to react to unfair practices.

The recent Report is a renewed call to unity, coordination and common action in the EU. It is also a call to more secure supply chains for critical raw materials and technologies, by

increasing production capacity at home in strategic sectors, by expanding the European industrial capacity in defence and space.

The EU will continue to act multilaterally and consolidate cooperation with like-minded countries. It will develop further its network of free trade agreements and support FDI, both inward and outward. However, it will attentively monitor the economic flows across borders, while securing access to critical resources.

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THE CONTRIBUTION OF TRADE IN SERVICES TO EUROPEAN INTEGRATION

Abstract: During the last decades, trade in services (TIS) has a significant contribution to European integration, sustaining economic growth, enhancing competitiveness and fostering social cohesion within the European Union (EU). As the EU continues to deepen its integration, particularly in areas like digital services, financial and professional services, the importance of TIS will grow, consolidating its role in the European economic development. TIS is essential for the long-term strengthening of European integration and also for the EU's global competitiveness, with policymakers working to improve the regulatory framework in this area.

Keywords: trade-in services, European integration, EU service regulations, digital services.

JEL: F13, F15, L8, O24

1. Introduction

The integration of the European Union (EU) has been a complex and multifaceted process, with trade-in services (TIS) playing an increasingly important role. As services have become more tradable under World Trade Organization rules and regional trade agreements, they have emerged as a crucial driver of economic competitiveness and development, achieving significant productivity growth, due to many factors such as increased scale, greater competition, and the diffusion of technology (Helble, Shepherd, 2019).

The free movement of services between EU member states was one of the four key components of the EU single market, established in 1993, designed to remove barriers and integrate economies across EU member states. Given the high contribution of services to EU GDP (approximately 65%) (WBG, 2024), their liberalization within the EU market has been a major objective for deeper market integration, this process being quite complex due to the major differences between national regulations of the member countries and the complexity of service characteristics. A major role in supporting TIS within the EU was represented by the Services Directive adopted in 2006, a key EU legislative instrument aimed at reducing barriers to the provision of cross-border services, simplifying regulations and stimulating competition. Further liberalization of services is seen as crucial for enhancing competitiveness, reducing costs for consumers, and fostering innovation within the EU economy.

2. State of the Art

The trends of EU TIS and also the regulatory frameworks, sectoral impacts, and service integration within the EU single market continue to be relevant research topics related to the EU integration process. Significant contributions have been made by Ebeke et al. (2019) and Freeman et al. (2022) who investigate the effects of the EU service integration, highlighting the performance achieved and advantages of EU countries in many service sectors. Adjutor et al. (2024) demonstrate that the services market in the EU is not yet fully integrated, due to the variety of service characteristics with differences in their trading modes, and hence the difficulties in the service regulations harmonization. Fiorini and Hoekman (2018) associate service productivity with market access liberalization and the quality of national reforms,

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finding moderate effects of the EU Services Directive. Dettmer (2014) evaluates the reallocation of business services trade within the EU, fostering the service value-added chains and the intensification of intra-EU TIS. In their article, Sapir et al. (2015) provide an in-depth look at the progress and challenges of intra-EU service trade, underlying the slow implementation of the Services Directive and the persistence of the national regulatory discrepancies. Our work offers an up-to-date perspective of the EU TIS, as an important part of the EU economic integration, emphasising the developments of the intra-EU service trade flows, the sectoral service regulations, and also their current challenges.

3. Methodological Approaches

This paper addresses the following analysis sections: (i) a synthetical approach to the role of a single market in EU trade in services; (ii) the statistical analysis of intra- and extra-EU TIS flows, during 2010-2022, emphasising the intra-EU TIS by member states and categories of services as a result of service market integration; (iii) the importance of EU strategies and regulations in sustaining the new developments of service integration, emphasizing their current stage for the main categories of services; (iv) some new challenges of EU TIS related to various economic, technological and political issues. Our quantitative analysis is based on data related to the service sector and TIS in the EU, provided by the European Commission, World Trade Organization, World Bank and Statista. The main findings based on the recent trends in EU TIS provide some qualitative conclusive perspectives regarding the integration of services in the EU single market, complemented by a detailed analysis of the regulations adopted in the EU with an impact on the TIS integration.

4. Research Results

TIS plays a very important role in the EU economy, as evidenced by its contribution to the main EU development indicators such as: TIS contribution to EU GDP (30.6%, in 2023) and employment (71%, in 2022) (WBG, 2024). The EU is the world's largest service exporter (with 2980 billion dollars in 2023, ranking 22.4% of global service exporters, in 2023) (WTO, 2024).

4.1. The role of a single market in the EU TIS developments

The EU single market has had significant effects on intra-EU TIS, enhancing both the volume and quality of trade activities between member states. The key effects of the EU's single market on TIS have included: the elimination of barriers, increased competitiveness, the growth in cross-border services, the freedom of movement and establishment, and lately the digital services growth.

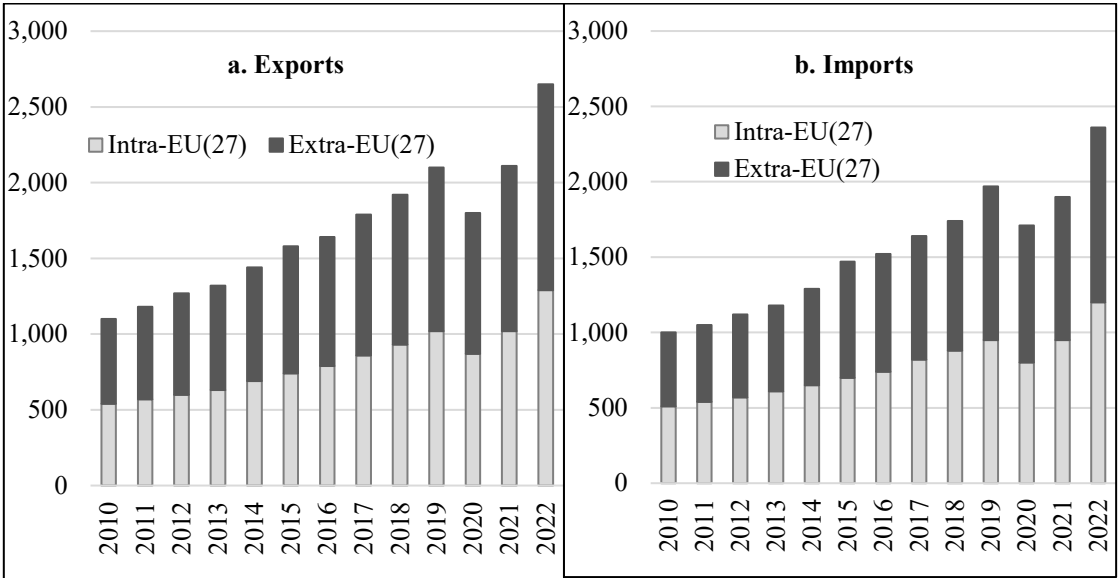
The single market aims to remove regulatory and administrative barriers, fostering the exchange of services across borders, the service providers from any EU country having the possibility to operate in other member states with fewer restrictions. An important contribution to EU service integration was played by the EU Services Directive, in force since 2006, as a major step in the EU service market harmonization, particularly in finance, transport and professional services. By creating a level playing field, the single market increases competition among service providers, forcing businesses across the EU to improve their efficiency, leading to better-quality services at competitive prices and benefiting consumers across the region.

The EU single market has had a transformative impact on TIS, driving growth, efficiency, and competitiveness across the region. Despite the benefits, some barriers persist, particularly in highly regulated sectors such as health services or legal services, with national regulations still impeding their full integration. The European Commission continues to focus on enhancing service integration within the single market, as the full removing remaining barriers can significantly increase the EU's economic development.

4.2. The evolution of EU TIS flows

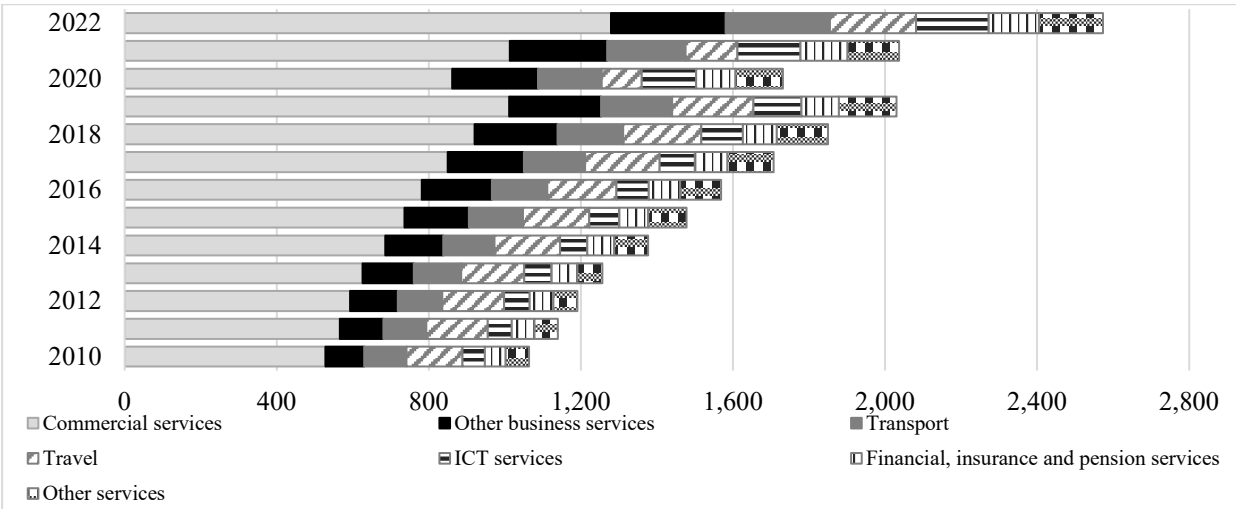
The success of the single market in promoting services trade integration lies in the free movement of services, which has removed barriers to trade between the member states and allowed businesses to operate throughout the markets of EU member states. Nowadays, the intra-EU TIS represents more than 50% of the total EU TIS (Figure 1), illustrating the importance of the single market in sustaining trade activity within the region.

Figure 1. Intra- and extra- EU TIS flows, during 2010-2022 (billion euros)



Source: Author’s representation based on Eurostat (2024) and Statista (2024).

Figure 2. Intra-EU TIS, by services, during 2010-2022 (million euros)



Source: Author’s representation based on Eurostat (2024) and Statista (2024).

As revealed in Figure 2, commercial services and other business services are some of the most integrated sectors within the EU's single market. These services benefit from various regulatory frameworks and initiatives that promote cross-border trade, reduce administrative burdens, and ensure a level playing field.

4.3. The role of regulations in EU service integration

Regulation plays a critical role in sustaining the services integration within the EU by ensuring that cross-border TIS operates easily, efficiently, and fairly. In the EU's single market, certain services sectors are more integrated than others, benefiting significantly from harmonized regulations, mutual recognition, and fewer barriers to cross-border trade (EC, 2024, EUR-Lex, 2024).

- (i) The commercial services are highly integrated due to the EU's regulatory framework that simplifies cross-border operations. The Services Directive and other specific trade facilitation regulations ensure that retailers and distributors can expand their operations across member states without facing significant bureaucratic hurdles.
- (ii) The digital services benefit from the Digital Single Market Strategy implemented since 2015 (which breaks down barriers to online commerce) and specific regulations regarding digital payments (Payment Services Directive – PSD2), data protection rules across member states (General Data Protection Regulation – GDPR) and free flow of digital services (Geo-blocking Regulation). The EU competition regulations related to monopolistic practices in commercial and business services ensure a fair market and foster their integration.
- (iii) The intra-EU trade in professional services is supported by the Mutual Recognition of Professional Qualifications Directive that allows professionals to work and provide services in different EU countries with fewer bureaucratic obstacles, helping their further integration. The Professional Services Directive simplifies the licensing and qualifications process, enabling professionals to operate in different countries more easily.
- (iv) Transport services are also highly integrated through EU regulations. The Single European Sky initiative harmonizes air traffic management systems across the EU and consequently ensures efficiency and reduced costs. In road transport, the EU Mobility Package simplifies rules for cross-border trucking and logistics services, ensuring that goods can move freely across borders while protecting workers' rights. Logistics and supply chain services are well integrated within the single market, particularly for road transport services, which benefit from transport-specific regulations, ensuring smooth operations for cross-border transportation and improving supply chain efficiency.
- (v) The financial services are among the most integrated due to regulations like the PSD2, which allows cross-border payments and enables consumers and businesses to access banking services across the EU. The Capital Markets Union also helps create a more unified financial market by making it easier for companies to raise capital across borders. The Markets in Financial Instruments Directive, adopted in 2014, ensures that insurance and investment services companies can more easily operate across borders under common rules.
- (vi) Telecommunications services are highly integrated, largely due to the Telecommunications Regulatory Framework, which harmonizes rules for mobile networks, data services, and internet providers across the EU. The regulation ensures consistent service quality and

competition across borders, helping drive investment and telecommunication services integration (EC, 2024, EUR-Lex, 2024).

Summarizing, our synthesis of the regulations adopted within the EU in various service sectors demonstrates the support of the EU institutions and member countries in supporting the integration of the EU services market.

4.4. New challenges for the EU service integration

Despite the above significant advancements in the EU integration of services, some barriers still exist. Divergent national bureaucratic barriers, and licensing requirements in highly regulated sectors, lingering protectionist measures in some member states continue to hinder full services integration. This highlights the need for ongoing efforts to refine and enforce existing regulations. The new challenges of EU TIS integration stem from evolving economic conditions, technological advancements, and geopolitical changes.

- (i) The rise of digital platforms and services has been rapid, and while the Digital Single Market Strategy seeks to remove barriers, challenges remain in ensuring harmonized digital regulation across member states. Even if new rules like the Digital Services Act and the Digital Markets Act require businesses to adapt to stricter oversight and data governance, the digital standards aligning across diverse national systems remain complex. As more services are digitized, cybersecurity and compliance with regulations like GDPR pose increasing challenges. Balancing innovation with privacy protection continues to be a concern, particularly as businesses handle large amounts of personal and financial data across borders.
- (ii) Despite the Services Directive and the Professional Qualifications Directive, there remain significant barriers in certain highly regulated sectors, such as legal services, healthcare, and education. Mutual recognition of qualifications is still inconsistent, and national regulations in these fields often remain protective, limiting cross-border competition.
- (iii) Another important challenge is related to fiscal harmonization across EU member states, countries having different tax policies, and EU TIS often facing complex tax structures. The lack of a unified taxation system for digital services can create inconsistencies and higher costs for companies looking to expand their services across borders.
- (iv) As part of the European Green Deal regarding the EU carbon-neutral by 2050, services, especially those related to energy, transport, logistics and finance, are reshaped by new regulations aimed at reducing emissions and improving sustainability. However, adapting to these regulations can be expensive and complex for businesses, particularly for service providers, the new EU regulations promoting renewable energy services have to be also aligned with national policies, in order to enhance the role of green services across the region.
- (v) Geopolitical tensions, regional and between different international partners, have significant implications for the EU's service trade. Protectionist policies, sanctions and trade restrictions could disrupt service transactions, forcing EU businesses to navigate a more complex global trade environment.

All these challenges demonstrate the complexity of achieving a fully integrated services market in the face of changing regulatory, technological, and geopolitical dynamics.

5. Conclusions

Since the implementation of the free movement of services within the EU, intra-EU TIS has registered considerable developments, contributing to the EU integration process. As the backbone of the service integration, EU regulation along with favourable national legislation ensures the necessary legal support for TIS, maintaining open and competitive service markets. This enables businesses and professionals to operate easily across borders, with important benefits for EU economies in terms of increasing efficiency and reducing trade barriers.

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REGIONAL COOPERATION AS A COMPETITIVE ADVANTAGE IN ATTRACTING FOREIGN DIRECT INVESTMENT: THE CASE OF THE EUROPEAN UNION MEMBER STATES FROM NORTHERN EUROPE

Abstract: *This study explores the role of regional cooperation as a competitive advantage in attracting foreign direct investment among the European Union member states in Northern Europe. Drawing on the example of countries such as Denmark, Finland, and Sweden, the research highlights how regional integration and collaboration contribute to a favourable investment environment. The study examines the impact of shared economic policies, regulatory harmonization, and cross-border infrastructure development in enhancing the region's attractiveness to international investors. The findings suggest that regional cooperation not only boosts individual country competitiveness but also fosters a collective regional identity that amplifies market access, innovation, and sustainability, thus strengthening the position of Northern European countries in the global foreign direct investment landscape. This analysis provides valuable insights for policymakers on leveraging regional dynamics to enhance foreign direct investment inflows and economic growth.*

Keywords: *foreign direct investment; regional cooperation*

JEL: F21; F23

1. Introduction

In today's interconnected global economy, countries compete for foreign direct investment to fuel their economic growth, boost employment, and foster technological innovation. European Union member states from Northern Europe, particularly those following the Scandinavian model – Sweden, Denmark and Finland – present a unique case where regional cooperation, social welfare policies, and strategic investments offer competitive advantages in attracting foreign direct investment. By balancing a robust state role in economic management with policies that promote sustainability, innovation, and openness, these nations have created environments that appeal to foreign investors. This article explores how these nations leverage regional cooperation to maintain their status as attractive destinations for foreign direct investment.

The article is primarily qualitative in nature, using secondary data analysis to explore how regional cooperation can serve as a competitive advantage for attracting foreign direct investment. The objective is to analyze the strategies and outcomes of Sweden, Denmark and Finland, and their regional alliances, specifically within the EU, in fostering foreign direct investment inflows.

2. State of Play

Foreign direct investment (FDI) plays a very important role in economic development by providing capital, technology transfer, and employment opportunities to host countries. In an increasingly competitive global environment, regions – comprising groups of neighbouring countries – are adopting cooperative approaches to attract FDI. These regional collaborations can significantly enhance a region's attractiveness to foreign investors by leveraging shared

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infrastructure, markets, and institutional frameworks. Special economic zones and infrastructure facilities, including energy supply, communication systems, and transportation, shape production and transaction costs, thereby affecting the incentives to attract FDI into a country or region. Legal frameworks and institutions established through bilateral agreements and supranational integration offer key signals and incentives to potential investors, which in turn boosts foreign direct investment flows. Research has shown that FDI inflows are positively correlated with regional market size, as firms can scale operations and access multiple markets under uniform rules (Tocar, 2019). Targeted cooperation in strategic sectors such as renewable energy, manufacturing, or digital innovation has proven to be an effective FDI attraction tool (European Commission, 2009).

3. Methodology

Data Collection and Analysis

The research for the article would rely on secondary data. This includes the collection of published reports, academic papers, government publications, and data from reliable organizations. FDI flows and statistics from Northern European countries can be obtained from their national statistics but also from sources like Eurostat, the Organisation for Economic Cooperation and Development (OECD), the International Monetary Fund (IMF) and the World Bank (WB). Regional cooperation initiatives, such as those led by the Nordic Council, provide detailed insights into regional agreements, infrastructure projects, and regulatory harmonization efforts. Academic papers will offer insights into the theoretical foundations of regional cooperation and FDI attraction.

The analysis will involve comparing and contrasting the available data to assess how regional cooperation affects FDI. The specific focus will be on identifying patterns that show how integrated markets, harmonized regulations, and collaborative infrastructure projects have influenced FDI trends. A key analytical method is the thematic analysis, which examines how different themes of regional cooperation (e.g., market integration, regulatory harmonization, infrastructure development) have contributed to creating a favourable environment for FDI.

Theoretical Framework

The article would be grounded in some of the key theoretical models such as:

- Eclectic Paradigm (OLI Model) – proposed by John Dunning, this model analyses FDI based on three advantages – Ownership, Location, and Internalization (Dunning, Lundan, 2008). The article will explore how regional cooperation enhances the „Location“ advantage for Northern European countries;
- Gravity Model of Trade and Investment – this model suggests that countries with geographical proximity, common markets, and similar regulations are more likely to attract FDI (Crespo, Fontoura, 2007). Northern European countries fit this profile, making them attractive to foreign investors;
- Institutional Theory – this theory highlights how formal institutions (like the European Union) and informal institutions (regional alliances) help reduce transaction costs and uncertainty for investors, thereby enhancing FDI inflows (Francis et al., 2009).

Verification and Validation

To ensure the credibility of the findings, the following steps will be taken:

- Triangulation – using multiple data sources (e.g., statistical databases, government reports, academic research) to cross-check facts and ensure consistent findings;
- Peer Review – the article could be reviewed by subject-matter experts or policymakers familiar with the region and FDI trends to ensure accuracy and relevance.

Conclusion and Recommendations

The article will conclude with key findings, summarizing the role of regional cooperation as a competitive advantage for attracting FDI. Based on the analysis, recommendations for other regions or countries looking to replicate the Northern European model of regional cooperation will be offered.

4. Results

The Scandinavian model is characterized by strong social welfare systems, progressive taxation, and high levels of public sector involvement in the economy. The state plays an active role in ensuring social well-being by redistributing wealth through taxation and providing comprehensive social services such as healthcare, education, and unemployment benefits (Shamov, 2010). This model not only fosters social stability but also creates a resilient economic environment which is crucial for long-term investments. For foreign investors, stability and predictability are key.

Regional cooperation among neighbouring countries with common social models can strengthen economic frameworks, improve infrastructure, and create an environment conducive to investment. By aligning policies, pooling resources, and offering larger and more integrated markets, countries can enhance their attractiveness to multinational corporations and investors. For FDI, which often seeks stability, predictability, and access to large consumer bases, regional collaboration offers compelling advantages. In this sense, European Union (EU) membership provides Sweden, Denmark and Finland with an institutional platform to coordinate economic policies, reduce regulatory barriers, and promote cross-border trade and investment flows.

Northern European EU member states, including Denmark, Sweden and Finland serve as an illustrative example of how regional cooperation can amplify a country's FDI appeal. These nations have long-standing economic, social, and political ties, and their participation in the EU has further strengthened these bonds. Through both formal EU mechanisms and broader regional agreements, these countries have achieved several advantages that make them attractive FDI destinations:

- Integrated Economic Zone

According to recent studies Nordic cooperation is largely influenced by the EU integration of the countries concerned (Stie, Trondal, 2020). Northern European EU member states benefit from the EU's single market, which ensures the free movement of goods, services, labour, and capital across borders. This integration allows foreign investors to tap into a larger market rather than being confined to individual national economies. The harmonization of trade and investment policies within the EU provides predictability and reduces the costs and complexities associated with doing business across multiple jurisdictions.

Northern European countries have leveraged the institutional framework of the EU to deepen their regional cooperation. The EU's investment in regional development, infrastructure, and cross-border collaboration provides significant support for Northern Europe's FDI strategy. Initiatives such as the EU's Cohesion Policy, which allocates funding to reduce regional disparities, have allowed these countries to invest in areas that boost their competitiveness, from infrastructure to innovation. Moreover, the EU's trade agreements with global partners give foreign investors in Northern Europe preferential access to other global markets (Tocar, 2018).

- Shared investment in Infrastructure and Innovation

Northern European countries cooperate extensively on infrastructure projects, such as energy grids and transportation networks, which facilitate cross-border trade and investment. The Øresund Bridge between Denmark and Sweden is a prime example of such cooperation, boosting regional economic activity. This seamless infrastructure makes the region an attractive hub for businesses looking for efficient supply chains and access to different markets within the region. Additionally, joint research initiatives and innovation hubs, often funded through EU mechanisms, attract FDI in sectors like biotechnology, artificial intelligence, and cybersecurity.

Regional cooperation also fosters innovation through the sharing of knowledge and technology. Northern European countries have strong educational systems and are home to leading research institutions. By working together, these countries have created innovation hubs that attract high-tech industries and R&D investments. Created by the Nordic Council of Ministers in 2005, NordForsk is an organization that facilitates cooperation in research and research infrastructure. It serves as a prime example of enabling collaborative projects that benefit from the combined expertise of governments, universities, research centres, and private enterprises across the region. This network of innovation is a significant draw for foreign investors looking to tap into cutting-edge technologies and skilled workforces.

Sustainability has become a focal point for FDI, with many investors seeking opportunities in green technologies and environmentally sustainable industries. Northern European countries have positioned themselves as global leaders in sustainability, with a strong focus on renewable energy, circular economies, and sustainable business practices. Regional cooperation has played a role in advancing this agenda, with joint initiatives such as the Baltic Energy Market Interconnection Plan (European Commission, 2008) aimed at creating a more integrated and sustainable energy market. These efforts attract foreign investors who are increasingly prioritizing sustainability in their decision-making.

- Political Stability and Strong Institutions

Political stability is a critical factor for FDI, and Northern European countries have a long history of stable governance, strong institutions, and low levels of corruption. By cooperating on security, governance, and policy alignment through the EU and other regional organizations like the Nordic Council, these nations offer a reliable and predictable environment for investment. This political cohesion reinforces their collective appeal, reducing risk for foreign investors who prioritize long-term stability when entering new markets⁴. (Jimenez et al, 2011).

Northern European countries have proven adept at responding to global economic challenges, such as the COVID-19 pandemic and geopolitical tensions. They have focused on stimulating economic growth while managing inflation and unemployment. For instance, Sweden, Denmark and Finland have implemented policies to boost exports and stimulate their economies post-pandemic. These coordinated responses provide reassurance to foreign investors, who prioritize stable and predictable environments (Assunção et al., 2011).

5. Conclusion

In a world where countries are competing fiercely for foreign investment, regional cooperation has emerged as a powerful tool for attracting FDI. With their strong welfare systems and commitment to sustainability and innovation, Sweden, Denmark and Finland have successfully positioned themselves as attractive destinations for FDI. By working together within the EU framework and leveraging regional cooperation, they have amplified their economic potential. The example of Northern European EU member states demonstrates how pooling resources, harmonizing regulations, and fostering innovation through collaboration can give countries a competitive edge. This cooperation not only enhances their global competitiveness but also allows them to weather global economic fluctuations more effectively.

By presenting a unified and integrated market, ensuring political and economic stability, and leading the way in sustainability and infrastructure, these nations offer a model for other regions looking to boost their FDI appeal.

For foreign investors, the region offers a stable, forward-thinking, and innovation-driven environment, making it a prime destination for sustainable and high-quality FDI. For multinational companies, the cooperative efforts of Northern Europe provide not only access to a prosperous and stable region but also the potential for growth and innovation in a rapidly changing global economy.

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POLITICAL AND ECONOMIC CHALLENGES FOR THE GOVERNMENTS OF UKRAINE AND GEORGIA IN THE CONTEXT OF EUROPEAN INTEGRATION: PARALLELS AND DIFFERENCES

Abstract: Ukraine and Georgia, despite political and economic difficulties, are moving forward toward their strategic goal – European Integration. It should be acknowledged that as a result of political, economic, and, most importantly, military crises, these countries have faced problems such as high dependence on external financial assistance, high import dependence, difficulties with economic diversification, dominance of grey and black imports, smuggling, and the shadow economy. All of the above, along with budget deficits, economic downturns, unemployment, and brain drain, lead to a decline in entrepreneurial activity, reduced investment attractiveness, and a lower standard of living for the population. This creates additional challenges for the governments of these countries, forcing them to focus not only on economic reforms but also on social issues, which require even greater efforts and costs under limited budget conditions. The authors' research identifies the key parallels and differences in the approaches of both countries to addressing systemic governance problems, demonstrating how political will, international support, and domestic political dynamics shape strategies for adapting to European standards on the path to EU membership. Special attention is given to the evaluation of political initiatives aimed at reforming bureaucratic state institutions, simplifying procedures, and implementing comprehensive measures to combat corruption, which hampers economic development and undermines public trust in the state.

Keywords: European integration; development strategy; political initiatives; structural reform; international support; anti-corruption efforts

JEL: F15; O19; P26; F55; H11; P33

1. Introduction

The integration in the Euro Union is a strategic goal and a fundamental factor for Ukraine and Georgia in their political and economic transformation. Ukraine faces the devastation of military conflict and an unstable economy. For Ukraine, EU integration represents a crucial opportunity to stabilize its domestic policies and join the European secure and sustainable development system. European integration is vital for strengthening democratic institutions, enhancing transparency, and fighting corruption. Additionally, it provides access to the European market, stimulates economic growth, and aids infrastructure modernization.

Georgia, in turn, sees European integration as a way to strengthen its democratic foundations, improve the investment climate and further modernize state institutions. In the context of geopolitical instability and historical pressure from Russia, EU integration provides Georgia with the necessary tools to strengthen sovereignty, increase competitiveness and ensure long-term economic growth. Joining the European space will give Georgia access to investments, technologies, and best practices that contribute to the country's sustainable development.

2. Dissolving of the Problem

A panoramic review of publications on the topic of Euro Integration in the context of Ukraine is mainly devoted to the: a) the Orange Revolution (2004), which became an important point in Ukraine's modern history when the people protested against the falsifications in the presidential

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elections (Cramer, 2005). The Orange Revolution was associated with protests for democracy and European values, which made European integration a more obvious goal; b) Euromaidan (2013-2014) as a key turning point in the modern history of Ukraine, when citizens protested against President Viktor Yanukovich decision to suspend the signing of the Association Agreement with the EU and deepen cooperation with Russia; c) the war with Russia (since 2014) – the annexation of Crimea by Russia and the military conflict in Donbas became a powerful incentive for Ukraine to continue moving towards European integration (Rulski, 2016). In the face of Russian aggression, the EU has become a key ally, providing financial, diplomatic and technical support (Kleimenov et al., 2022; Orbis, Abdik, 2022; Shahi, 2024; Ivanov et al., 2020).

Concerning Georgia's historical path of European integration, there are numerous published articles describing: a) the Rose Revolution (2003); as in the case of Ukraine, the political revolution in Georgia became an important moment in the history of European integration (Machurishvili, 2018; Sukhiashvili, 2012). The Rose Revolution brought to power the pro-Western leader Mikheil Saakashvili, who proclaimed the course of European integration and reforming the country by European standards; b) the armed conflict with Russia in August 2008 in the territory of South Ossetia and Abkhazia, as well as the subsequent occupation of these regions by Russia pushed Georgia to accelerate its efforts to integrate with the West. It became obvious that European integration provides Georgia with more opportunities to protect its sovereignty and security; c) Signing of the Association Agreement with the EU (2014), which became an important step towards Georgia's integration into the European Union. As in the case of Ukraine, the agreement opened access to the European market and stimulated the country's domestic reforms (Jones, 2013; Blakkisrud, Kemoklidze, 2023; Kupatadze, 2016).

Research on topics such as corruption, institutional weaknesses, economic diversification, and external threats (e.g., Russian aggression) forms a significant area of study among scholars. Notably, critical publications highlight various problems that serve as motivation for reforms and actions. (Chakhava, 2012; Kresina, 2024; Mordas, 2022; Knysh, 2024; Bedianashvili et al, 2015; Kublashvili, 2024).

3. Methodology / Methodological Approaches

The study of European integration processes covers a set of multi-vector problems, the solution of which cannot be objectively imagined without a comprehensive approach. The organic unity of the methodological model ensures, at the same time, a systemic approach, which made it possible to consider the European integration processes of Ukraine and Georgia as complex, interconnected systems of political, economic and social factors. The comparative method was used to analyze parallels and differences in the approaches of both countries to reforms. The historical method analyzed the prerequisites for European integration within the context of modern history and key events. The optimization approach was applied for the potential implementation of blockchain technologies and smart contracts analysis to enhance public administration processes in Ukraine and Georgia.

4. Research Results

The initial step in achieving our study objectives is to perform a comparative analysis of Ukraine and Georgia, examining their current economic development and political prospects. This analysis will focus on the processes of their convergence and integration into the European Union.

Ukraine is at the most important stage of its development, simultaneously solving the problems of resolving Russia's military invasion and striving for deeper European integration. Current challenges and problems primarily concern the post-war restoration of the national socio-economic and environmental system. The war in Ukraine has caused extensive damage, requiring major investments and reforms to stabilize the economy, enhance production chains, create new jobs, and modernize vital sectors like energy and transportation.

Ukraine is actively implementing political reforms to combat corruption, improve the judicial system, and strengthen state institutions. These efforts are especially important for convergence with EU requirements and increasing the level of trust among international partners.

In June 2022, Ukraine was granted candidate status for EU membership within the context of European integration. This is a significant achievement, but there are still many stages ahead, including the fulfilment of the EU's basic conditions and requirements for democratic and economic reforms, which include respect for the rule of law, improvement of the legal and judicial system, the fight against corruption and modernization of the economy. The article's authors believe that Ukraine's long-term integration into Europe relies primarily on its success in military operations, the speed of economic recovery, and the effectiveness of implemented structural and legislative reforms.

The next step involves conducting a similar parametric analysis for Georgia, which is also on the path to European integration. However, its progress in certain aspects may be more successful than that of Ukraine.

Despite the challenging geopolitical situation, Georgia has experienced stable economic growth in recent years. The economy is developing due to trade liberalization, attracting foreign investment and tourism development. However, the country faces problems of high dependence on external financial sources and vulnerability to external economic shocks.

In the context of political reforms, Georgia is experiencing fluctuations, particularly regarding democratic standards and the rule of law. Some reforms and political processes hinder progress toward European integration, raising concerns among European partners.

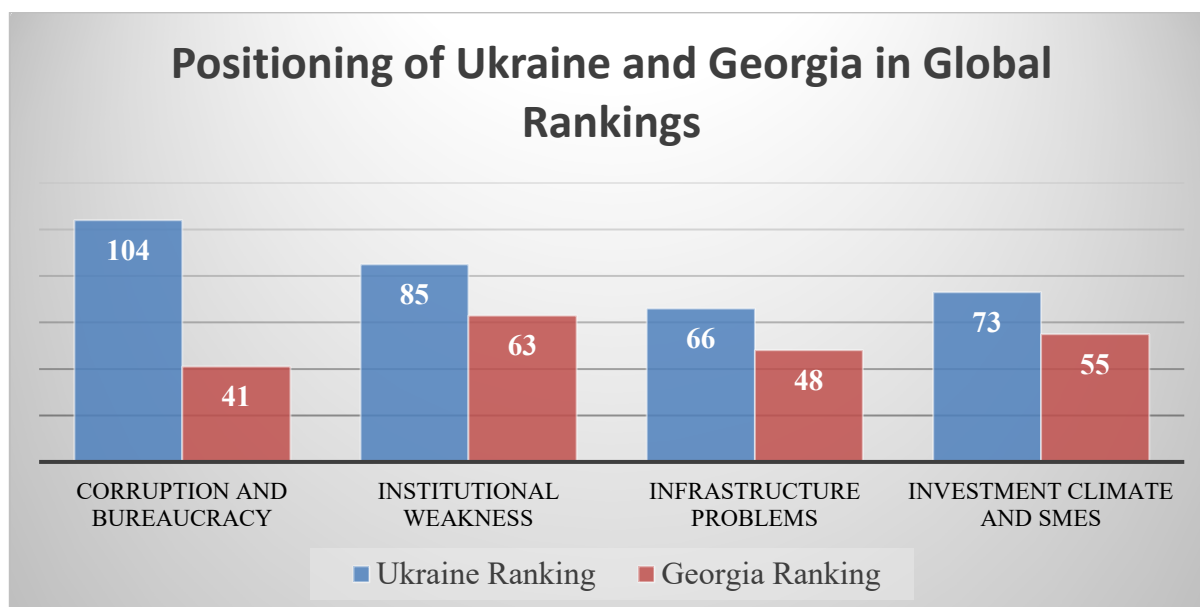
Georgia's ambitions for European integration have experienced significant growth. In December 2023, the country officially received candidate status for accession to the European Union. This milestone represents a major advancement in Georgia's journey toward closer ties with Europe. The application for EU membership was submitted in March 2022, and the process was expedited in response to Russia's invasion of Ukraine. Georgia is now focused on meeting the EU's requirements to begin membership negotiations.

This status represents a major victory for both the government and the people of Georgia. However, the country must undertake several important reforms regarding political polarization, the judiciary, and the fight against corruption before formal accession talks can commence. Georgia is also making good progress on several indicators, such as the 2023 Rule of Law Index, which places it ahead of other candidate countries. Looking ahead, the immediate challenge for Georgia is to complete political and institutional reforms to meet EU criteria.

The results illustrated in Figure 1 show that Georgia's position is better than Ukraine's. However, the standings of both countries highlight the urgent need for government reforms. Therefore, it is essential to expedite the implementation of these reforms and enhance the efficiency of public administration by adopting advanced innovative technologies. According to the article's authors, technologies such as blockchain and smart contracts offer unique opportunities to enhance government processes' transparency, automation, and efficiency. These technologies have the potential to transform traditional governance models by ensuring data immutability, transaction transparency, and automatic execution of contract terms. For

Ukraine, which is in dire need of post-war recovery, and Georgia, striving for the long-term sustainability of its reforms, the introduction of blockchain and smart contracts can be an important step towards modernization (Britchenko, Cherniavska, 2019).

Figure 1. Positioning of Ukraine and Georgia in global rankings



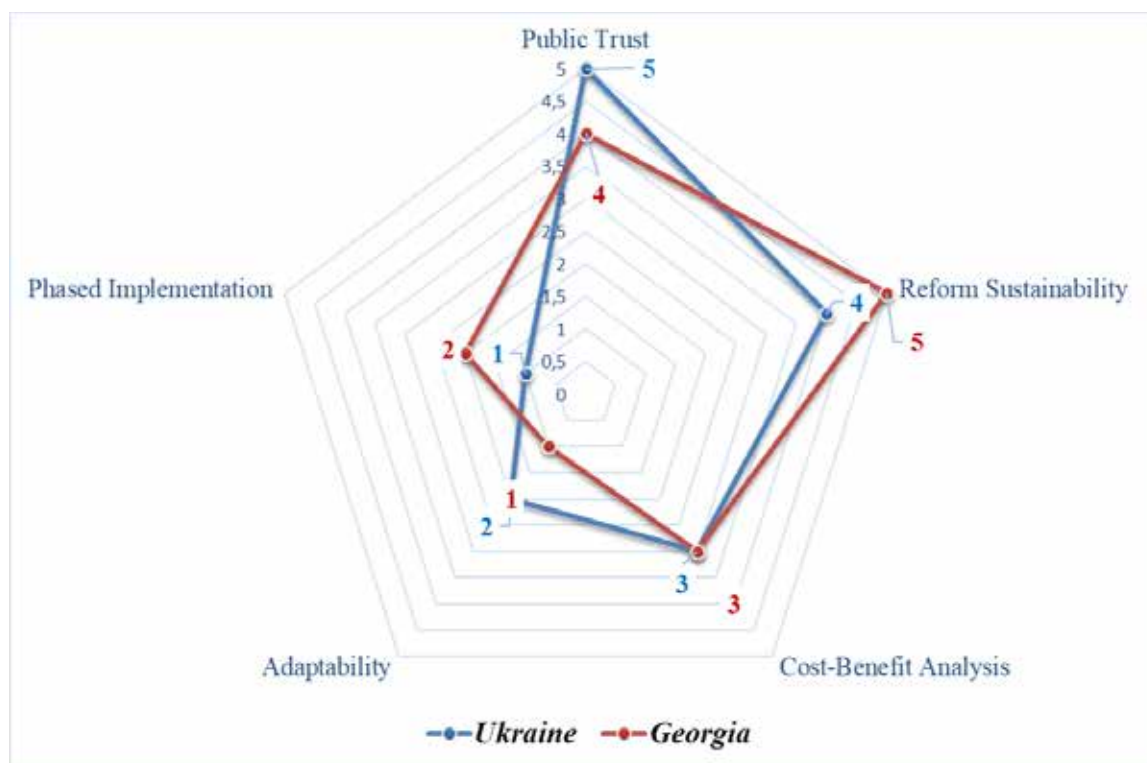
Source: compiled by the authors based on data from global indices: <https://www.transparency.org/en/cpi/2023>; <https://www.weforum.org/reports/global-competitiveness-report-2022>; <https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020>.

From the view of public administration, proposed technologies play a distinct role in European integration perspectives. The authors examined the key factors and priorities involved in the reform of both countries and illustrated their findings in a diagram (Figure 2).

The implementation of these technologies, such as blockchain and smart contracts, requires a comprehensive approach that can solve many problems and achieve the following in public administration:

1. Adaptability – government structures must be flexible to implement new technologies and reforms;
2. Sustainability – reforms must be long-term and bring stable results.
3. Balance of costs and benefits – government resources are limited, and reforms must justify their costs.
4. Gradual implementation – risk management and adjusting actions at each stage are necessary.
5. Public trust – without support from the population, reforms may face resistance, which will reduce their effectiveness.

Figure 2. Ranking of factors and priorities of reforms



Source: developed by the authors.

5. Conclusions

Summarizing the results of the study, we can state that both countries, Ukraine and Georgia, have significant European integration potential, however, they are at a critical moment of reform, when it is necessary not only to improve internal management processes but also to demonstrate their readiness to implement European standards. The authors suggest that the introduction and continued development of blockchain and smart contracts can significantly contribute to digital transformation, enhancing public administration and promoting European integration. The successful experiences of countries like Estonia, Sweden, Singapore, and Dubai, exemplifies this suggestion.

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CHALLENGES OF SUCCESSFUL REMEDIATION IN UKRAINE AFTER THE END OF MILITARY ACTIVITIES IN THE CONTEXT OF EUROPEAN INTEGRATION

Abstract: Successful remediation of Ukraine after the cessation of hostilities will not only be a condition for the country's recovery, but also a key impetus for its European integration. The European Union pays great attention to environmental protection and environmental security. Ukraine borders a number of EU Member States such as Poland, Romania, Hungary and Slovakia, as well as EU partner states such as Moldova and the Black Sea region countries. Pollution of water, air and soil as a result of military actions can lead to negative consequences and contamination of the contiguous territorial space. Thus, Ukraine, by successfully implementing a strategy of remediation of its territory, will demonstrate its readiness to integrate European environmental regulations, such as Directive 2004/35/EC on Environmental Liability and the EU Water Quality Regulation like an environmentally responsible partner. At the same time, environmentally friendly and sustainable solutions in the restoration of the territorial socio-economic system, such as the use of green remediation technologies (bioremediation, phytoremediation), will contribute to improving the investment climate.

Keywords: European integration; remediation; Ukraine's remediation strategy; green remediation methods; environmental safety; environmental standards; investment climate

JEL: Q53; Q58; O52; H56; R58

1. Introduction

Relevance of the research topic. As global practice shows, armed conflicts always have a destructive impact on the environment and infrastructure, leaving behind large-scale pollution. In the context of Ukraine, the war with Russia has created significant environmental, social, and economic challenges that will need to be addressed during the post-war recovery period. The issue of successful remediation after the end of military activities becomes especially relevant against the backdrop of Ukraine's aspiration to integrate into the European Union, where environmental safety and compliance with ecological standards play a crucial role.

In general terms, Ukraine faces an extremely important strategic task of forming a comprehensive remediation strategy. This represents a multi-vector, complex, and large-scale process of planning, coordination, implementation, and control of activities aimed at cleaning and restoring territories affected by pollution or destruction as a result of military actions, man-made disasters, or natural events. It is worth noting that the implementation of a comprehensive remediation strategy encompasses all aspects of organizational and managerial, financial and economic, material and technical, social, and political dimensions. Thus, Ukraine is set to undertake a long-term, labour-intensive effort to mitigate the colossal damage.

According to data published by the World Bank, the total damage and cost of restoring the country by the end of 2023 amounts to \$486 billion, and this figure continues to grow, increasing by approximately \$10 billion each month. Significant destruction has been recorded in the housing sector, social infrastructure – such as healthcare and education – as well as in agriculture. Around 149,300 residential buildings have been damaged, and nearly 20% of agricultural land has become unsuitable for further use. About 30% of the country's territory is contaminated with mines and unexploded ordnance, creating additional challenges for the

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recovery of the national economy (UND, 2023; Central and Eastern Europe, 2023; UNECE, 2023).

Additionally, according to researchers' forecasts, by 2026, Ukraine could lose up to \$120 billion in productivity, and capital losses may exceed \$950 billion. This level of destruction has not been seen in Europe since World War II, and the country's recovery could take decades (World Bank, 2024).

2. State of the Issue

The author of the article concludes that the issues surrounding the comprehensive remediation of war-affected territories in Ukraine are in an active stage of study but require further exploration, particularly in the context of applying „green” technologies and integrating them with European environmental standards.

2.1. Military Conflicts and Their Impact on the Environment

A comprehensive analysis of publications confirms that this issue has been the focus of scientific attention in a global context for several decades. However, Ukraine represents a unique case due to its large-scale contamination by various pollutants, including soil, water, and air pollution. There are numerous international examples of successful remediation, but the scientific research base for Ukraine is still in the process of formation. The nature of large-scale military contamination during the ongoing hybrid war requires the application of new, innovative, and hybrid approaches and methods for cleaning the territories and their subsequent remediation (Fernández-López et al., 2024; Flamm, Kroll, 2024; Nygaard, 2022).

2.2. European Integration and EU Environmental Standards

Currently, researchers from various fields around the world are focusing their studies on ending the war in Ukraine, assessing the damage – both environmental and economic – forecasting future developments, and addressing issues of migration and the restoration of human capital. Thus, the relationship between and the impact of the state's environmental policy in the implementation of comprehensive remediation, in the context of compliance with EU standards and norms, require deeper scientific exploration, which is still in its early stages. In this regard, the author argues that a remediation strategy based on „green” principles should be developed now, taking into account Ukraine's aspiration to integrate into the European Union. This means that both its strategic intentions and its actions should align with EU directives on environmental protection and sustainable development (Martynovych et al., 2023; Shafik, 2024).

3. Methodological Approaches

The author's research directly encompasses the entire territorial socio-economic and environmental system of Ukraine. As a higher-order system, it consists of subsystems and key structural elements that interact and influence one another. As a result, the system approach enables the author to focus on studying the outlined set of problems in a systematic manner.

Currently, numerous publications by both domestic and foreign authors are devoted to the application of the ecosystem approach. For example, M. Rothschild can be considered a founder

and popularizer of the ecosystem approach in economic research. In his work, he described the network interactions between actors within the economic system and highlighted the influence of innovation and technological conditions as key factors (Rothschild, 1990). Of particular note is J. Moore's scientific rationale for the concept of an economic ecosystem, which he defined as a collection of consumers and producers who act as interconnected and complementary entities within a shared space (Moore, 1993). In the context of this research, an interesting study on ecosystem services published this year draws attention to the value of ecosystems as entities that provide benefits not only to specific actors but also to the state as a whole. This knowledge serves multiple purposes, raising awareness about the sustainable use of these ecosystem resources and assisting regional and national bodies, strategic decision-makers, and other stakeholders in formulating policies for the sustainable development of the national ecosystem (Upreti, 2023; Jozeph, Pradeepkumar, 2024; Oliveira et al., 2024).

In addition to the approaches mentioned above, the research employs comprehensive, adaptive, situational, and cybernetic scientific approaches. Each of these methods enabled an objective examination of the interconnected issues raised in the article.

4. Research Results

4.1. Remediation as a Mechanism for Accelerated Euro-Integration

Remediation of war-affected territories is a comprehensive process aimed at restoring the territorial socio-economic and environmental systems disrupted by military actions, with the goal of bringing these areas back to a state suitable for safe living, economic activity, and sustainable development. In the context of this article, comprehensive remediation in Ukraine will encompass not only the elimination of soil, water, and air pollution caused by the negative anthropogenic impact of military activities but also the application of „green” technologies. These technologies, designed to be environmentally friendly, aim to restore biodiversity and support the primary strategic objective of achieving sustainable development (Singh et al., 2022).

First of all, it is necessary to define the concept of „Green Remediation” (GR), which the author refers to as the use of a set of environmentally sustainable approaches for cleaning contaminated areas (soil, water, and air) that minimize environmental impact while simultaneously promoting the restoration of natural resources.

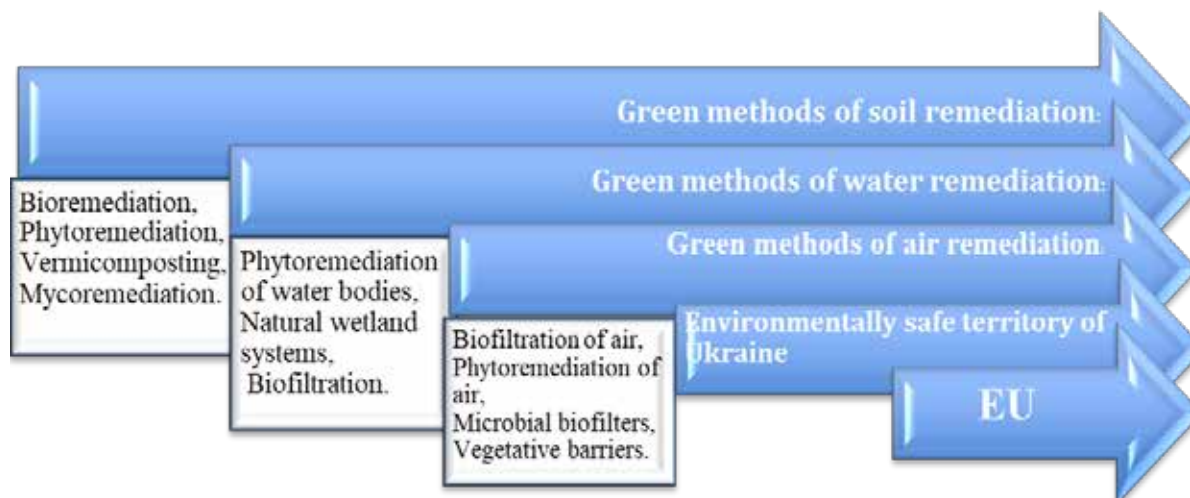
The term Green Remediation was first proposed and developed by the Environmental Protection Agency (EPA) in the United States as part of efforts to integrate ecological principles into the processes of cleaning contaminated land (EPA, 2008).

An important aspect of the country's remediation efforts is its role in creating an environmentally safe space, which is necessary to meet the standards of the European Union. The successful implementation of environmental projects in the affected regions is directly linked to Ukraine's Euro-integration. It is essential to emphasize that the remediation process also has a transboundary significance, as the restoration of interconnected ecosystems (rivers, seas, forests – author's note) impacts neighbouring countries, including EU member states. Ultimately, this contributes to the strengthening of sub-regional environmental security.

The author considers remediation as a key tool for the economic and environmental transformation of Ukraine. Thus, it is not merely about cleaning and restoring territories using the most effective methods (which, as noted, may not always be the most rational – author's note), but a strategic step toward economic recovery through the application of „green” remediation methods. This involves the development and scaling of organic agriculture,

ecotourism, renewable energy, and other sectors that contribute to long-term sustainable development.

Figure 1. Main „Green” Remediation Methods



Source: Developed by the author.

All of the above suggests that remediation can become a catalyst for Ukraine’s economic convergence with the EU. If the remediation strategy is built on the predominant use of „green” methods as the leading technologies for restoring affected areas, it will not only allow Ukraine to recover its destroyed territories but also attract significant investment for sustainable economic development. Specifically, this refers to the financing of projects that are fully supported by European funds, such as the European Regional Development Fund and the Just Transition Fund (Galeazzo et al., 2014).

Successful remediation based on the use of sustainable technologies will contribute not only to the restoration of agriculture, which was the leading sector of the national economy before the war, but also to the recovery of industry and infrastructure. Moreover, it will strengthen and expand socio-economic cooperation between Ukraine and neighbouring countries. As we can see, the cleaning and restoration of territories from military contamination is crucial not only for Ukraine's internal recovery and development but also for enhancing integration processes with neighbouring EU member states, such as Moldova, Romania, Poland, Slovakia, and Hungary (Hussain et al., 2021).

5. Conclusions

The successful remediation of Ukraine after the end of military activities will not only be a significant step in the country’s recovery but also a key driver for its European integration. This process, through a series of concrete actions, will clearly demonstrate Ukraine's commitment to European norms and standards.

By successfully implementing the remediation program, Ukraine will showcase its readiness to integrate European environmental regulations, such as Directive 2004/35/EC on environmental liability and the EU Regulation on water quality. This will send a strong signal to the EU that Ukraine is striving to become an environmentally responsible state, which is a crucial condition for its accession to the Union.

In the context of sustainable development, green methods as leading technologies in the remediation strategy will provide key long-term benefits, such as restoring soil fertility for

organic agriculture and developing ecotourism, which could become drivers of local economies. Additionally, the creation of alternative energy projects on the restored territories will further contribute to Ukraine's recovery. As a result, this will support the development and diversification of Ukraine's national economy, reduce its carbon footprint, and promote more active integration into the European community, particularly through the realization of climate and environmental sustainability goals shared by the countries of the European Union.

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THE IMPACT OF SANCTIONS ON RUSSIA'S OIL AND GAS SECTOR

Abstract: *Since Russia invaded Ukraine, the United States and its allies have imposed sanctions on Russia and we are now at a point where we need to analyse their effectiveness, particularly for the oil and natural gas industry, which is vital to Russia's economy. Western sanctions have affected Russia's hydrocarbon revenues, but not equally for all segments. To assess the impact of sanctions on this industry and to understand how they affect Russia's ability to finance the war, it is necessary to consider what has functioned and especially what has not functioned in optimal parameters. This requires examining other elements, such as the role of China, other Asian markets and the Global South in mitigating the negative effect of sanctions. The objective of this paper is to analyse the sanctions imposed on Russia in the energy sector and the subsequent evolution of the EU-Russia trade following the outbreak of the conflict in Ukraine.*

Keywords: *energy; Russian Federation; sanctions; war*

JEL: *Q43; Q48; Q49*

1. Introduction

The armed conflict between Russia and Ukraine began in February 2014 and the Russian government proceeded to annex Crimea after the Revolution of Dignity (Kelichavyi, 2016; Ozili, 2024). Also, in 2014, Euromaidan protests led to the ousting of Ukraine's pro-Russian President Viktor Yanukovich. Pro-Russian unrest soon erupted in eastern and southern Ukraine as Russia annexed Crimea following a disputed referendum. In the spring 2014, Russia supported rebels in eastern Ukraine (Bebler, 2015; Åtland, 2020).

In 2021, Russia undertook a programme of military reinforcement near Ukraine's borders, including in Belarus (Mudrov, 2022) and formally recognised the Luhansk People's Republic (LPR) and Donetsk People's Republic (DPR) as independent states in early 2022 (Sarkin, 2023). On 24 February 2022, President Putin announced a military operation to demilitarise and “denazify” Ukraine (Moser, 2024).

In April, Russia terminated its campaign to occupy Kyiv. In August, Ukraine initiated the reclaiming of territory in the north-east and south. In September, Russia assumed control of four partially occupied provinces. Furthermore, Ukraine has initiated hostilities against Russia. In August 2024, Ukrainian forces crossed the border into Russia's Kursk region. In response, Russia launched an attack on civilians situated far from the front line (Bugayova et al., 2024).

2. State of the Art

Prior to the annexation of Crimea and the start of the war in Donbas, Russia and the United States had disagreements over human rights (Ingelevič-Citak, 2022). In 2012, the United States introduced the Magnitsky Act. It aimed to punish Russian officials for the death of Sergei Magnitsky in 2009 and grant normal trade relations with Russia. Eighteen officials were targeted (Ruys, 2017). In December 2016, Congress passed the Global Magnitsky Act, which allows the US government to sanction foreign officials involved in human rights violations anywhere in the world (Moiseienko, 2018).

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Some countries and organizations, led by the United States and the European Union, imposed sanctions on Russia after it invaded Ukraine. As the conflict has widened, sanctions have increased. (Zapotichna, 2022; Sonnenfeld et al., 2022; Moiseienko, 2024).

Three types of sanctions have been imposed: firstly, a ban on technology for oil and gas exploration; secondly, a credit ban on Russian oil companies and state-owned banks; and thirdly, travel restrictions on influential Russian citizens involved in the annexation of Crimea (Rühl, 2022; Abely, 2023).

On 23.02.2024, the United States introduced trade restrictions on 93 entities in response to their support for Russia's military operations in Ukraine (Sivertsen, 2024; Adogbeji et al., 2024).

3. Methodology

Our methodological design is a mixed one based on a qualitative evaluation of the sanctions imposed on Russia in the oil and gas sector and on an indicator analysis (using the latest Eurostat data) of the subsequent evolution of the EU-Russia trade following the outbreak of the conflict in Ukraine.

Our quantitative analysis relies on Eurostat data to showcase how the EU energy trade with Russia has been affected since the start of Russia's invasion of Ukraine. The indicators employed in our analysis pertain to the trade of crude oil, natural gas in a gaseous state, and liquefied natural gas.

The main limitation of our research is linked to the absence of the statistics for the third quarter of 2024, hence we are considering a possible extension of our research in future works as soon as these data become available.

4. Research Results

The impact of sanctions on the natural gas market

The cease of gas sales to Europe by Gazprom had a significant adverse impact on the company. In mid-2022, Gazprom ceased the delivery of gas to Europe. This was done with the intention of creating difficulties for EU countries in the lead-up to the winter season of 2022-2023. Despite the rise in gas prices and the necessity to identify alternative sources, the EU was able to navigate the winter period successfully.

The company incurred a significant financial loss. Gazprom revealed a net loss of approximately \$7 billion for 2023, representing its first annual deficit in over two decades. Additionally, Gazprom is unable to export gas from its primary fields in western Siberia to other Asian markets. Furthermore, the company has been unable to construct any liquefied natural gas facilities in western Siberia, which would have enabled it to market its gas in other regions.

Gazprom does not specify how much it will cost to build new pipelines to China. But it will probably be at least 100 billion dollars, given the company's experience building the existing Power of Siberia pipeline.

Gazprom does not publish data on gas prices to China through Power of Siberia. Experts claim that the average price of gas from Russia to China in 2023 was \$282/1000 mc. This indicates that Russia is likely losing money on gas sales to China and it is unlikely that China will require an increased gas supply by 2030.

Therefore, Beijing isn't keen on offering Gazprom a higher price for new contracts. China has other options, including its own gas, LNG, or gas from Central Asia.

The impact of sanctions on the oil market

The Russian oil industry has shown it can adapt to sanctions easier than Gazprom, as it doesn't have the same infrastructure issues. It's still possible to get Russian oil to Asia by sea, but it's more expensive. The additional cost of transporting Russian oil from Novorossiysk or Primorsk to India is around 10-15 \$/barrel. This makes exports to India and other Asian destinations less profitable.

The average monthly export prices of Russia fell between December 2022 and March 2023 in response to the demand from consumers in Asia for lower prices. Russia's oil exporters have been reducing the discounts offered to Asian customers. In the second quarter of 2023, the price of Urals crude oil rebounded to a range of \$55-58/bbl. In July and September 2023, prices reached \$60 and \$80 per barrel, respectively.

Russia has set up a secret fleet of oil tankers to sell oil to Asia and Europe via third countries, avoiding sanctions, but these schemes do not produce large sums of money for Russian front companies.

Regarding the production, there was only a slight drop, at around 1-2%. Russia's daily oil production has dropped from just over 11 million barrels before the war to around 10.5 million now.

The impact of sanctions on the liquefied natural gas market

The EU stopped buying gas from Gazprom after Russia invaded Ukraine in 2022. But Russia exported more LNG to Europe in 2023 than in 2021. The EU imported about 22 bcm of Russian LNG in 2023. Russia is Europe's biggest LNG supplier after the United States. Russia is becoming increasingly important in the LNG market, but Gazprom is not involved. Russia's main LNG exporter is Novatek, the country's second largest natural gas producer. In 2022, Novatek exported most of the LNG produced by its Yamal LNG project to Europe. Russia currently exports more than 50% of its LNG to Europe, up from just 39% in 2021.

The Russian government has increased the corporate income tax for Novatek from 20% to 32% for 2023-2025. The 2024 budget suggests that oil and gas companies, including Novatek, may have to pay one-off taxes in 2024. The EU has no plans to penalize Russian LNG, so revenues will likely continue to flow in 2024.

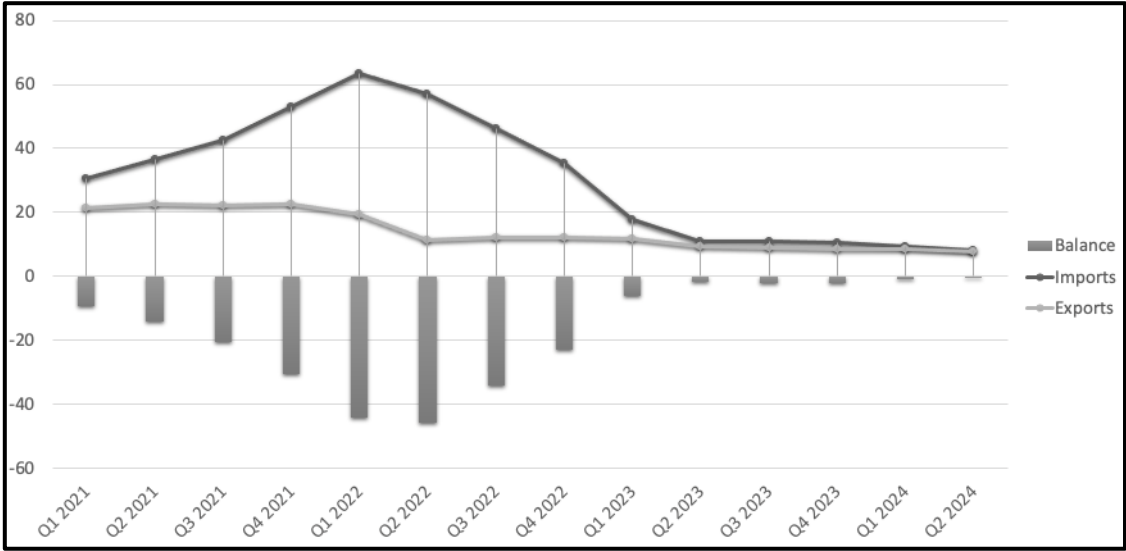
Novatek has continued to work on the Arctic LNG-2 project despite problems obtaining Western technology due to sanctions. Western companies left the project after February 2022, but Novatek managed to either keep the equipment supplied or find Chinese suppliers. However, after the introduction of new US sanctions against the project in November 2023, it was halted. This hinders Russia's LNG exports in the future and shows that individual sanctions can affect oil and gas projects.

Case study: EU-Russia energy trade developments

The ongoing conflict in Ukraine has had a big impact on the European Union's trade relations with Russia. Because of the EU's restrictions on imports and exports, there's been a big drop in trade with Russia. In terms of exports to Russia, there's been a 59% drop between 2022 and

2024, while imports from Russia have fallen by 87% over the same period. In the second quarter of 2024, there was a 16% drop in imports and a 9.5% drop in exports to Russia. This led to a reduction in the European Union's trade deficit with Russia to €0.2 billion from €45.8 billion in the second quarter of 2022.

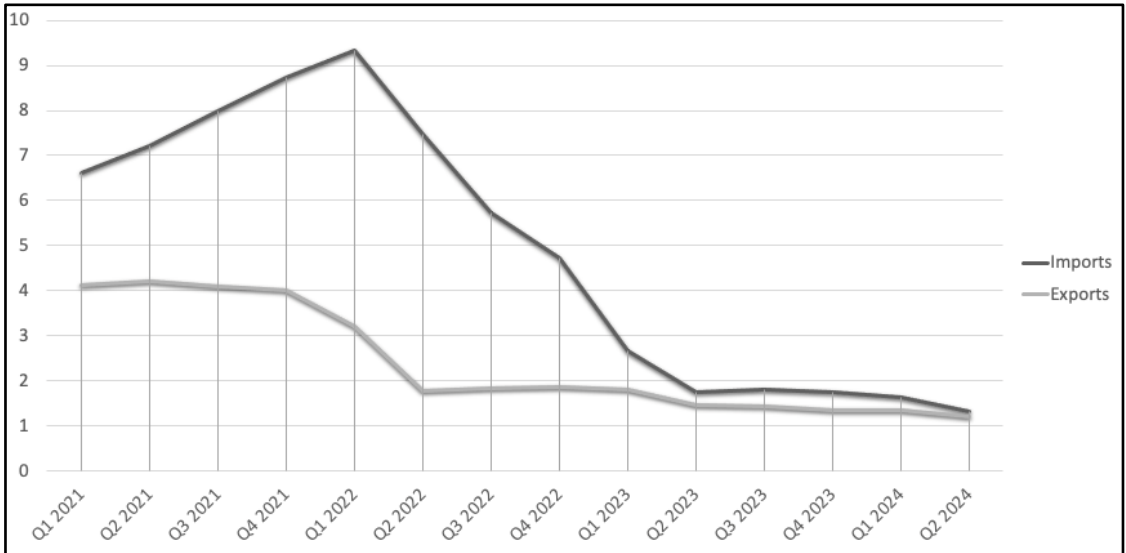
Figure 1. Trade in goods between the EU and Russia (billion €)



Source: Author based on Eurostat, 2024.

Following the invasion, Russia's share of extra-EU trade experienced a decline. Figure 2 illustrates the decline in Russia's share of extra-EU exports, which decreased from 3.2% in Q1 2022 to 1.2% in Q2 2024. Imports from Russia exhibited a notable decline, from 9.3% to 1.3%.

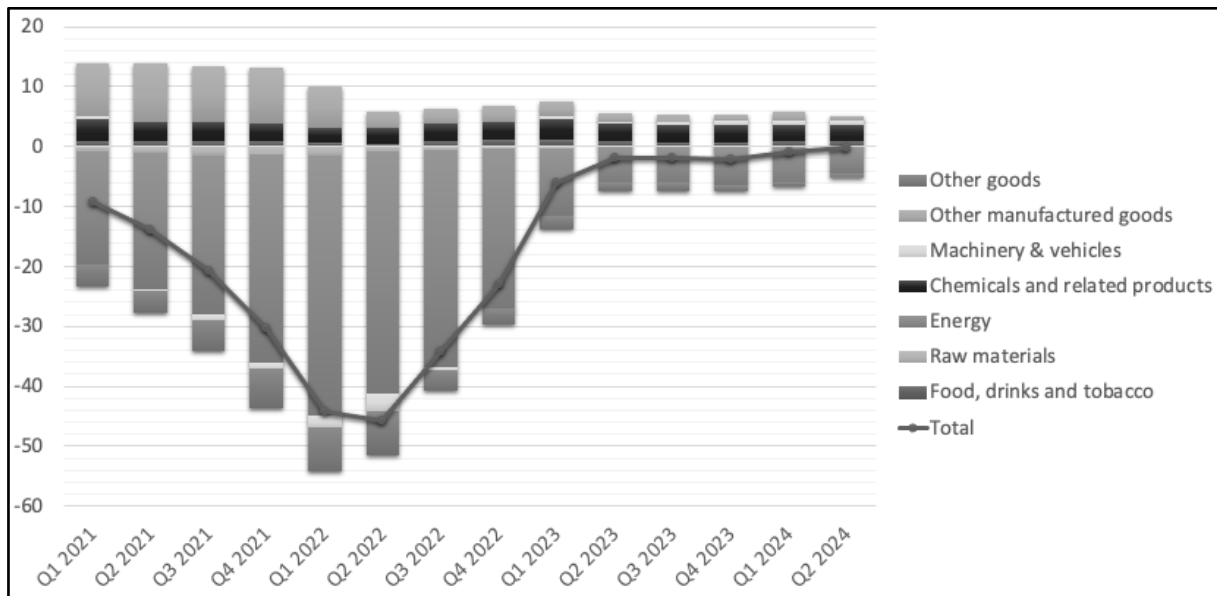
Figure 2. Trade in goods between the EU and Russia (% in extra-EU trade)



Source: Author based on Eurostat, 2024.

The balance of trade between the EU and Russia is inextricably linked to the trade of energy products. The elevated cost of energy has resulted in a trade deficit, which reached €45.8 billion in Q2 2022. Nevertheless, the implementation of import restrictions and a reduction in energy prices have resulted in a narrowing of the trade deficit to €0.2 billion in Q2 2024.

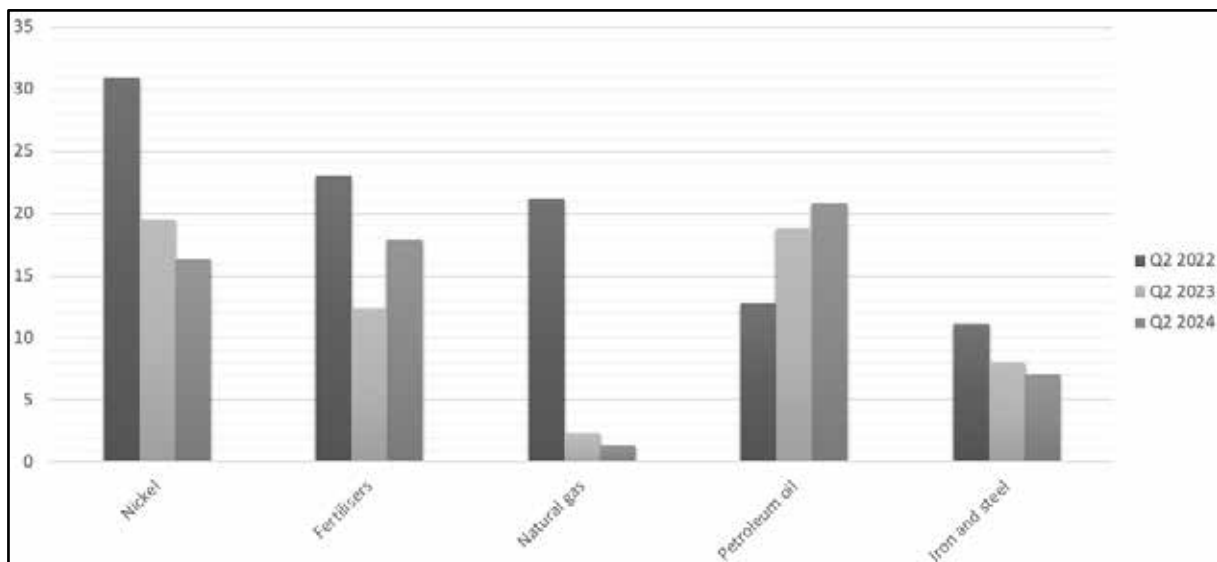
Figure 3. Balance of trade between the EU and Russia by product group (%)



Source: Author based on Eurostat, 2024.

Figure 4 shows five important Russian products for the EU. These products made up over 60% of EU imports from Russia. Restrictions were imposed on gas, coal and oil imports. Some products in these groups were not affected by the restrictions. The restrictions have led to a drop in imports. Even though there were no restrictions on nickel, imports fell. In the second quarter of 2022, imports of nickel and crude oil fell more than imports of natural gas, iron, and steel. The proportion of fertilisers went up by 8 percentage points.

Figure 4. Share of selected products imported from Russia into the EU (%)



Source: Author based on Eurostat, 2024.

Natural gas imports in gaseous state. In Q2 2024, Russia imported 59% less natural gas in Q2 2024 than in Q1 2021 (Figure 5). However, prices have increased, and the value of natural gas imports fell by 32%. The value of EU natural gas imports from Russia increased between 2021 and 2022 as prices rose. In subsequent quarters, imports fell.

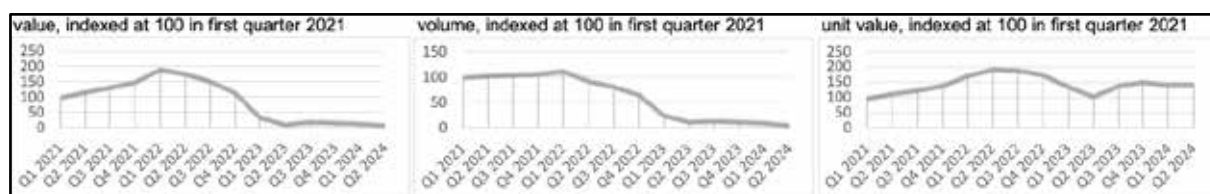
Figure 5. Imports of natural gas in gaseous state from Russia into the EU (value, indexed at 100 in Q1 2021)



Source: Author based on Eurostat, 2024.

Oil imports. In the initial three-month period of 2024, the EU imported 6% less oil from Russia in comparison to the same period in 2021 (Figure 6). The value of EU imports of Russian crude oil increased almost twofold between 2021 and 2022, due to the rise in prices. In 2021, Russia was the primary supplier of crude oil to the EU. Following the Russian invasion, a significant alteration in crude oil trade patterns was observed, particularly in the second and third quarters of 2022, and this trend continued into 2023 and 2024.

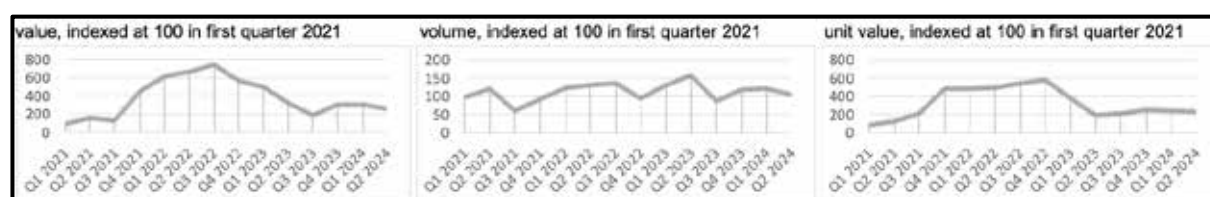
Figure 6. Imports of oil from Russia into the EU (value, indexed at 100 in Q1 2021)



Source: Author based on Eurostat, 2024.

Liquefied natural gas imports. In the first quarter of 2024, Russia supplied 7% more liquefied natural gas than in 2021 (Figure 7). However, the price has risen by 164%. The amount of liquefied natural gas imported from Russia to the EU jumped between 2021 and 2022, along with prices. Imports of natural gas from Russia fell in value until the third quarter of 2023, then rose.

Figure 7. Imports of liquefied natural gas (LNG) from Russia into the EU (value, indexed at 100 in Q1 2021)



Source: Author based on Eurostat, 2024.

5. Conclusions

Despite the recent recovery in Russia's crude oil export revenues, the EU oil embargo remains an effective measure. The cost of transporting Russian crude oil to Asia has increased by more than \$10 per barrel. Additionally, price reductions exceeding the \$10/barrel threshold have been observed. The rationale behind Russia's enhanced profitability in the crude oil market is the decision by OPEC+ to curtail production in the spring of 2023.

Western policymakers should put pressure on OPEC members and other producing countries to increase production. The EU should also make it harder for Russia to transport crude oil through its territorial waters. This would make it more difficult to deliver crude to Asia. Much of the crude is still sent to Asia via the Baltic and Black Seas. There is not enough pipeline infrastructure to Asia and expanding it would be very expensive. The G7 price cap on Russian crude oil is not working.

Some measures could make the cap more effective, such as increasing the number of staff monitoring Russia's crude oil shipments, introducing sanctions against insurers, traders and shippers in third countries that help Russia circumvent the price cap, or improving the mechanism for „attesting” transactions to ensure compliance with the price cap. The latter involves ensuring that ship owners and insurers have sufficient price information from buyers and sellers of Russian crude oil so that crude oil is sold below the price ceiling.

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THE SEISMIC SHIFT IN THE ENERGY TRADE BETWEEN GERMANY AND RUSSIAN FEDERATION – A CONSEQUENCE OF THE CURRENT GEOPOLITICAL TURMOIL

Abstract: *The Russian-Ukrainian conflict has triggered unprecedented geopolitical turmoil, reshaping strategic alliances and trade relations between countries and exacerbating global economic instability. For the highly industrialised German economy, the new geopolitical landscape has brought a number of additional challenges, both because of its increased vulnerability to energy crises – as a net importer of all fossil fuels – and because of its large dependence on energy imports from the Russian Federation (especially natural gas). Against this background, our paper will present recent trends in energy trade between Germany and the Russian Federation, as well as the measures taken by the German authorities to avoid supply bottlenecks and ensure national energy security.*

Keywords: *Germany; Russian Federation; Russian-Ukrainian conflict; sanctions; trade; energy*

JEL: *F51; F52; Q43*

1. Introduction

Following the Cold War, the prospect of improved East-West relations emerged at both international and European levels, fostering hopes for fruitful cooperation. However, over the past three decades, it has become clear that the vision held by German and European political elites has not materialized, leading to a complex and fluctuating relationship with the Russian Federation. The Russian-Ukrainian conflict exposed flaws in German diplomacy and its Ostpolitik-based foreign policy, tied to risky energy dependence. The current sanctions packages (14 to date) have deeply impacted economic ties with the Russian Federation.

2. State of the Art

The so-called energy alliance that emerged between West Germany and the former USSR in the 1970s has been extensively analysed and well documented both in the economic literature of the time and in more recent academic articles. Some scholars have explored the geostrategic motivations behind Germany's rapprochement with the Russian Federation through „energy diplomacy” (Bösch, 2014), while others analysed Germany's growing dependence on Russian gas and shifts in power dynamics (e.g. Bros et al., 2017; Westphal, 2020). After February 2022, research focused on how the Russian Federation used energy cooperation as a political tool (e.g., Lutz, 2024), initially highlighting the risks of stopping gas imports (e.g. Krebs, 2022), and later examining strategies for safe decoupling (Schlögl, 2022). Other studies also assess Germany's progress toward energy independence (Amelang et al., 2023).

3. Methodological Approaches

Our paper uses a mixed-methods approach, combining qualitative and quantitative analysis, to provide a comprehensive understanding of the past and current state of the energy relationship between Germany and the Russian Federation. The qualitative analysis looks at the historical

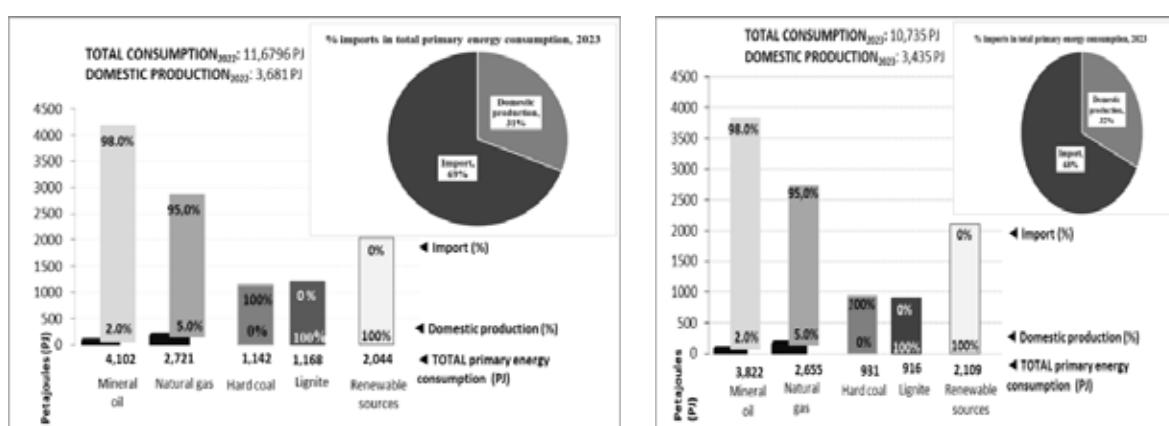
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development of bilateral relations between Germany and the Russian Federation, providing a context for understanding the importance of energy trade. The quantitative analysis focuses on energy trade between Germany and Russia in recent years, with an emphasis on natural gas and oil imports. Data are drawn from the German Working Group on Energy Balances (AGEB), the German Association of Energy and Water Industries (BDEW), Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (Bundesnetzagentur/BNNetzA).

4. Gradual Reduction of Germany's Dependence on Fossil Fuel Supplies from the Russian Federation

Germany's energy cooperation with the Russian Federation, rooted in a “gas-for-pipes” deal from the 1970s, was a cornerstone of German Ostpolitik and a prime example of “energy diplomacy”. This partnership thrived for two decades, driven by stable demand and pricing, fostering economic interdependence. Despite the reunification of Germany and the USSR's dissolution, the energy alliance continued until the 2014 Crimean crisis, which shifted the bilateral relationship. The 2022 invasion of Ukraine prompted severe EU sanctions on the Russian energy sector, including bans on coal imports and partial oil embargoes. These developments forced Germany to reassess its energy ties with Moscow and expedite efforts to diversify its energy sources in response to reduced Russian supplies. Based on a misguided foreign policy vision, Germany has progressively deepened its dependence on Russian natural gas imports, making it the most vulnerable European country to geopolitical risks and their consequences for energy security. With a highly industrialised economy, Germany is the largest energy consumer in the EU and ranks 12th in the world in terms of energy consumption. Despite Germany's efforts to expand renewable energy production under the Energiewende and its Paris Agreement commitments, fossil fuels still dominate its energy consumption, and the Russian-Ukrainian conflict further exposed the country's vulnerability to energy crises due to its heavy reliance on Russian natural gas imports (Figure 1).

Figure 1. German dependence on energy imports, 2022-2023



Source: Authors' own calculations based on data published by the German Working Group on Energy Balances (AGEB, 2024a).

Over 70% of Germany's energy needs are met through imports, with renewables and lignite as the main domestic sources. This high reliance on foreign energy supplies leaves the German economy especially vulnerable to energy crises, including supply disruptions and price fluctuations (see Table 1).

Table 1. Share of energy sources in total primary energy consumption in Germany, 2014-2023 (%)

Energy carrier	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Mineral oil	34.1	34.3	34.0	34.7	34.0	35.3	34.3	32.5	35.1	36.3
Natural gas	20.2	20.8	22.7	23.4	23.5	25.1	26.5	26.6	23.4	24.7
Hard coal	13.3	12.9	12.5	11.1	10.8	8.5	7.5	8.9	9.8	8.1
Lignite	11.9	11.7	11.2	11.2	11.2	9.1	8.1	9.1	10.0	8.4
Nuclear	8.0	7.5	6.8	6.2	6.3	6.4	5.9	6.1	3.2	0.7
Renewables	11.8	12.5	12.4	13.2	13.9	14.9	16.6	15.7	17.5	19.4
Others	0.7	0.3	0.3	0.2	0.3	0.8	1.1	1.2	1.0	2.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' compilations based on data published by AGEB (2024b).

In 2022, the share of fossil fuels in Germany's total energy consumption rose by 0.8 percentage points compared to 2021 (Table 1). This increase was driven by reduced green energy production due to unfavourable weather, a rebound in industrial activity after COVID-19 restrictions were lifted, and the cessation of Russian gas supplies, which led to a shift towards mineral oil. In 2022, Germany's approximately 50 active oil fields produced only about 2.5 Mtce, a decrease of 5.1% from 2021. This decline in domestic production has led to a reliance on imports to meet crude oil demand, with the Russian Federation being the largest supplier prior to the outbreak of the conflict in Ukraine (see Table 2).

Table 2. Germany's crude oil imports by country of origin, 2021-2023

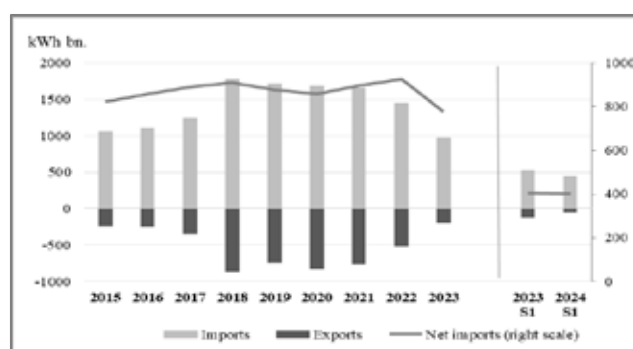
Country	2021	2022	2023	Changes 2022/2021	Changes 2023/2022	2021	2022	2023
	Mtce			(%)		Share in total imports (%)		
Russian Fed.	27.7	22.8	0.1	-17.7	-99.5	34.1	26.1	0.2
UK	7.6	8.7	7.9	14.5	-8.6	9.3	9.9	10.9
US	7.8	12.1	13.3	55.1	9.3	9.6	13.9	18.3
Norway	8.0	12.2	13.3	52.5	9.1	9.8	13.9	18.3
Kazakhstan	10.2	8.5	8.5	-16.7	0.2	12.5	9.7	11.7
Nigeria	1.7	2.9	2.8	70.6	-2.8	2.1	3.3	3.9
Others	18.4	20.2	26.7	9.8	31.9	22.6	23.1	36.7
TOTAL	81.4	87.4	72.6	7.3	-16.9	100.0	100.0	100.0

Source: Authors' compilations and calculations based on data published by AGEB (2023, 2024a).

Despite a 7% annual decline in Germany's crude oil imports in 2022, the Russian Federation remained the largest supplier amid the ongoing energy crisis and the sharp rise in energy prices (see Figure 1 and Table 2).

This situation can be explained, on the one hand, by the time needed to conclude new contracts (or renegotiate existing ones) in order to diversify suppliers and, on the other hand, by the fact that the EU embargo on imports of Russian crude oil entered into force on 5 December 2022. In the case of natural gas, given the accelerated decline in production from local gas fields, more than 95% of national consumption was met by purchases from the external market, which totalled more than 920 billion kWh in 2022 (see Figure 2).

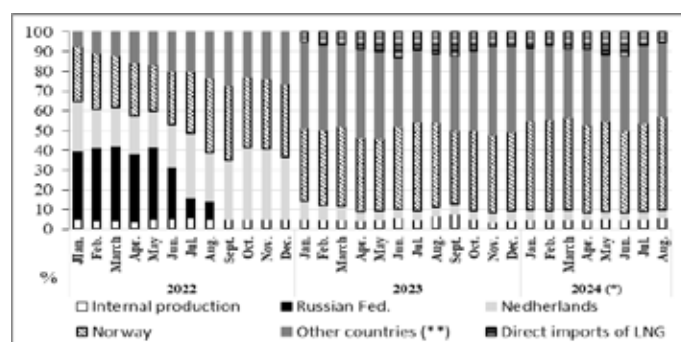
Figure 2. Germany's net gas imports, 2015-2024



Source: Authors based on data published by the German Association of Energy and Water Industries (BDEW, 2024a) and AGEB (2024c).

Germany's reliance on Russian gas led to panic when supplies were cut in August 2022, prompting urgent moves to secure energy independence. Without domestic LNG infrastructure at the outset of the Russian-Ukrainian conflict, Germany relied on neighbouring countries' terminals for imports. Tensions with the Russian Federation and the halt of Nord Stream supplies caused a major shift in Germany's fuel import structure, with Norway replacing Russia as the top gas supplier in 2022, followed by the Netherlands and Belgium (see Figure 3 and Figure 4).

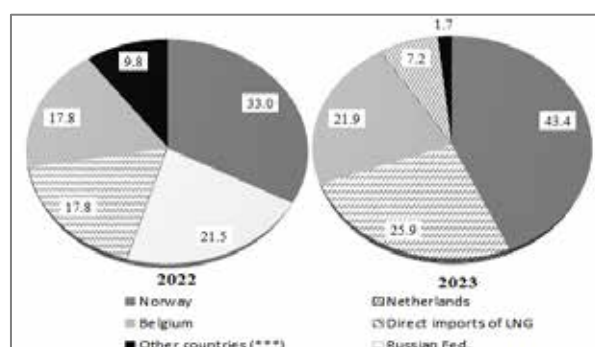
Figure 3. Structure of German monthly domestic gas consumption by country of origin, 2022-2024



Notes: * Latest available data at the time of publication; ** Other countries, including: Switzerland, Austria, Poland, Czech Republic (and excluding imports from France and Denmark).

Source: Authors based on data published by AGEB (2024a) and BDEW (2024b).

Figure 4. Main countries supplying gas to Germany in 2022 compared to 2023 (%)



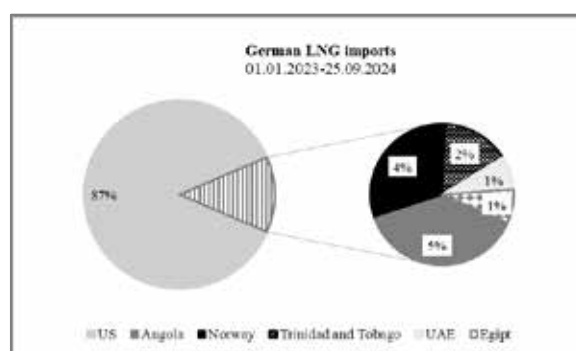
Notes: *** Other countries, such as France, Switzerland, Denmark, Austria, Poland, and Czech Rep.

Source: Author's calculations and representation based on data published by Bundesnetzagentur (Bnetza, 2024a,b).

In 2022, Germany lacked the infrastructure to import liquefied natural gas and relied entirely on pipeline supplies, limiting diversification options. However, through simplified regulations and significant investment, Germany rapidly developed its LNG infrastructure. By the end of 2023, three import terminals with floating storage and regasification units (FSRUs) in Wilhelmshaven, Lubmin, and Brunsbüttel were completed, enabling direct purchases of LNG from countries outside the European pipeline network.

In 2023, over 95% of Germany's domestic consumption and storage needs were met through foreign purchases. Norway remained the top gas supplier, followed by the Netherlands and Belgium, while the Russian Federation, which ranked second in 2022, saw its position diminish. Notably, direct LNG supplies accounted for over 7% of total imports in 2023 (see Chart 5), with the United States dominating the LNG market, while other suppliers maintained fluctuating shares of 1-5% (Figure 5).

Figure 5. Origins of German imports of LNG, 2023-2024 (%)



Source: Authors based on data published by BDEW (2024b).

As noted in BDEW reports (2024a, b), the exact origin of imported natural gas is difficult to determine due to the complex European pipeline network. Approximations are used to estimate blending weights, but detailed data on the routes or ownership of LNG purchased through Germany's three import terminals is lacking. As shown in Chart 5, liquefied gas constituted a significant share of Germany's imports in 2023-2024. Despite 14 EU sanctions packages against the Russian Federation, a full gas import embargo has not been implemented; the latest sanctions in June 2024 only banned LNG transshipments, not supplies. A recent study by the German non-profit „Urgewald” and Belgium's „Bond Beter Leefmilieu” indicates that Germany continues to indirectly acquire gas from the Russian Federation, despite halting direct deliveries since August 2022 (Humpert, 2024). Despite Germany's decoupling from Russian gas, some of its gas purchases in 2023 still included Russian-origin LNG due to re-exports by traders. The Netherlands and Belgium, major suppliers to Germany, increased LNG imports from the Russian Federation, with over 11% of regasified Russian LNG in Belgian deliveries going to Germany. Overall, 4-6% of Germany's gas imports in 2023 came from the Russian Federation. More efforts are needed to stop Russian gas inflows, but no EU agreement has yet been reached to fully ban Russian LNG imports, which would further reduce Russia's revenues and limit its ability to finance the conflict in Ukraine.

5. Measures Taken to Ensure the Security of Energy Supply after February 2022

In response to the energy crisis in 2022, Germany swiftly enacted the LNG Acceleration Act to expedite liquefied natural gas imports, temporarily waiving certain procedural requirements. The government leased three floating storage and regasification units (FSRUs) and funded

infrastructure improvements. Simultaneously, Germany negotiated increased gas supplies with Norway and the Netherlands, leading to Norway surpassing the Russian Federation as Germany's primary gas supplier by the end of the year. To counter rising energy prices, Germany introduced several protective measures. The first package provided EUR 7 billion in financial support to companies, while a second package offered relief to households through tax reductions and direct payments. A third package, worth EUR 200 billion, included a price cap for households and industries, offering further protection and encouraging energy savings. Efforts to reduce gas consumption also included a new auction-based trading system for industrial consumers and regulations limiting temperatures in public buildings. These measures helped stabilize the economy while addressing both immediate and long-term energy needs.

6. Conclusions

Our main finding highlights that, given the Russian Federation's traditional role as Germany's primary supplier of fossil fuels, the Ukraine conflict and subsequent EU sanctions have underscored the potential risk of an energy emergency resulting from a possible supply shortage due to the interruption of Russian gas supplies.

Our second finding reveals how despite the anticipated cessation of supplies, which eventually occurred at the end of August 2022, the German government was able to mobilise rapidly and implement efficacious measures to diversify supply sources, reduce consumption and protect vulnerable consumers (e.g. energy-intensive industries). This facilitated a rapid market recovery and a secure and (almost) complete decoupling from energy imports from the Russian Federation.

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RECENT ECONOMIC MIGRATION FROM RUSSIA TO THREE WESTERN BALKAN COUNTRIES

Abstract: *Economic migration from Russia to Serbia has significantly increased since the Russian invasion of Ukraine. The migrants include qualified workers, entrepreneurs and companies. They are providing a transfer of technology, know-how and investment for the welcoming Serbian economy. The Serbian government is actively attracting economic migration from Russia, in order to derive maximum economic benefit from the geopolitical situation. This is in line with Serbia's general policy focus on economic growth and foreign investment. Most individual migrants are relocating for economic reasons rather than any particular political engagement. An extensive Russian diaspora economically anchored in regions with close political and historical links to Russia, such as Serbia, is likely to create levers for Russian influence and geo-economic soft power in the medium to long term. The magnitude of recent Russian corporate migration is relatively limited. However, most companies operate in the critical information technology sector. Corporate migration is highly unlikely to affect Moscow's regional economic influence in the short term. Nevertheless, the access points gained into the Serbian economy are likely to become a lever for Russian soft power in the long run. Serbia is highly likely to be used as a bypass for „parallel imports” to a significant degree. However, from a global perspective, the country is so far not a major hub for sanctions circumvention. Recently relocated Russian companies are almost certainly aiming to evade the impact of economic sanctions on their personal interests. It is likely that some will be used for creating (illegal) sanctions circumvention schemes in the future.*

Keywords: *Russian economic migration; Western Balkans*

JEL: *F22; F51; J61*

1. Introduction

Since Russia's invasion of Ukraine started in February 2022, economic migration from Russia to the Western Balkans, in particular Serbia and Montenegro, has sharply increased. At the same time, Serbia is the only European country not implementing economic sanctions on Russia. The Serbian government persistently pursues its foreign policy of balancing strategy between the West/EU, Russia, and China.

This article intends to provide an overview of recent Russian economic migration towards the Western Balkans, including companies, workforce, and entrepreneurs. It aims to shed light on whether this economic migration in a geopolitical context may provide access points for Russian influence in the future.

2. A Recent Influx of Russian Migrants

Serbia has been one of the popular migration destinations for Russians leaving their country since the invasion of Ukraine. Since March 2022, approximately 357,000 Russian citizens have entered Serbia, at least some 50,000 of whom have so far decided to stay permanently (Kovacevic, 2023).² The Serbian authorities received the largest number of residency and work applications (approx. 10 000 and 5 000 respectively) in March 2023 (European Commission, 2023). Since March 2022, Serbia has granted more than 12,500 work permits and 28,000

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² There is a certain level of mobility as some Russians leave Serbia for EU countries. Thanks to direct flights operated by Air Serbia between Serbia and Russia (Moscow, Saint Petersburg, Sochi and Kazan), many Russian emigrants have reached the region via Belgrade, but Istanbul remains the main hub towards the WB.

residency permits to Russian citizens (Kovacevic, 2023). A large share of the migrants work in IT-related sectors, are technically qualified and can work remotely. They are mostly middle class and financially well off, especially compared to Serbian standards of living.

In Montenegro, the number of Russian citizens staying permanently increased by approximately 17,000 in 2022 (European Commission, 2022). As of March 2023, around 21,000 Russians were officially residing in Montenegro and an additional 64,000 were registered for stays longer than 90 days, making up around 13% of the population (Jovanovic, 2023).³

In Bosnia and Herzegovina (BiH), approximately 13,000 Russian nationals arrived in the autumn/winter months of 2022/2023 (Ministry of Security, 2022).⁴ At least 2,500 Russian nationals arrived from Serbia illegally, staying permanently in Republika Srpska (Kovacevic, 2024). There are indications of growing Russian interest in purchasing real estate in Banja Luka (Linhart et al., 2024). As in Serbia and Montenegro, Russian nationals are exempt from tourist visa requirements.

Against the background that the war in Ukraine would persist and of Western states introducing economic sanctions on Moscow, many Russian businessmen and technical workers decided to relocate to the Western Balkans (WB), mostly to Serbia. Their main intention was to migrate to a country where they would be able to continue their economic activities. The motives of Russian citizens migrating to Serbia are economic rather than political. Most of them are business-oriented people with a focus on prospering and, hence, avoiding Western sanctions on Russia. The majority lack any political conviction and cannot be considered political refugees. Men seeking to avoid the mobilisation clearly comprised the majority of migrants in autumn 2022, however, that does not automatically mean that they disagreed with the Russian aims regarding Ukraine. Many of the Russian migrants feel quite comfortable in Serbia and are likely intending to stay on a long-term basis. In 2022, Russian citizens who had come to Serbia since the war in Ukraine generated around EUR 600 million (1% of Serbia's GDP) for the Serbian economy (European Commission, 2023).⁵

3. Corporate Migration from Russia

Since March 2022, approximately 1.479 Russian companies have registered their business in Serbia (Bell-Davies, 2024). That represents a steep, 18-fold increase compared to the previous year.⁶ Additionally, approximately 4.739 individual Russian entrepreneurs registered in Serbia (Ibid.).⁷ The majority of companies and entrepreneurs operate in the IT sector⁸ and are located mainly in Belgrade and Novi Sad. 2022 also brought an increase in Russian investments in Serbia. The Russian share of total foreign direct investment (FDI) in Serbia is very low, at just 1-2%, yet in 2022 this quadrupled compared to the previous year (RFE/RL's Balkan Service,

³ Montenegro's small population is around 620.000.

⁴ However, this number is likely to be biased, due to multiple entries in order to circumvent the 30-day visa (the „visa run” between BiH and Serbia). Between June and September 2022, 22 000 Russian citizens entered the country but 20 000 also left (European Commission, 2022). In the summer, a large share probably entered for vacation reasons only.

⁵ Through tourism, taxes, private consumption and other spending.

⁶ In 2021, only 82 companies with a Russian background registered in Serbia (Kovacevic, 2023).

⁷ It is likely that a large share registered for residency permit reasons.

⁸ In formation technologies, programming, wholesale trade, and consulting services.

2023).⁹ This has likely not been done by Russian state-owned enterprises, but rather by private companies relocating to Serbia.¹⁰

Serbia is appealing to Russian companies interested in preserving their commercial ties with Western companies and exploiting the European market from there: the country is closely interlinked with EU economies though also provides a vector into Eurasia through its free trade agreement with the Eurasian Economic Union. Also, by moving operations to Serbia the Russian companies protect their own IT specialists from mobilization. The arrival of tech giants Luxoft and Yandex will likely attract further tech companies and IT experts from Russia.

In Montenegro, the corporate influx from Russia over the first year of the war has been at a relatively high level, bearing in mind the much smaller size of the Montenegrin economy. In 2022, approximately 3800 business activities with a Russian background were registered (Ivanovic, 2023). This accounted for more than half of total foreign registered companies.¹¹ In addition, in the first quarter of 2023, Russian citizens established a further 1230 business entities (Ibid.). Almost all of these operate in the IT/computing/data/consulting sector. Russia has been the major source of FDI in Montenegro for the last 15 years, most of it related to real estate. Of the EUR 448 million invested in the real estate sector in 2022, EUR 127 million stems from Russia (Kajosevic, 2022).¹² Like Serbia, Montenegro does not require visas for Russian citizens¹³ and traditionally hosts a lot of Russian tourism. However, Montenegro is aligning with the Western sanctions and applying the restrictions imposed by the EU. In many cases, the registration of business activities is likely to be related to obtaining residence permits.

In Bosnia and Herzegovina, the corporate influx is at significantly lower levels. However, the number of companies owned by Russian nationals has almost doubled from 40 to 70 since the war in Ukraine (U.S. Department of State, 2023). However, those companies face difficulties as banks in BiH mostly comply with the sanctions regimes and do not provide financial services. As in Serbia, there is an obligation to arrange the necessary formalities allowing foreigners to start a business in BiH. The registration of business activities in BiH is likely to be mainly related to obtaining residency permits. FDI from Russia has been decreasing since the war in Ukraine and is currently limited to some companies in the coal and oil energy sectors (Ruta et al., 2022).

4. Serbia's Position and Role

The Serbian state provides some incentives for economic migration from Russia, although they are not tailored specifically to Russians but to any foreigners:

- Russian citizens do not require a visa to enter Serbia.¹⁴ They can enter and leave Serbia multiple times and continuously extend their tourist status (resulting in the „visa run”

⁹ From EUR 11 million in 2021 to EUR 50 million in 2022. However, Russian FDI fell from an even higher level in 2019.

¹⁰ In 2021, the Serbian government planned with a substantial EUR 2 billion Russian loan for an urban railway project (Belgrade Diameters) to be implemented by Russian state enterprises starting in 2022. So far, the project and the relevant loans have not yet materialised.

¹¹ Total foreign registered companies – 7000.

¹² According to surveys, more than 40% of real estate in Montenegro is owned by (wealthy) Russians.

¹³ For a period of up to 90 days.

¹⁴ They can officially stay in Serbia up to 30 days, which can be extended for an additional 30 days if they leave and return to Serbia. If they want to stay longer, they need to obtain a temporary residence permit, which could be done on the basis of: A. establishing a company (including self-employment), B. purchasing real estate or C. family reunification. Temporary residence is granted for a maximum period of one year, which can be extended (if they

between Serbia and BiH). Also, foreigners are not obliged to apply for an extra residence permit if they open a business activity in Serbia¹⁵;

- Both incoming companies and individuals benefit from the relatively liberal Serbian regulations that require simple registration procedures for companies or entrepreneurs. The registration fees are low and foreigners are not required to be present in order to finalise the registration process (Stavretovic, 2024);
- Additionally, in June 2022 the Serbian government passed a decree on subsidising companies for employing qualified migrants coming to Serbia (Popovic, 2022). The condition for receiving the subsidy is that there must be a shortage of such skilled labour in Serbia. The company will then benefit from generous tax relief for these employees. Since this incentive scheme was implemented in June 2022 many of its beneficiaries have been Russian IT companies settling in Serbia over the first year of the war (European Commission, 2023);
- The Serbian authorities' plan to simplify the process of granting citizenship, which will enable new citizens to travel around the EU without a visa (Restelica, 2023).

These regulations reflect Belgrade's focus on foreign-induced economic growth and the need for qualified IT workers. Serbia is losing a large share of its own qualified workforce to the European labour markets and lacks qualified IT specialists (World Bank Group, 2019). Hence, Serbian government officials are welcoming the arrival of Russian companies, capital, expertise and technology in the country. The government's intention is to entice more IT companies and specialists from Russia (and elsewhere).

A strong focus on economic numbers and attracting foreign investment has always been at the core of the SNS¹⁶ 21-government's policymaking. Serbia already benefited economically from its non-aligned position when sanctions against Russia were introduced after the Crimea annexation in 2014 (European Parliament, 2023; European Commission, 2023). The government's balancing strategy in foreign policy places a somewhat opportunistic focus on the country's economic growth regardless of the political implications.

5. Sanctions Circumvention

Serbia is, along with Turkiye and Belarus, the only country in Europe that has not imposed any economic sanctions against Moscow. Unlike Turkiye, the UAE, Armenia or China, Serbia is not one of the countries with massive increases in exports to Russia since the war in Ukraine (and Western sanctions). Yet, Serbia's 34% year-on-year rise in exports to Russia¹⁷ indicates that the country is likely to be used as a bypass to circumvent sanctions („parallel imports”) to some degree (World Bank Group, 2020).¹⁸ However, there are no indications that the Serbian authorities have so far been actively facilitating such transfer of goods or technologies.

By relocating themselves to Serbia, Russian companies can maintain their access to European markets and clients, and evade constraints entailed by the West's sanctions regime. It is likely that some newly registered companies with a Russian background are being used to create

submit the new request no longer than 30 days before the expiry of the temporary residence permit). They can extend their temporary residence as long as they meet the conditions for temporary residence.

¹⁵ However, one has to be a resident to be able to open a bank account in Serbia.

¹⁶ Srpska Napredna Stranka (Serbian Progressive Party).

¹⁷ From March 2022 to March 2023.

¹⁸ For example, Serbia's export of phones to Russia exceptionally multiplied from a volume of USD 8518 in 2021 to USD 37 000 000 in 2022.

(illegal) schemes to circumvent sanctions and provide sanctioned goods for the Russian market.¹⁹

6. Conclusions

Recent economic migration from Russia is unlikely to substantially change Russia's economic footprint indicators (FDI share, trade share, funding/loaning) in the Western Balkans in the short term.

However, it provides a transfer of technology, know-how and investments for the welcoming Serbian economy, in particular for the critical IT sector.

A broad Russian diaspora economically anchored in regions with close political and historical links to Russia, such as Serbia, is likely to create access points for Russian influence and geo-economic soft power in the medium to long term.

It is likely that some recently-relocated companies will be used for creating (illegal) sanctions circumvention schemes in the future.

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CONCEPT OF ECONOMIC SENSITIVITY TO BORDER CONTROLS

Abstract: *The transport of goods within the EU is highly sensitive to the reintroduction of land border controls. Such sensitivity has a particular relevance for the Bulgarian economy, due to the country's non-accession to the so-called land Schengen. The aim of this study is, by applying a developed unified methodology, to evaluate the impact on the Bulgarian economy in terms of exported and imported goods and the transport sector from a potential increase in the border waiting time at the land borders between Bulgaria-Romania, Bulgaria-Greece and Romania-Hungary.*

Keywords: *border controls; Schengen area; economic impact*

JEL: *F15; B17; B41; C13*

1. Introduction

The accession of Bulgaria to the Schengen Area by land and the consequential potential economic impact has recently become a topic of high public interest. Different studies have shown that the implementation of the Schengen arrangements increases the economic benefits for the participating countries in general and serves as an additional tool to counter external influences on the Single Market.

In August 2024, a group of members of the European Parliament encouraged the EC President to adopt stricter measures against Hungary, including a potential exclusion of the country from the Schengen area of free travel (Restelica, 2024). Furthermore, the Schengen area countries currently face a series of challenges related to migration issues such as the recent surge in refugee flows, their containment and control, which confront their overall national security. Consequently, this has led to the implementation of extraordinary measures, including the reintroduction of temporary land border controls by countries such as Germany, Austria, Norway, Slovenia, Italy and others (European Commission, 2024b). This raises the pertinent question regarding the economic impact on the transportation of goods through land borders, how sensitive it is to the (re)introduction of (temporary) border controls and to an increase of the border waiting time in general. Despite the increasing relevance of this issue, there is a systematic lack of scientific research on the topic and a concrete and targeted assessment of the economic impact of such processes. Although initiatives like the exclusion of Hungary are purely hypothetical and highly unlikely, and the reintroduction of land border control by the Schengen member-states is temporary, such issues undoubtedly affect the transportation of goods within the Schengen area and the EU. Moreover, such impact can be seen as particularly heightened for Bulgaria due to its non-accession to the so-called land Schengen, the current existence of border controls on its land borders with other states, and the increasing waiting time on the border crossing points. As part of a team that developed a comprehensive methodology for evaluating the economic impact of a country's accession to the Schengen Area in the case of Bulgaria (Bobeve et al., 2024), the author of this paper, by applying the already developed unified methodology, aims to evaluate the impact on the Bulgarian economy in terms of transportation of goods through the land borders from a potential increase in the border waiting time by 1 additional hour on the Bulgarian-Romanian, Bulgarian-Greek and Romanian-Hungarian land borders.

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2. General Theoretical Background

The free movement of goods is one of the fundamental principles of the EU that aims to establish a Single market devoid of internal borders, allowing goods to move freely between member states. Along with the free movement of people, capital, and services, this principle is one of the EU's four fundamental freedoms (European Parliament, 2024).

Although it concentrates more on the pragmatic concerns of border controls and movement, the Schengen area builds upon the EU's fundamental principles. On the one hand, the Schengen agreement abolishes internal borders between participating countries, facilitating faster and more efficient transportation of goods. This reduction in border control costs and delays enhances trade efficiency (European Commission, 2024a). Businesses can optimize their supply chains, reduce inventory costs and improve their delivery time with fewer border checks as for industries that depend on just-in-time delivery and other time-sensitive processes, this integration is essential (European Parliament, 2024).

With regards to labour mobility, on the other hand, free movement is meant to boost economic growth by facilitating labour flows to where they are most needed. Such mobility helps fill job vacancies, supports businesses in finding the skills they require, and boosts productivity throughout the EU (Müller, 2019). For instance, the Schengen area facilitates the movement of seasonal agricultural workers across borders, helping farmers access the labour they need during peak times (FC, 2018). This is particularly important for countries with labour shortages in the agricultural sector. As „the main goal of agriculture has always been to grow as many crops as possible in the shortest possible time and at the lowest cost” (Branzova, Dimitrova, 2023), the reduction in border controls and customs procedures lowers transportation and logistics costs for agricultural goods. This can lead to lower prices for consumers and higher competitiveness for producers.

By establishing a more cohesive economic environment, the Schengen area also promotes economic convergence. Better economic integration between nations and regions can result in balanced economic growth and a decrease in regional (European Parliament, 2024). Furthermore, the Schengen countries often align their regulations to ensure smooth trade flows. As it has been proven that strengthening the regulatory framework of the Single Market for trade and investment in the EU provides additional advantages to certain countries while placing other member states at a disadvantage (Panushev et al., 2023), the Schengen regulatory harmonization, in turn, reduces non-tariff barriers and simplifies compliance for businesses operating across multiple countries (EUR-Lex, 2024).

Last but not least, the reduction of land border control facilitates a distinctive positive environmental effect by reducing tons of CO² emissions generated by road freight and passenger transport (Bobeva et al., 2024). That in turn could support the European Green Deal that „aims to make Europe climate-neutral by 2050, boost the economy through green technologies, create sustainable industry and transport, and reduce pollution” (Bobeva et al., 2023).

3. Methodological Notes

The evaluation is based on the developed comprehensive methodology, in its part concerning road freight transport, as developed by the ERI-BAS team (Bobeva et al., 2024). By applying the methodology, it is important to note that effects on freight transport are only evaluated in terms of direct and potential effects, excluding the environmental effect. Nevertheless, the

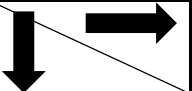
estimation includes both the effect on the transported goods and on the vehicles that transport these goods.

4. Evaluation of the Economic Sensitivity to Border Controls

Currently, the losses for Bulgarian exporters, importers and the transport sector transporting these goods to and from Schengen Area countries, resulting from the non-accession of Bulgaria to the land Schengen, are estimated at approximately BGN 1.4 billion (including direct losses and losses from missed opportunities to generate alternative income) (Bobeva et al., 2024). The evaluation takes into account all the borders the Bulgarian imported and exported goods pass (including Bulgaria-Romania, Bulgaria-Greece and Romania-Hungary).

The versatility of the developed unified methodology (Bobeva et al., 2024) also allows for a more in-depth evaluation of the effect on the potential losses. In this context, the methodology enables an evaluation of the extent to which the Bulgarian exporters, importers, and transport companies are impacted under equal conditions, should there be a hypothetical increase in border waiting time on the country's borders with Romania, Greece and the border between Romania and Hungary. Such an increase could be prompted by different factors, including a hypothetical exclusion of Hungary from the Schengen Area, whose borders are part of the trade route through which the Bulgarian exported and imported goods pass. Table 1 presents an overall assessment of this economic impact, stemming from increased border crossing times between Bulgaria and Romania, Bulgaria and Greece and Hungary and Romania. The economic impact has clearly delineated and measurable negative consequences for the Bulgarian economy, which can be quantified based on the increase in the current losses resulting from an increase in the border crossing time by one additional hour (Table 1).

Table 1. Annual economic loss for Bulgarian exporters, importers and transport sector for 1 additional hour increase in the average time for passing border control at the land borders of Bulgaria with Romania and Greece, as well as at the land borders of Romania with Hungary, 2023 data (BGN million)

	Current Loss	1 additional hour at the Bulgaria-Romania border	1 additional hour at the Bulgaria-Greece border	1 additional hour at the Romania-Hungary border	Cumulative increase by 1 additional hour at all three borders
Annual direct loss (BGN million)	845	↑ +34.8	↑ +33.3	↑ +25.9	↑ +94.0
Annual potential loss (BNG million)	545	↑ +22.4	↑ +21.5	↑ +16.7	↑ +60.6
Total annual losses (direct and potential) (BGN million)	1 390	↑ +57.2	↑ +54.8	↑ +42.6	↑ +154.6
Increase in the total annual loss (%)	---	↑ +4.1%	↑ +3.9%	↑ +3.1%	↑ +11.1%

Source: own calculations based on the comprehensive methodology developed by Bobeva et al., 2024; data retrieved from Bobeva et al., 2024.

An increase of the waiting time at the Bulgaria-Romania land border by one additional hour would result in an increase in current losses for the Bulgarian exporters and importers of goods and the transport sector by 4.1% or BGN 57.2 m. annually, as per data from 2023. Such increase

includes both a BGN 34.8 m. in direct losses and BGN 22.4 m. in lost opportunity for generating alternative revenues. Thus, the overall economic loss for the Bulgarian economy would rise from BGN 1.39 bn. to BGN 1.45 bn. per year as these losses provide for higher labour, service and operation costs and extended delivery times, which in turn generally harms the competitiveness of the Bulgarian economy. Similarly, one additional hour at the Bulgaria-Greece land borders would increase the current losses for Bulgarian exporters and importers of goods and the transport sector by 3.9% or BGN 54.8 m. per year (including BGN 33.3 m. in direct losses and BGN 21.5 m. in lost opportunity for generating alternative income). In that sense, the total annual loss for the Bulgarian economy would increase from BGN 1.39 bn. to BGN 1.44 bn., based on 2023 data. The additional delay for passing the land borders would not only disrupt supply chains but would also increase the cost of goods, thereby impacting the economic efficiency and productivity of the Bulgarian importers, exporters and the transport sector. One additional hour increase in waiting time at the Romania-Hungary land border would similarly result in a 3.1% rise in current losses for Bulgarian exporters and importers of goods and the transport sector. This amounts to an additional annual loss of BGN 42.6 m., including BGN 25.9 m. in direct losses and BGN 16.7 m. in lost opportunities for generating alternative revenues. Thus, the total loss would increase from BGN 1.39 bn. to BGN 1.43 bn. per year, according to 2023 data. Although Bulgaria does not have a border with Hungary, the country has a strategic location within the northern trade route of the Bulgarian exporters and importers. In that sense, a delay at the Romania-Hungary land borders would also pose a significant risk to trade efficiency with a direct negative impact on the Bulgarian economy.

A cumulative increase in the waiting time at all three land borders (Bulgaria-Romania, Bulgaria-Greece and Hungary-Romania) by one additional hour each would result in a total increase of the annual loss for the Bulgarian importers, exporters and transport sector by 11.1% or BGN 154.6 m. This includes BGN 94.0 m. in direct losses and BGN 60.6 m. in lost opportunity for generating alternative revenues. Thus, the overall annual economic loss would increase from BGN 1.39 bn. to BGN 1.54 bn., according to 2023 data. That underscores the significance of the economic challenges faced by the Bulgarian exporters, importers and transport sector arising from navigating multiple border delays. That in turn hinders not only the trade efficiency and competitiveness of the Bulgarian economy, but its economic growth as a whole. The average weighted increase in annual losses resulting from one additional hour delay at land border controls across the three borders is estimated at BGN 53.5 m., representing an increase of the average annual loss by 3.8% per additional hour. These figures illustrate the sensitivity of the Bulgarian economy to border delays and highlight the importance of reducing land border controls to minimize economic losses.

4. Conclusion

The evaluation concludes that any increase in the land border waiting time has a significant adverse economic impact on Bulgarian exporters, importers and the transport sector. One hour increase in waiting time at the Bulgaria-Romania border would result in an annual economic loss of BGN 57.2 m. An increase at the Bulgaria-Greece border would result in a loss of BGN 54.8 m., while such an event at the Hungary-Romania border would lead to an increase of the annual loss by BGN 42.6 m.

A combined increase in waiting time at these borders by three hours would increase the annual loss by BGN 154.6 m., as the weighted average loss for a one-hour increase is estimated at BGN 53.5 m., highlighting the critical role of abolishing land border controls. These figures illustrate the sensitivity of the Bulgarian economy to border delays and highlight the importance of reducing land border controls to minimize economic losses. The analysis reveals that

increased waiting time at land borders significantly impacts the Bulgarian exports, imports, and transport sector. The compounded effect of border delays not only increases direct costs but also results in a substantial loss of opportunities for alternative revenue generation. That in turn, highlights the importance of Bulgaria's accession to the Schengen area by land.

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HUMAN CAPITAL, INNOVATION CAPACITY AND ECONOMIC DEVELOPMENT IN EASTERN EUROPEAN COUNTRIES

Abstract: This article examines the relationship between human capital and innovation capacity in driving economic growth in Eastern European countries. Human capital, measured by the Harmonized Learning Outcomes Index, and innovation capacity, measured by the Global Innovation Index, are critical for fostering long-term economic development. Using data from 15 Eastern European countries over the period 2000-2020, we employ regression analysis to investigate how these factors correlate with the Gross Domestic Product per capita. Our findings reveal a moderate to strong positive relationship between both human capital and innovation capacity with economic growth, with innovation capacity demonstrating a stronger impact. The study highlights the need for balanced investments in education and innovation to achieve sustainable development in the region.

Keywords: human capital; innovation capacity; economic growth; Eastern Europe; Harmonized Learning Outcomes Index

JEL Codes: O47; I25

1. Introduction

In the global economy, the synergy between human capital and innovation capacity is crucial for driving economic development and competitiveness. Human capital, which includes the knowledge, skills, and abilities possessed by a country's population, has long been recognized as a fundamental driver of economic growth (Lucas, 1988; O'Neill, 1995). However, the role of human capital extends beyond economic growth; it's also a critical factor for innovation, particularly in regions experiencing significant economic and political transformation. Eastern European countries, in particular, present a unique case for studying the relationship between human capital and innovation capacity, given its diverse historical contexts, political transitions, and varying degrees of integration with the European Union.

Measuring Human Capital

While early research focused on the quantity of education, recent studies highlight the importance of education quality for long-term economic growth. Hanushek and Woessmann, 2008 demonstrate that cognitive skills – measured through literacy, numeracy and problem-solving – strongly correlate with GDP growth. To capture these nuances, the Harmonized Learning Outcomes (HLO) Index has been developed to harmonize data from international assessments and provide a more comprehensive measure of human capital quality (Angrist et al., 2021).

Measuring Innovation Capacity

In addition to human capital, innovation capacity plays a critical role in driving economic growth. Innovation capacity refers to a country's ability to create and commercialize new products, services, and technologies, which leads to increased productivity, market expansion, and job creation (Furman et al., 2002). As Rosenberg (2004) argues, innovation is the key engine of economic progress, and economies that prioritize innovation tend to experience faster

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growth. The Global Innovation Index (GII) is widely used to assess countries' innovation performance by combining inputs such as human capital, research infrastructure, and outputs like technology and knowledge creation.

This article seeks to explore the relationship between the quality of human capital (as measured by the HLO Index) and innovation capacity (assessed by the GII) across 15 Eastern European countries, as significant factors that contribute to economic growth.

2. Problem Definition

In the context of modern economic theory, both human capital and innovation capacity are recognized as critical determinants of economic growth. However, the relative importance of each remains a subject of ongoing debate. Innovation capacity is arguably more directly linked to economic development (Furman et al., 2002). Innovation drives firms to create new products, improve efficiency, and enhance competitiveness, which, in turn, can lead to higher profits, increased market share, and sustained economic growth (Aghion, Howitt, 1992). As such, countries that foster a strong innovation ecosystem often experience significant economic advancements.

Nevertheless, the foundation of innovation lies in the quality of human capital. Without a highly educated and skilled workforce, firms may struggle to develop and implement innovative ideas effectively (Hanushek, Woessmann, 2008). Education and training are crucial for equipping individuals with the cognitive and technical skills necessary for innovation.

Thus, human capital not only contributes directly to economic growth but also serves as the bedrock upon which innovation is built (Svejnar, 2002; Campos, Coricelli, 2002). The interplay between these two factors – human capital and innovation capacity – raises the critical question: which is more instrumental in driving economic development? This study seeks to investigate the relationship between economic growth, human capital, and innovation capacity across Eastern European countries over the period 2000 to 2020.

3. Methodology

We analyze two major indexes: the Harmonized Learning Outcomes (HLO) Index, which serves as a proxy for the quality of human capital, and the Global Innovation Index (GII), which captures various dimensions of a country's innovation capacity. These indexes are then examined in relation to the countries' economic growth, as measured by GDP per capita (World Bank, 2020; WIPO, 2020).

Data Sources

The data for this analysis is derived from several authoritative sources:

- HLO Index: Data for human capital quality, harmonizing test scores from international assessments like PISA, TIMSS, and PIRLS, as sourced from the World Bank.
- GII: Innovation capacity is measured using the Global Innovation Index, published annually by the World Intellectual Property Organization (WIPO) in partnership with Cornell University and INSEAD.

- GDP per capita: Economic growth data is obtained from the World Bank for all 15 Eastern European countries².

Empirical Strategy

To analyze the relationship between human capital, innovation capacity, and economic growth, we use regression analysis. Specifically, we run two separate ordinary least squares (OLS) regression models to evaluate the impact of both the HLO and GII on GDP per capita:

Regression Model 1: Examines the relationship between the HLO Index and GDP per capita, testing the hypothesis that higher human capital quality is positively associated with economic growth.

Regression Model 2: Analyzes the relationship between the GII and GDP per capita, assessing whether innovation capacity is a stronger determinant of economic growth compared to human capital.

Limitations

While this study aims to provide a comprehensive analysis, it is important to acknowledge certain limitations. First, the availability of data for some countries is limited, particularly for earlier years. To address this, we rely on the most recent data available but recognize that gaps may exist. Second, the study does not account for all possible factors influencing economic growth, such as cultural and political differences, which may also affect innovation and human capital development. Finally, the correlation between variables does not necessarily imply causation and further research could benefit from more advanced techniques such as instrumental variables to better establish causal relationships.

4. Research Results

HLO Index – Eastern European Countries’ Performance

Table 1 illustrates Eastern European countries’ performance in terms of the quality of education, based on the latest HLO Index published by the World Bank in 2020:

Estonia is the top performer in the group, followed by Poland and Slovenia. These countries achieved the highest average scores in all the international assessments, including PISA, TIMSS, and PEARLS in that year. The reasons behind this performance in Estonia are versatile – a decentralized educational system, digital innovation, strong emphasis on regular assessments and feedback, as well as highly qualified teachers. Yet, it’s interesting to see whether the high quality of education translates into high innovation capacity.

² The study covers 15 countries, including Bulgaria, Greece, Romania, Serbia, Albania, Croatia, the Republic of North Macedonia, the Baltic republics (Lithuania, Latvia, and Estonia), as well as the Czech Republic, Hungary, Poland, Slovakia, and Slovenia. For this analysis, these countries are considered part of Eastern Europe, based on their historical and political connections.

Table 1. Eastern European Countries' Performance 2020 – Harmonized Learning Outcomes Index

Country	HLO Score
Estonia	543
Poland	530
Slovenia	521
Czech Republic	512
Latvia	504
Lithuania	496
Hungary	495
Slovakia	485
Greece	469
Serbia	457
Romania	442
Bulgaria	441
Serbia	435
Albania	434
North Macedonia	414

Source: <https://ourworldindata.org/grapher/average-harmonized-learning-outcome-scores>

GII Index – Eastern European Countries' Performance

Looking at 2020 data, the GII index is similar to the HLO ranking and performance.

In 2020 (we take that year as a reference so that we can make a meaningful comparison with the HLO index's latest published data) countries from Eastern Europe achieved the following results, as listed in Table 2:

Table 2. Eastern European Countries' Performance 2020 – Global Innovation Index

Country	HLO Score
Estonia	49.9
Czech Republic	49.4
Slovenia	47.7
Hungary	43.6
Bulgaria	42.6
Poland	41.7
Lithuania	41.1
Latvia	40.5
Croatia	39.5
Greece	38.4
Slovakia	37.7
Romania	35.6
Serbia	34.8
North Macedonia	32.5
Albania	27.3

Source: <https://www.wipo.int/web/global-innovation-index/2020/index>

Similarly to the HLO index performance, Estonia, the Czech Republic, Slovenia, and Hungary are reported among the most innovative countries in the region, whereas Romania, Serbia, North Macedonia, and Albania are the least innovative ones.

To further analyze the correlation between the Global Innovation Index (GII) score and the HLO (Harmonized Learning Outcomes) Index, we also calculated the Pearson correlation coefficient, which measures the linear relationship between two variables. The Pearson

correlation coefficient is approximately 0.6, which indicates a moderate to strong positive correlation between the GII score and the HLO Index for the period under consideration. This suggests that, in general, countries with higher GII scores tend to have higher HLO Index values and vice versa.

Regression Analysis between GDP per capita and HLO Index: Evidence from Eastern Europe

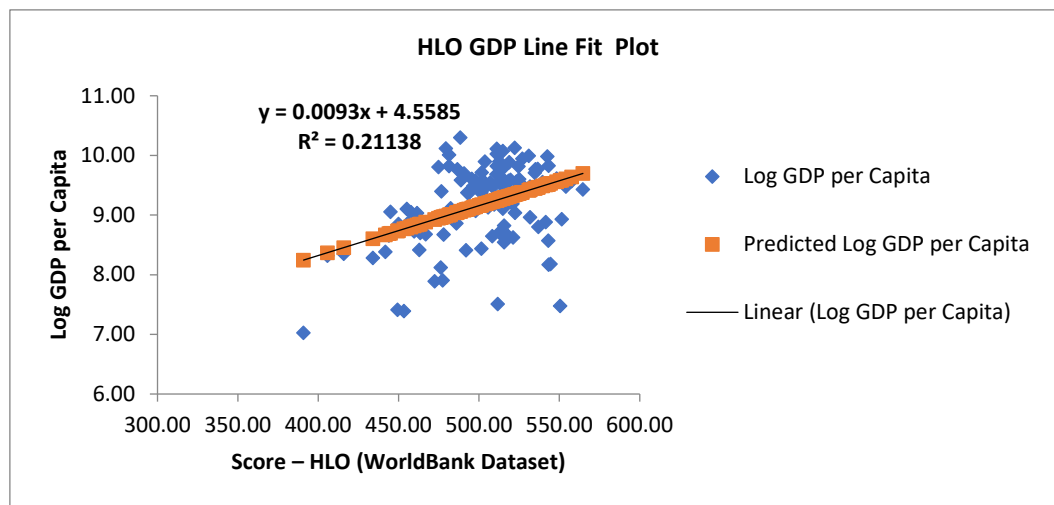
We performed a linear regression analysis between GDP per capita and the HLO index for the list³ of Eastern European countries and the period 2000 – 2020. The results are shown in Table 3 and Figure 1.

Table 3. Results from the linear regression analysis between GDP per capita and HLO

Regression Statistics	
Multiple R	0.459763
R Square	0.211382
Adjusted R Square	0.205022
Standard Error	0.622636
Observations	126

Source: Own calculations.

Figure 1. Linear Regression Line Fit Plot



Source: Own calculations.

The Linear Regression Model:

$$\text{GDP} = 0.0093 * \text{HLO Score} + 4.5585 \quad (1)$$

From the regression statistics table (Table 3), we see that R-squared = 0.211382. This means that the HLO score variable explains 21.1% of the change in GDP per capita, which is a statistically significant result. Furthermore, the regression model is characterized by F-stat = 21.32 and P-value = 0.00001, which is another piece of evidence for the suitability of the regression model.

³ Albania, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, Serbia, Slovakia, Slovenia, and North Macedonia.

Would the model improve if we used the GII index (measuring the innovation capacity of a country) instead of the HLO index (which measures the quality of human capital)?

We answer this question in the next section.

Regression Analysis between GDP per capita and GII: Evidence from Eastern Europe

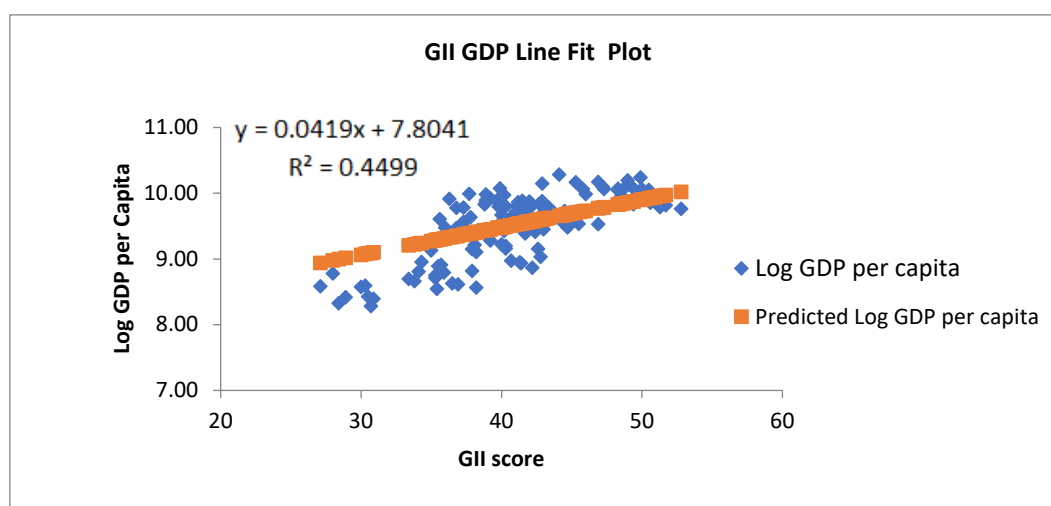
We performed another linear regression analysis between GDP per capita (dependent variable) and the Global Innovation Index (independent variable) with GII data available for the same period (2000 – 2020) and countries. The results are illustrated in Table 4 and Figure 2.

Table 4. Results from the linear regression analysis between GDP per capita and GII Score

Regression Statistics	
Multiple R	0.67078741
R Square	0.44995575
Adjusted R Square	0.44582008
Standard Error	0.37890337
Observations	135

Source: Own calculations.

Figure 2. Linear Regression Line Fit Plot



Source: Own calculations.

The New Linear Regression Model:

$$GDP = 0.0419 * GII \text{ Score} + 7.8041 \quad (2)$$

An R-squared of 0.4499 means that the GII score variable explains roughly 45% of the change in GDP per capita in these countries. This is a much stronger correlation than in our first model (when using the HLO as an independent variable).

The regression analysis was further re-estimated using heteroscedasticity-robust standard errors to account for potential heteroscedasticity in the data. This is particularly important in cross-country datasets, where economic indicators such as GDP per capita may exhibit non-constant variance across different countries. By applying this method for robust errors, we ensure that the standard errors are reliable, even in the presence of heteroscedasticity. The results show that the coefficient for the Global Innovation Index (GII) remains positive and statistically

significant, with a p-value of 0.000. This confirms the strong positive relationship between innovation capacity and GDP per Capita in Eastern European countries.

The results suggest a positive and statistically significant relationship between innovation capacity (GII) and GDP per Capita in Eastern European countries. Therefore, countries that invest in improving their innovation capacity tend to experience higher economic growth. However, as the R-squared value indicates, GII explains only part of the variation in GDP, so other factors (such as human capital, governance, or trade openness) also play a role in economic development.

5. Conclusions

This study examines the relationship between human capital, innovation capacity, and economic growth in Eastern European countries, utilizing the Harmonized Learning Outcomes (HLO) Index and the Global Innovation Index (GII) as key indicators. The results of the regression analysis highlight the positive correlation between both human capital and innovation capacity with GDP per capita. However, innovation capacity appears to have a stronger impact on economic growth than human capital alone.

Based on the performed research and analyses for Eastern European countries in the period 2000-2020, we conclude that:

- Both the quality of human capital and innovation capacity are positively correlated to a nation's economic growth.
- Innovation capacity has a greater impact than human capital on GDP for Eastern European countries in the period under consideration.
- Students' educational achievements (evaluated in global educational studies) are vital for assessing human capital and innovation capacity.
- High scores (ranking) on the quality of human capital scale relate to the efficiency of innovations (and hence translate into high economic growth).

While this study has shed some light on the relationship between human capital and innovation capacity in the region, further research is needed to explore causal mechanisms and assess the impact of other factors such as technological adoption and international trade. Additionally, future studies should consider the role of digital transformation in both education and innovation as these become increasingly critical to maintaining competitiveness in the global economy.

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THE START-UP CONCEPT AND THE ECONOMIC FUTURE OF THE EU AFTER M. DRAGHI'S REPORT

Abstract: Recently, the former ECBank president M. Draghi loudly recalled Europe's lagging economic power, but without giving an original approach to reversing the trend, other than increased funding. Therefore, the article is an attempt to critically review the state, but also the unused potential of the EU start-up culture, which can provide a more reasonable and faster response at least to the part of the challenges. Following this direction, a brief comparison between the European and US start-up ecosystems is provided regarding the position and function of the HEIs in them. The data reveals that, in addition to their distance from the success of start-ups in the US and Asia, EU economies are also lagging behind the UK, which is no longer part of it. The pattern repeats when it comes to entrepreneurship education in Europe. Therefore, a direction is outlined for reflection on how to structurally change and improve the quality of the participation of HEIs in ecosystems across the continent, incl. with the introduction of a new look at training and collaboration with external organizations.

Keywords: competitiveness; start-up ecosystem, sustainable growth, higher education

JEL: F620; O20; O31; O33; O360; P510

1. Introduction

Media and less often political talk about start-up culture and its impact and results in Europe's economy has proven to be misleading about the effectiveness of entrepreneurship. The main argument for this is the recent one by former CEB President Mario Draghi (2024a,b). He sharply criticized the inability of the EU to compete with the US and Asia, and what is even more worrying, new concepts are completely absent, and there is already a great delay in solving the problem. The critics of the report pointed out the fact that it was just another alarm on the subject that would not lead to workable proposals, and Draghi only recommended larger spending on entrepreneurial projects. In this context, the paper aims to delve deeper into the roots of Europe's failures to build a stable and efficient environment for entrepreneurship to date. Insofar as it does not develop in a vacuum, the matter calls for a review of the wider picture of conditions in Europe to assess where and how the environment can be improved and developed, and in the near future to achieve this as quickly as possible competitive progress in question. The results of this limited study would be useful for illuminating parts and details of modern economic life that can change the rules and conditions for the realization of innovative ideas and enterprises.

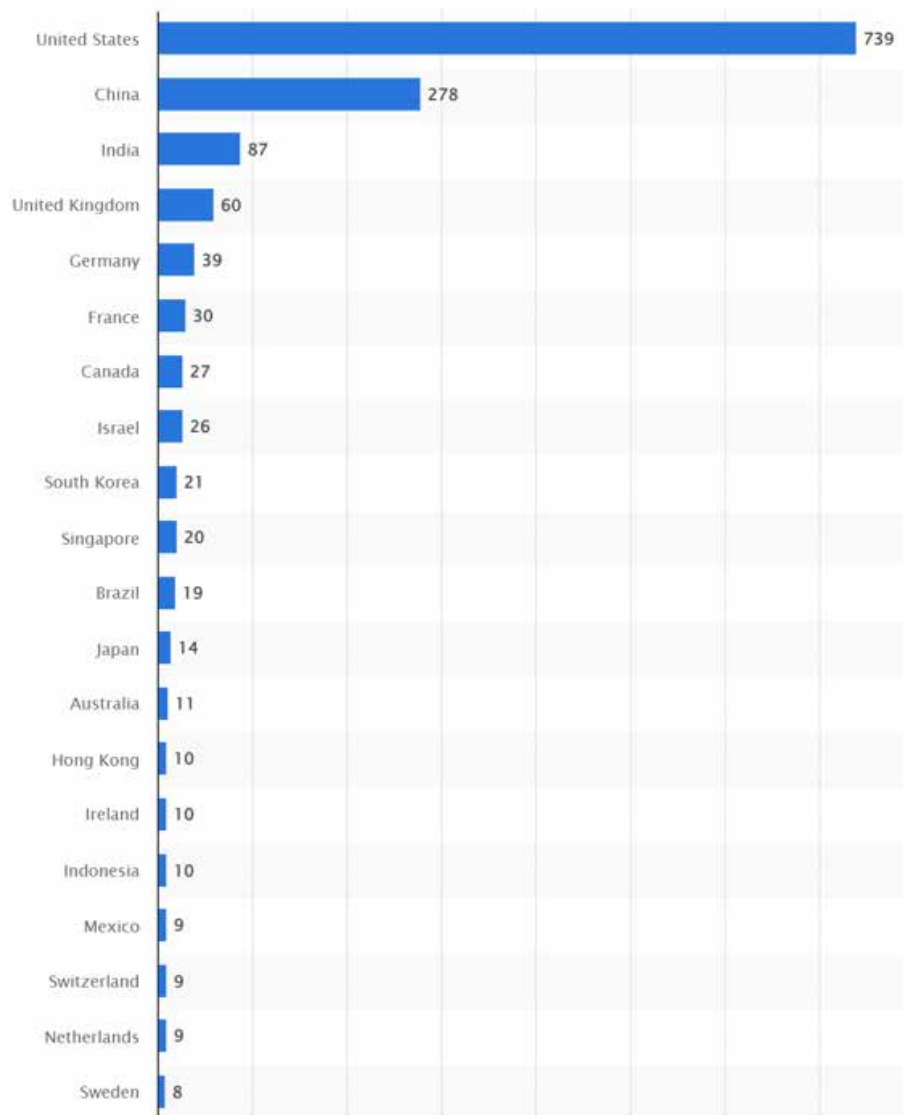
2. State of the Problem

Pointing to start-ups as a „bottom-up” type model for economic development is easier said than done in terms of organization. It requires not only appropriate environmental conditions but also a value system motivating entrepreneurs, especially young ones, to act actively and aggressively in the market. Nothing suggests that the US will lose its leading position as a discoverer of new spheres of value, nor that Asia will slow down. As *The Economist* (2024) underlined, in the current state of the technology landscape, most of the start-ups in AI and battery development require trillions of investments, which are barely affordable in the EU. For example, in 2023 the amount of investments in R&D in one of China's biggest companies in battery competition, CATL, achieved a \$2.5 bill. The most recent data shows (Figure 1) that

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the USA is by far leading in achieving „unicorns” (739). It is followed by China with almost three times lower number (278), and in Europe, the UK stands out (60), Germany has 39, and France – 30. What is also indicative is that in this ranking only a few other EU countries are listed, and they are at its bottom.

Figure 1. Number of unicorns worldwide (by country), February 2024,



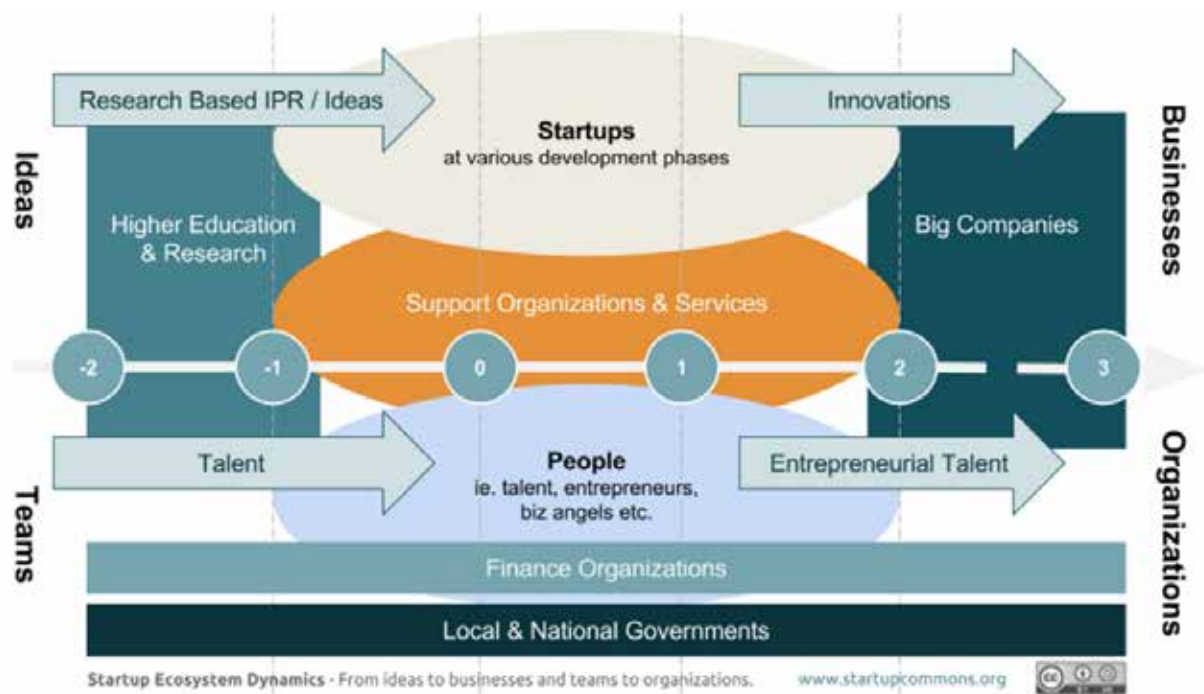
Source: Statista, 2024.

No less important detail is that entrepreneurship is part of the cultural and political, not just economic, development of North America. In the US, entrepreneurs are and always have been pop-culture icons who are not far or away from the country's political leaders. Although some of them do not have a university degree, others have a marked connection with the educational institutions in which they developed. The names of G. Washington (just the first one amongst the list of other 10 US Presidents who were entrepreneurs), John Rockefeller, H. Ford, S. Jobs, P. Knight, B. Gates, J. Bezos, L. Page and S. Brin, E. Musk, M. Zuckerberg, and S. Altman – just to list the most significant ones – are part of the cultural memory and put a human face of the progress of the country through the success of free economic initiative and discovery of new spaces of value. The result of their ideas has so influenced the economic life of the country, and in the last century – the world, that they place them in the very fabric of progress. The situation

in Europe is very different. Probably, the most recognizable name of a large-scale entrepreneur remains to be Sir R. Branson. In other cases, however, business leaders who have created truly game-changing enterprises are hardly recognizable, such as the Inditex and IKEA founders – A. Ortega and I. Kamprad, as well as the team behind SAP and Decathlon, established in the 1970s.

Many voices criticize the EC's policies on funding R&D through its funds, and the results either do not come to daylight or are poorly marketed. As for HEIs as an obvious key link in the chain of stimulating innovation and creativity, only recently and with some pressure, through the European Universities Initiative (2017), the EC set tasks for international networks purposefully to work on student entrepreneurship and the imposition of a culture of innovation (Mundell, 2022). As expected, universities are the places where ideas are born and grow in the initial period (Figure 2), but also where talents in leadership, business modelling, technology and finance can emerge. It is very important that they are real laboratories that allow experiments, clash of concepts and multidisciplinary research.

Figure 2. Structure and Elements of Start-up Ecosystem



Source: Start-up Commons, n.d.

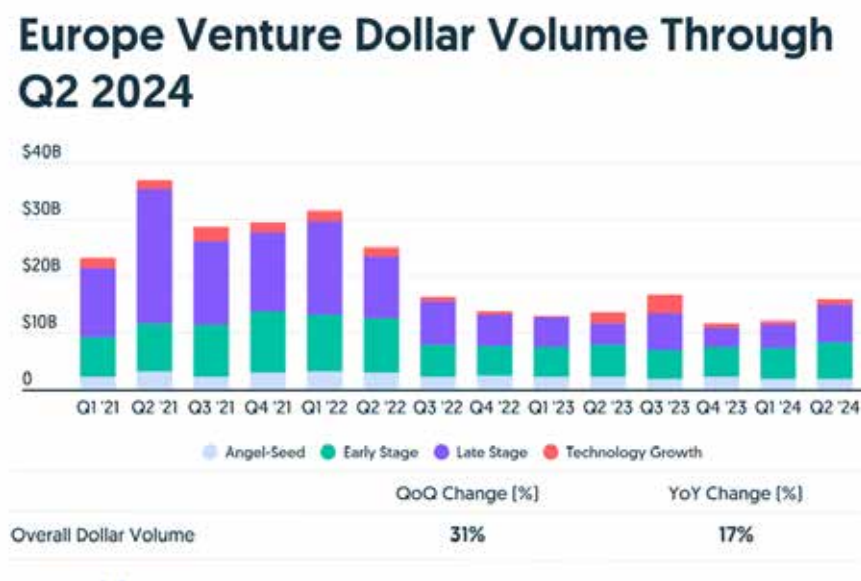
3. Methodology / Methodological Approaches

The report is based on working with secondary sources of information that have the most up-to-date on the subject matter, including the EC, start-up consulting agencies and organizations, involved in the ranking of HEIs from around the world. Since the issue requires a comparative analysis, the author has used works and specialized materials, enabling comparisons to be made and reasoned conclusions and recommendations to be made about the possible direction of development of the entrepreneurial environment, culture and stakeholder relations. To accomplish this task, diagrams illustrating the available data have also been prepared. More specifically, we are talking about comparing the start-up environments shaped by the strongest economies of the EU, on the one hand, and the US, on the other, but the global framework has been preserved to make the study more informative.

4. Research Results

When we look at the environment in which the above Draghi report appears, there is actually some good news – in the second quarter of the year, Europe (incl. the UK) increased investments in start-ups by 17% over a year (Teare, 2024). The biggest beneficiary is the AI sector (\$3.3 bill.), followed by financial services (\$3 bill.) and sustainability (\$2.5 bill.), where 100 mill. were invested in renewable energy sources. Moreover, for the first time in a decade, Europe surpassed Asia, but still, it has not been Europe's best (Figure 3).

Figure 3. Recent Funding Structure in the EU



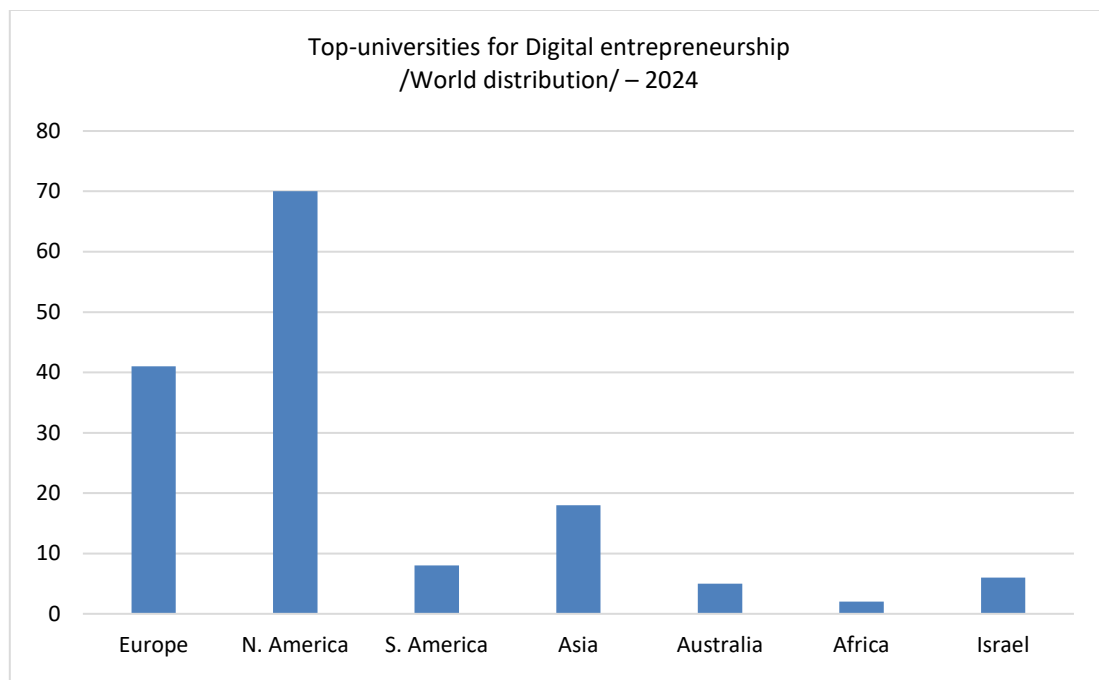
Source: Teare, 2024.

Regarding universities that provide risk funds to start-ups, Europe seems to pay more attention to them compared to the US, but the number of operational start-ups is lower (Heles, 2024). Precisely, 40% out of 150 institutions, that are part of the WUR, have access to a dedicated venture fund. In the US, this percentage is 34%, but, in 2021, there were established 32% more new businesses than in Europe. Unlike its North American competitor, Europe has a much more clearly defined multi-university funding system.

As it is assumed, above all, universities are places for intensive research and expert training for new business enterprises. In order to check what are the conditions for offering high quality education in the area of digital entrepreneurship, we used the data from a recently conducted study (Times Higher Education, 2024). The comparison indicates (Figure 4), firstly, that North America offers such programs in 70 of the total 150 HIEs in the ranking and, secondly, Europe, although in the second position, has 40. The remaining regions, even with a larger and much younger population, are represented by a significantly smaller number of such universities.

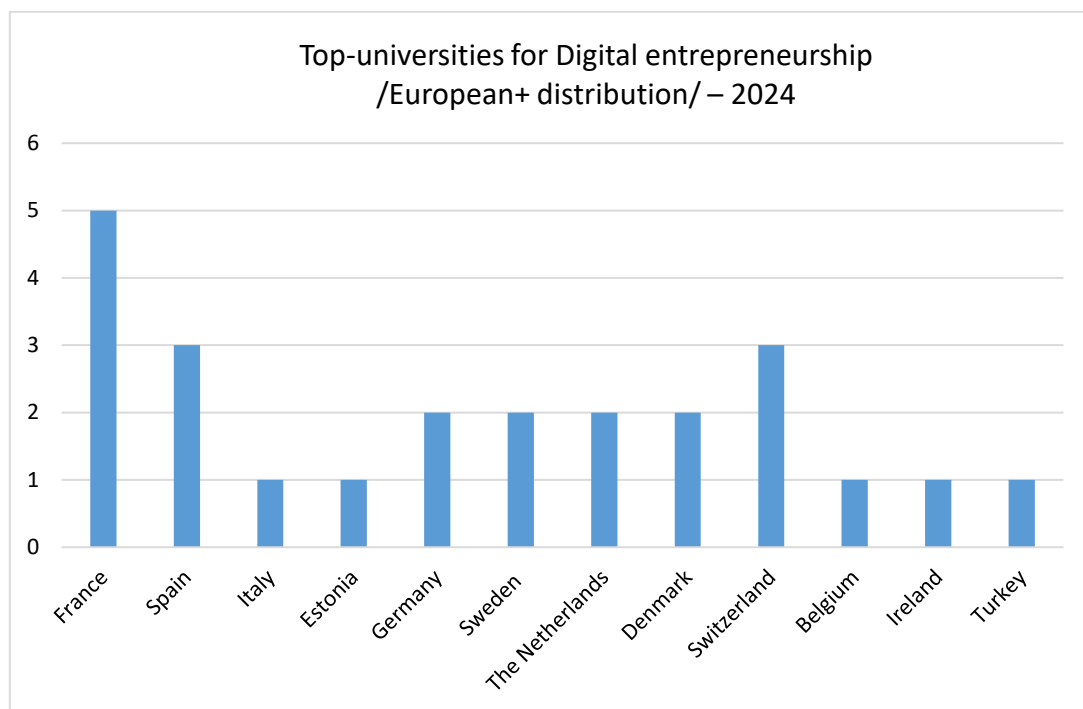
If we look at the distribution in Europe alone and with the UK removed from the list, France, followed by Spain and Switzerland are the most overt leaders in DE education (Figure 5). Apart from these shares, the Scandinavian Peninsula is strongly represented, but we should bear in mind that the UK alone this speciality in 16 universities, which is a significant concentration for a country.

Figure 4. Ranking of Top-universities worldwide offering DE curricula



Source: the author based on Times Higher Education, 2024.

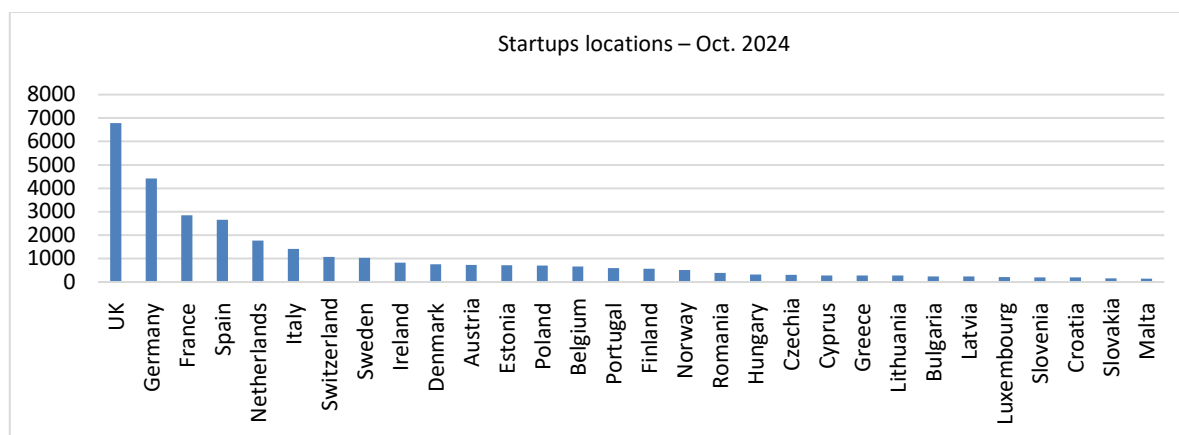
Figure 5. Ranking of Top-universities in Europe offering DE curricula (UK excl.)



Source: the author based on Times Higher Education, 2024.

Considering the above, it is no surprise that the UK ranks (Figure 6) very high in the number of emerging start-ups, according to data accessible on the online platform for entrepreneurs EU-Startup (2024). Similar to the information available in the other sources, Western and Northern Europe are significantly overrepresented compared to Central and Eastern regions, which inevitably raises a number of questions about how to strengthen the start-up culture and ecosystems there.

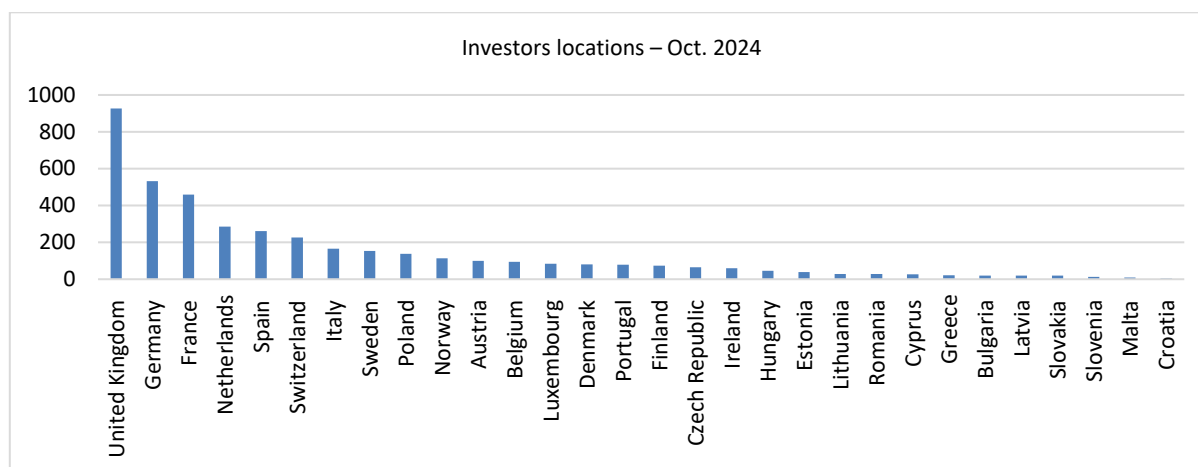
Figure 6. List of locations of currently developing start-ups in Europe by countries



Source: the author based on EU-Startups, 2024a.

In the following chart (Figure 7), the list of the investors' locations is slightly different. Aside from Spain and the Netherlands swapping fourth place, and Italy and Switzerland fifth position, it is perhaps more interesting just how far behind Ireland is listed on this metric. The two lists correspond and in the future, if the EC wants to not only rely on its leading economies to be drivers of new business and value, it should pay attention to the obvious imbalance in capabilities.

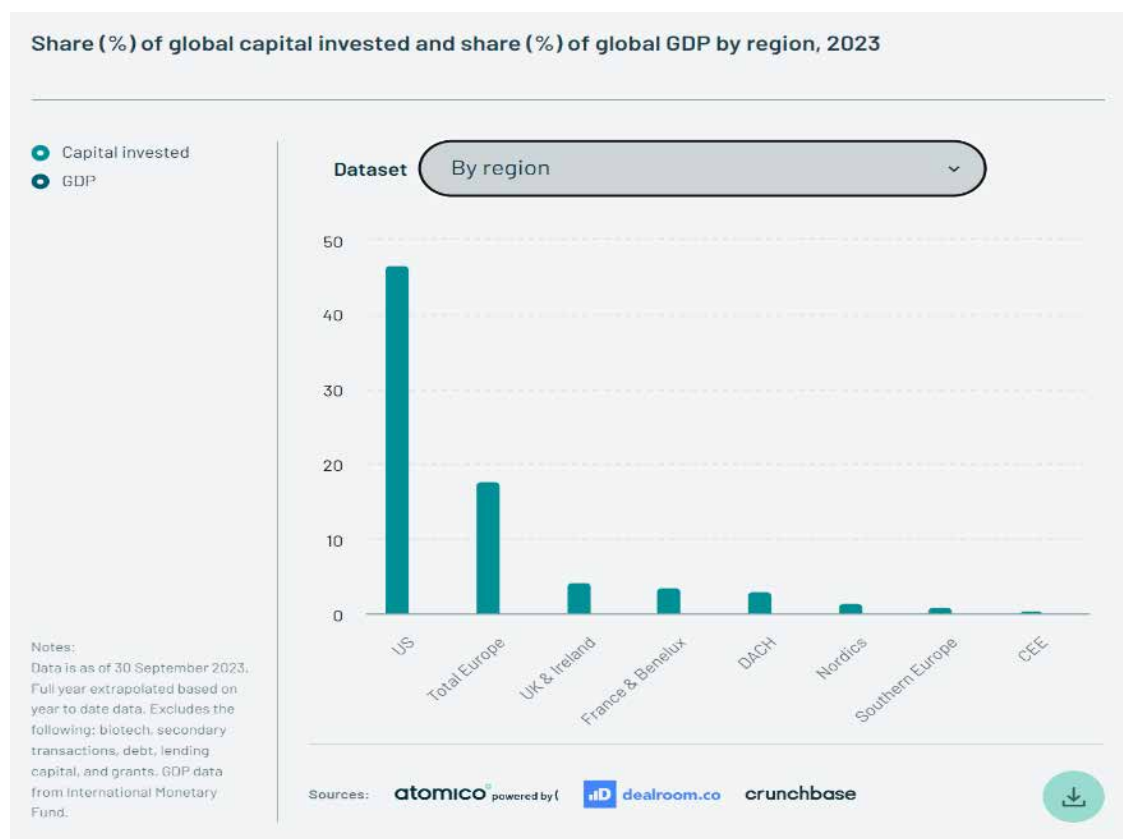
Figure 7. List of locations of active, potential start-up investors in Europe by countries



Source: the author based on EU-Startups, 2024b.

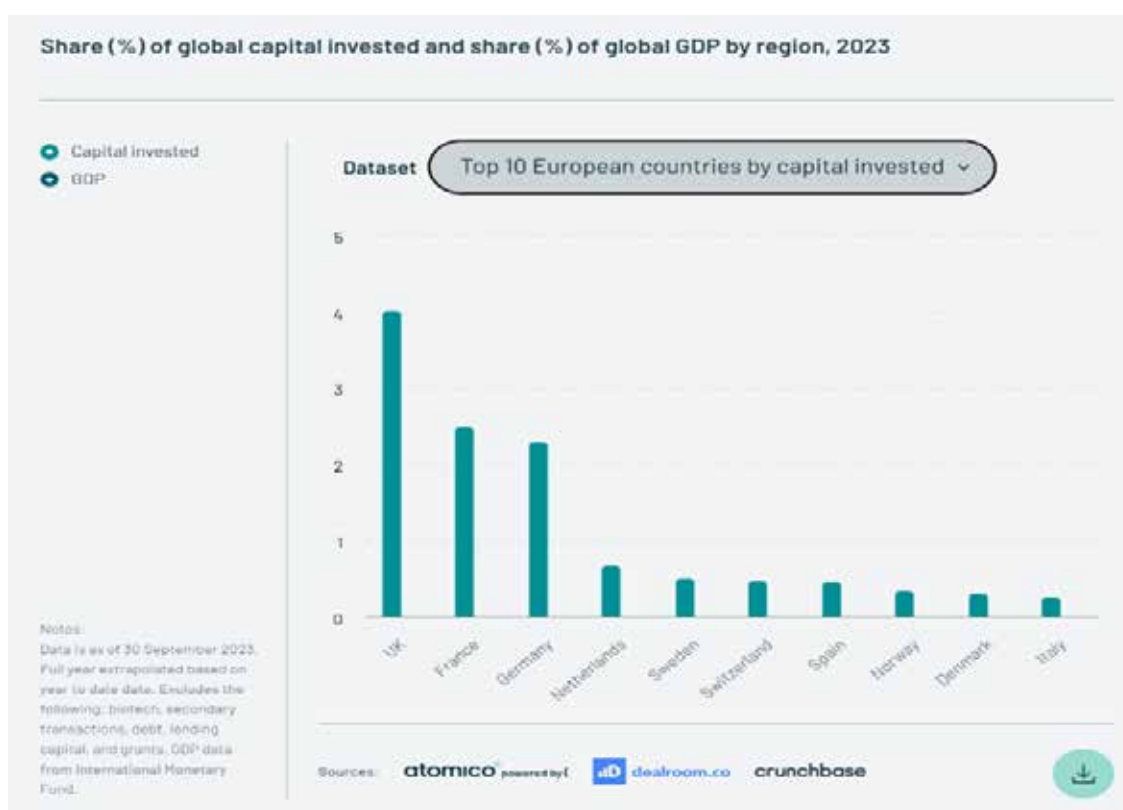
In the same vein, the last two (Figure 8 and Figure 9) charts from the survey show both a comparison between the US and Europe, and within Europe itself in terms of venture capital invested (as for 2023). The situation is not different from the one already presented by the region. „Total Europe” put 39% of the amount of investment in the US, while the UK & Ireland lead only slightly ahead of France & Benelux combined.

Figure 8. List of locations where the risk capital has been invested the most, by regions



Source: State of European Tech, 2024.

Figure 9. List of locations where the risk capital has been invested the most, by countries



Source: State of European Tech, 2024.

The ten most active economies in investing within Europe are dominated by the UK, with France and Germany far ahead of the other seven (Figure 9). The local politics, economic environment and the state of the latter require a separate study to see what is preventing more investment from taking place there.

5. Conclusions

The research made clear that the imbalance of forces in training in HEIs in the field of entrepreneurship, both in regions and in Europe, is quite similar to the unequal distribution of the start-up establishment. Since in the media space „European economy” means „EU economy”, we are able to see, firstly, that the UK is doing much better on its own in creating new businesses, and, secondly, that several of the more powerful countries in the Union itself are disproportionately more successful than many other member states. The UK is also a country where education, both in the number of programs offered and in quality is higher.

At first, the great advantage of the EU over the US, that it can ensure large-scale and regular funding for start-ups, turns into an obstacle for entrepreneurship. The regulations and specific requirements accompanying these projects limit the way of thinking. For instance, as regards the „Green Deal” and all the other UN goals, the goal of funding currently lies mainly in the implementation of ideas for social enterprises and circular economy. There is also no place for technological ones and they are by definition thought of as a priority of business organizations. HEIs can not only create knowledge and give more depth in the understanding of problems, but also quite deliberately prepare entrepreneurs with more relevant skills, i.e. to be more flexible and confident in a highly complex environment, and to apply a data-driven, resource-efficient and problem-solving approach. It can be curricula covering intensive courses in marketing, finance, design thinking, business analysis, project management, organization management, and psychology. The last described task should not be difficult, as long as many years of practice and well-structured knowledge put the framework needed to educate entrepreneurs properly (Blank, Dorf, 2012; Blank, 2020).

In this context, the data to date, trends and good practices in the researched area give priority to the following guidelines for the development and improvement of the competitiveness of the EU economy:

- encouraging risk;
- encouraging the building of more clusters as well as more knowledge transfer channels between start-ups, regions and HEIs;
- diversifying the circle of geographical centres where active entrepreneurship can be developed;
- expanding the range of topics/directions on which to focus entrepreneurial thinking, research and organization (e.g. environment, health, education, food, transport, etc.);
- strengthening the traceability of results (impact);
- providing visibility to successful businesses and the individuals behind them.

However, the limits of the conducted research do not allow a deeper understanding and analysis of some existing internal interrelationships, therefore there remain many and important questions to which an answer should be sought in the nearest possible future.

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BULGARIA LAGS BEHIND ARTIFICIAL INTELLIGENCE INTEGRATION WITHIN THE EU DUE TO INSUFFICIENT INVESTMENT EFFORT

Abstract: Artificial intelligence is an important economic driver that is expected to leave a larger future footprint on life's many social aspects. Bulgaria has pledged to develop an Artificial Intelligence industry by 2030 drawing on a national strategy adopted in 2020 and a European Union-wide Artificial Intelligence growth plan. This publication uses a simple comparative method to match up Bulgaria's Artificial Intelligence investment data with data from a select set of other European Union member economies. The analysis finds insufficient national investment progress as Bulgaria is going forward with implementing the European Union's ambitious Artificial Intelligence adoption goals by 2030. The shortcoming investment perspective is likely to impact Bulgaria's long-term Artificial Intelligence outcomes compared with other European Union peers. In searching for a more effective solution, Bulgaria needs to attain a better synergy between public investment ambitions and the capacity of the private sector to innovate and create.

Key words: european integration; artificial intelligence; investment; Bulgaria

JEL: F15; O14

1. Introduction

Comparative institutional theory takes a strategic look at comparing institutional and economic performance across two or more national economies. Domestic institutions, on the other hand, can strengthen the capacity for strategic action when faced with new or unexpected challenges (Hall, Soskice, 2001). The implementation of such strategic action typically goes through coordination between governments and the private sector. While strategies are drawn up in the interest of maximum constituents, EU member states sometimes do not demonstrate enough effort to fully implement strategies. EU's established institutional workings have created a mechanism through which national governments often take a complementary role in strategic action driven by EU institutions.

Artificial intelligence (AI)² has emerged as a distinctive growth driver with a strong transformational force over national economic development and national institutions. Most recently, the EU has advanced efforts to integrate its member economies into a common digital strategy for AI development. Outlined in its White Paper of 2020 (European Commission, 2020), the European Commission (EC) has drawn up a strategy focusing on a balanced regulatory and investment framework aimed at encouraging innovative AI development, deployment and adoption. The 'White Paper' that has followed member consultations defines EU-level AI funding as an investment pool bringing in „... over €20 billion of total investment in the EU per year in AI over the next decade.” (p. 5) In order to stimulate private and public investment, the EU makes available various funding sources, including the EU's Digital Europe Programme, Horizon Europe Programme, and the European Structural and Investment Funds. („White Paper on Artificial Intelligence: A European Approach to Excellence and Trust”). Furthermore, in April 2021, the EC presented a so-called AI package which included a „Review

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² The EC definition for 'AI' is “AI is used for systems that exhibit intelligent behavior by analyzing their environment and – with some degree of independence – take action to achieve specific goals. (Communication of the Commission on Artificial Intelligence for Europe (COM (2018).

of the Coordinated Plan on Artificial Intelligence”, a peer process with all member states aiming at accelerating AI investment through the implementation of national AI strategies.

Bulgaria’s Council of Ministers in December 2020 adopted the original version of the national strategic document called *Concept for the Development of AI in Bulgaria until 2030* („the Concept” hereafter). This document is based upon a broader national blueprint entitled „Digital Transformation of Bulgaria (2020-2030)” from July 2020 (and an ensuing update in early 2024) which supports the digital transformation of enterprises, including the development and introduction of technologies for Industry 4.0. For its part, the Concept includes national measures for AI development and advanced AI diffusion across several strategic sectors: health, agriculture, environment and public services, among others. To enable both public and private AI investments, the document calls for the use of facilitated financial instruments and for participation in the European research and innovation process („AI Watch – European Landscape on the Use of Artificial Intelligence by the Public Sector”). It lists the main funding sources as: „the state budget, the Structural Funds of the European Union through the relevant programs and the EU other programs such as „Horizon 2020” and „Digital Europe”, as well as the national Recovery and Resilience Plan (RRP) and other international programs.” (ibid, p. 62).

2. Statement of the Problem

The EU has placed Bulgaria bottom of the EU in the practical adoption of AI-driven tools by Bulgarian small- and medium-sized companies.

3. Methodology Used

This survey analysis will be based on comparing data from OECD and EC sources for a selection of EU economies. The publication will argue that despite national AI preparedness comparable to other Eastern European peers, Bulgarian companies appear bottom of AI-led digitalization in the EU. The answer will be argued to be in the relatively less ambitious public investment goals and implementation progress.

4. Survey Results

Bulgaria has fared above global and regional averages for strategic action on AI. The annual government AI readiness index, last published in 2023 by Oxford Insights³ for 193 governments worldwide, shows Bulgaria scored 58.64 points on average and ranked 51st in global context and 10th in Eastern Europe (consisting of 20 compared economies). Of the three constituting elements of the index⁴, Bulgaria scores highest on data and infrastructure (71.73), followed by government action (66.04), and lowest on technology (38.17). Eastern European countries averaged a score of 54.67 points, with Estonia leading with 70.86 points. Table 1 below shows data on Bulgaria’s standing in national preparedness for AI adoption relative to the selection of several CEE peers. While Oxford Insight does not publish EU-specific data, the author pulled

³ The IMF has published its annual index that similarly shows Bulgaria as grouped around other EU regional peers in AI preparedness (AI Preparedness Index 2023). In that index Bulgaria receives 0.58 (on the 1.0 maximum scale) against EU-27 average of 0.66.

⁴ The index overall includes 39 indicators across 10 dimensions, which make up 3 pillars: Government, Technology Sector, and Data & Infrastructure.

out individual EU member indicators to demonstrate how Bulgaria has overtaken Greece (ranked 52nd), Romania (64th) and Croatia (70th).

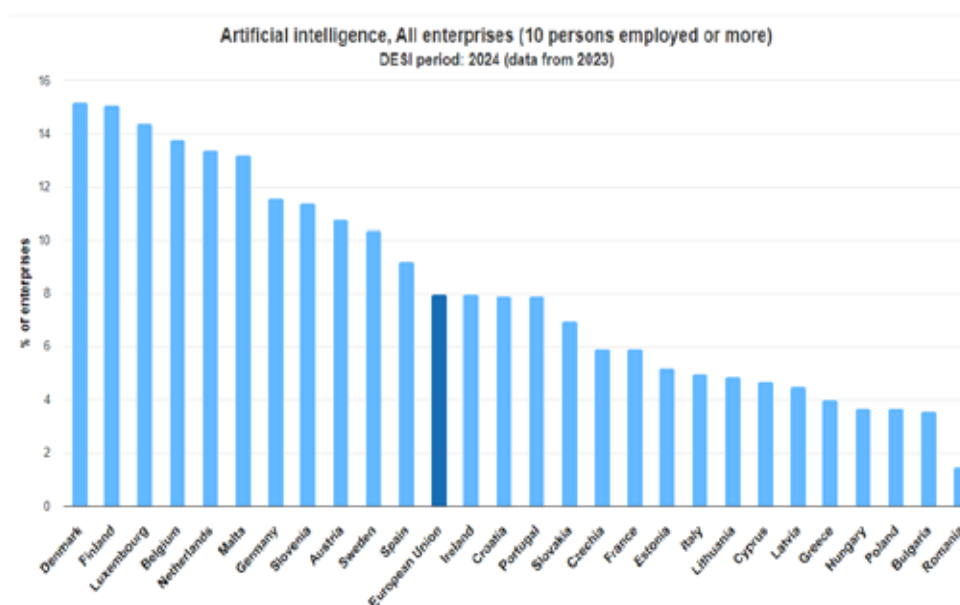
Table 1. Government AI Readiness Index⁵

Country	Score			
	Government	Technology	Data and Infrastructure	Total
Italy	76.61	50.98	75.29	67.63
Spain	72.86	50.96	78.60	67.47
Croatia	42.25	39.35	66.42	49.34
Hungary	69.96	42.20	69.82	60.66
Romania	51.42	39.23	66.30	52.32
Estonia	80.54	52.52	79.54	70.86
Bulgaria	66.04	38.17	71.73	58.64

Source: Oxford Insights, [AI Readiness Index – Oxford Insights](#).

A recent EU-wide study showed Bulgaria has devoted only 0.62% of the digitization funds to AI-related projects (Papazoglu et al. 2023). Another survey suggested Bulgaria (3.6%) only led Romania (1.5%) in the use of AI technologies by local companies (10 employees or more) in the EU (Figure 1 below).⁶ Bulgaria's relative underperformance is demonstrated by the 2024 EU Report on the State of the Digital Decade 2024 which explicitly says that „most targets that Bulgaria has set for 2030 are below the EU's target levels of ambition” and recommends the country „should promote favourable conditions for the successful digitalisation of its SMEs to foster technology transfer and accelerate the uptake of technologies, in particular Artificial Intelligence (AI)” (Digital Decade Report on the State of the Digital Decade 2024: Annex Bulgaria”).

Figure 1. Artificial Intelligence, all enterprises



Source: Digital Economy and Society Index (DESI) 2024.

⁵ For comparison, throughout this publication the author uses the same group of EU countries because they are representative for national AI planned and adoption policies.

⁶ According to Digital Economy and Society Index (DESI) report in 2024, 15% of enterprises in Denmark and Finland (15.1%) employed AI in their business. The uptake in AI technologies was low in most other EU Member States, with shares falling below 10%. Outside Bulgaria and Romania, the lowest figures were recorded in Hungary and Poland (both 3.7%).

Nonetheless, Bulgaria showed some improvement in AI adoption, scoring a 3.6 per cent rate from 3.3% from the previous report (Table 2). Nonetheless, the EC noted Bulgaria's complete failure to meet all AI-related national goals until 2030 (Report on the State of Digital Decade 2024). While it lags EU's current AI adoption rate of 8%, Bulgaria also remains significantly behind its nationally targeted 11% plan until 2030 (as opposed to the EU's 2030 goal of 75%). According to the Digital Economy and Society Index (DESI) in 2024, Bulgarian enterprises' adoption of advanced digital technologies – cloud, data analytics, and AI together – has taken up a share of 29.3%, or twice below the EU average of 54.6%, therefore positioning the country last in EU. Bulgaria has targeted 35% of all enterprises (10 employees or more) to be using digitalization technology (cloud computing services, big data and AI together) until 2030.

Table 2. Digital Decade (DD) on Artificial Intelligence

DD KPI ⁷ /Country	DESI Score on Artificial Intelligence (%)		
	DESI 2023	DESI 2024	Progress
EU	-	8.0	2.6
Italy	6.2	5.0	-
Spain	7.7	9.2	9.3
Croatia	8.7	7.9	-4.7
Romania	1.4	1.5	3.5
Hungary	3.0	3.7	11.1
Estonia	2.8	5.2	36.3
Bulgaria	3.3	3.6	4.4

Source: Report on the State of the Digital Decade 2024.

A crucial allocation of AI investments comes through different EU funding sources, more notably the EU's Recovery and Resilience Facility (RRF) instrument. The RRF has made available EUR 4.4 billion for AI development in the EU over the 2021-2026 period (Report on the State of Digital Decade 2024). All EU member states, except for the Netherlands, have pre-planned their funding needs in national Recovery and Resiliency Plans (RRPs). Italy became a leader with EUR 1.9 billion planned for AI-related projects, followed by Spain with EUR 1.2 billion.⁸ According to a survey by Papazoglu et al (2023), Bulgaria's RRF budget for 2021-2027 slightly exceeds EUR 1 billion for what the authors have named as Digital Decade (DD) relevant projects, of which only EUR 6.33 million are aimed specifically at AI development, (with the same amount of money allocated for cloud computing services and big data management each) (Table 3)⁹. That makes Bulgaria's RRF plans twice less ambitious than the national RRP of the Baltic economies and three times smaller than Croatia's financial plan in AI. Bulgaria fares relatively better in planned Cohesion Policy funds on AI. Of the EUR 691 million of nationally planned budget for DD-relevant activities, Bulgaria can receive up to EUR 57.18 million for AI development alone.

Several individual AI science research projects have gained much positive traction in recent months and years. The GATE Institute in Sofia was created with EUR 15 million from Horizon 2020 and the same amount from EU's Interreg (European Regional Development Fund). In 2024, the second Sofia University international science research project, called the Institute for Computer Science, Artificial Intelligence and Technology (INSAIT), announced the launch of the Bulgarian language BgGPT. INSAIT was founded with \$7 million. In 2024 Bulgarian government budgeted EUR 150 million to support INSAIT's research over a three-year period.

⁷ Key Performance Indicators.

⁸ Spain's national RRP specifically allocates funds to strengthen the development of AI, with the goal of positioning the country as a leader. Italy's AI Strategic Program (2022-2024) aims at making the country a global hub for AI research and innovation by boosting skills and attracting talent.

⁹ Data may vary according to last survey done.

INSAIT has recently joined efforts with Google for a \$2 million investment to promote INSAIT’s AI-applied computer science program.

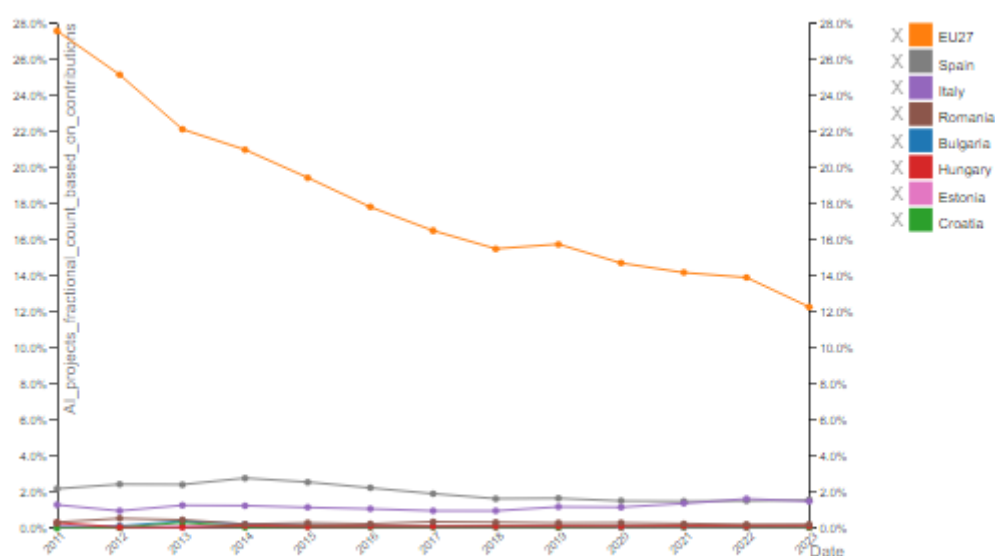
Table 3. Allocation of RRF AI Funds, millions of EUR

EU	4.376
Italy	1.895
Spain	1.204
Romania	119.84
Croatia	23.67
Hungary	13.55
Estonia	8.47
Bulgaria	6.33

Source: Joint Research Center, European Commission, last updated September 2023.

Algorithmic software stands at the core of developing and diffusing AI-powered technologies. The following comparative Figure 1 below shows the relatively small number of AI-related software projects (recorded on the global open-source software development platform GitHub) as a share of their contributions to and impact on public AI investment projects. Bulgaria, Estonia and Croatia are shown at the bottom of the graph in the EU.

Figure 2. AI software development Contributions to public AI projects and project impact¹⁰



Source: OECD.AI (2024), accessed on 10/10/2024, www.oecd.ai.

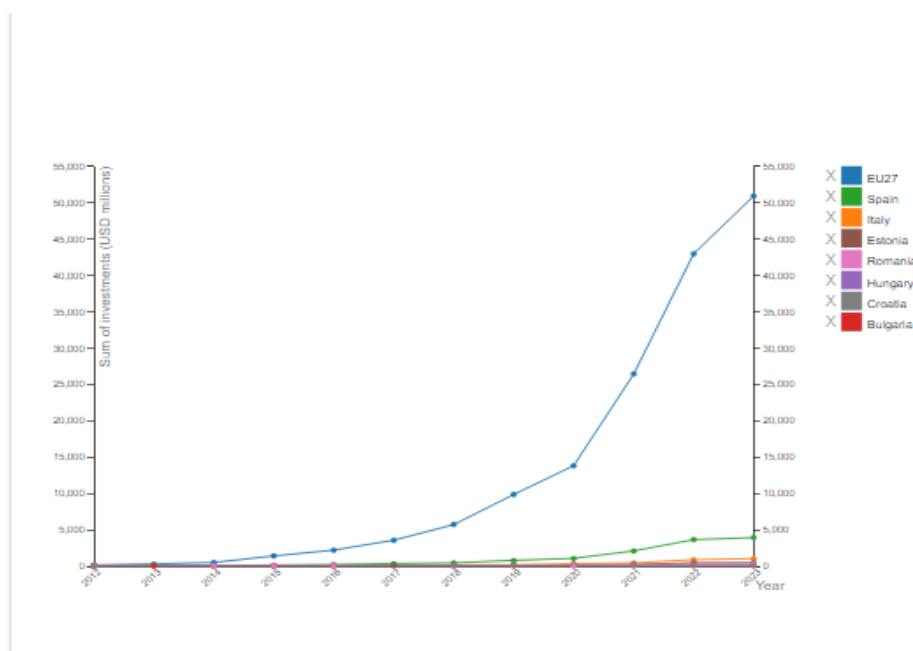
Bulgaria’s national RRP includes a pool of financial equity instruments for innovation to fund the support for small and medium businesses (SME), start-up and early-growth companies, in sectors such as ICT, industrial automatisisation and AI (Lilyanova, 2024). This ‘investment pool’ of EUR 75 million is disbursed through the European Investment Fund (EIF) to local venture capital (VC) funds as well as to private equity funds in supporting at least 30 local beneficiaries (ANNEX to the Proposal for a COUNCIL IMPLEMENTING DECISION amending Implementing

¹⁰ The inclusion of EU-27 stats on the graphs shows the huge gap especially between EU-27 and Eastern European peer economies.

Decision (EU) (ST 8091/22 INIT; ST 8091/22 ADD 1) of 4 May 2022 on the approval of the assessment of the recovery and resilience plan for Bulgaria).

Most recently, Bulgarian VC funds have focused increasingly on supporting high-tech and software startups, through different stages of their development – from seed/incubator to growth and upscale levels. According to the OECD, two-thirds of the investment projects, amounting to over USD 30 million, were implemented in the 2021-2023 period. Bulgaria is far from an inspiring performance vis-à-vis the EU-27 average and a way to go to make up with EU's leaders in VC (Figure 2).

Figure 2. VC investments in AI (select EU members), in millions of USD



Source: OECD.AI (2024), accessed on 10/10/2024, www.oecd.ai.

VC funding can sustain a key role in the development of the local AI startup ecosystem, with funding primarily raised from EU public sources, such as the European Investment Fund and the operational funds. The government-controlled „Fund Manager of Financial Instruments in Bulgaria” (so called „Fund of Funds”) is looking for private money to match up a total of EUR 100 million for business startup development.

5. Conclusions

By way of data comparison with select other EU economies, this publication has argued Bulgaria's relatively good regional standing in AI strategic preparedness through a worldwide published index. However, actual data did not support similarly satisfactory outcomes relative to some EU peers. The reason can be sought in the small share of planned and actual investments in AI projects so far. Bulgaria needs to double its efforts to integrate AI in the domestic business on a much larger scale than now. The government should seek to create better incentives for private sector participation in the process, provided a few good examples already of applied science AI projects.

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TRUST IN GOVERNMENTS AS A FACTOR IN THE DEVELOPMENT OF BLOCKCHAIN TECHNOLOGIES IN THE EUROPEAN UNION

Abstract: Blockchain is a useful tool for rethinking trust in governments within the context of the European Union's economy. Higher trust in national governments is leading to an increase in certain drivers of economic growth like innovation and digital intensity in companies, including the adoption of blockchain. Conversely, a lower level of trust in governments is associated with a larger proportion of the population owning blockchain-based cryptocurrencies, which challenges existing monetary and financial systems. This article, based on my research, aims to illustrate the relationship between trust in national governments – averaged from 2016 to 2022 – and the intensity of high technology usage, such as blockchain, in companies across the European Union. Furthermore, it explores the inverse correlation between trust in governments and the percentage of the population owning cryptocurrencies in EU member states.

Keywords: blockchain; trust in governments; digital intensity; cryptocurrencies

JEL: O; O14; O33; O52

1. Introduction

Trust in government is critical to the public's behavioural responses (OECD, 2022), undoubtedly related to the implementation and use of groundbreaking technologies such as blockchain. Referred to as the „trust machine” (The Economist, 2015), blockchain is one of the most significant technologies impacting various sectors of the economy as well as the public sphere in the European Union. The European Commission defines blockchain as „a technology that allows people and organisations who may not know or trust each other to collectively agree on and permanently record information without a third-party authority” (European Commission, 2022).

The basis for the development of blockchain is the construction of a network of participants where everyone has an identical copy of the ledger block of data, without which the technology does not make sense. To use the possibilities of this technology, it is necessary to guarantee trust between the participants in its network. This happens based on protocols that are executed by consensus between the parties.

The close relationship between public trust and the innovation index has been observed already (Harvard Business Review, 2022), as trust is the basis for developing and implementing digital technologies. In my research, I found such a correlation between the index of trust in national governments and digital intensity in companies, which includes the adoption of high technologies and blockchain.

The relationship between trust in governments and crypto ownership by the population is reversed. Indeed, the lack of trust in institutions caused by the financial crisis in 2008 was one of the main reasons for the invention of Bitcoin – a cryptocurrency backed by blockchain technology. Further, there are three mediators for the consumer attitudes and buying intentions for crypto – distrust of politicians, positivity, and fear of missing out (Martin et al., 2021).

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2. Background and Current State

Global events significantly influence public interest in blockchain as well as public trust. The most dynamic period was from 2016 to 2022, with a significant increase in interest in blockchain in 2021, coinciding with a year of heightened cryptocurrency adoption and market enthusiasm (Charalambous et al., 2024).

Blockchain enables the most secure and traceable data transactions – qualities that are essential for the implementation of the European digital identity, the creation of digital currencies and digital wallets. This technology has the potential to foster a citizen-centric, sustainable, transparent, and inclusive European digital society. Blockchain development is a crucial component of Europe's vision for technological sovereignty.

When considering blockchain development in the EU it is important to note that the blockchain ecosystem is multi-layered. It is a new data storage technology, but also a new variant of a programmable platform that enables entirely new applications. Generally, there are two approaches to adopting blockchain technologies in various sectors. The first is aimed at market-oriented technology solutions, and the second is related to the use of technology to support existing centralized models. Businesses in the EU use both approaches and the number of blockchain companies is rising.

3. Methodology and Methodological Approaches

Given that EU member states are currently at varying levels of maturity regarding regulatory and ecosystem development on the path to harmonizing their regulatory and policy frameworks, this research is focused on public trust as a critical factor in the adoption and integration of blockchain technology into the economy.

To examine these dependencies in greater detail, this study utilized the following data for the EU countries:

Trust in Government and Digital Intensity in companies

The analysis investigates the correlation between public trust in governments, averaged over the period from 2016 to 2022, based on data from the annual Eurobarometer survey, and the intensity of the use of high technology in companies within the European Union, including blockchain technologies.

The data is illustrated in Fig. 1, where the x-axis represents the average trust in the government from 2016 to 2022 in each country. This information is based on data published in the Eurobarometer from editions Standard Eurobarometer 85, 87, 89, 91, 93, 95, and 97. The vertical axis of the graph displays the percentage of enterprises with 10 or more employees that have a high or very high digital intensity index for 2022. The data are also by country and are published on Eurostat's institutional website in the section Digital Intensity by size class of enterprise.

The correlation coefficient between the values of the two indicators in the study is 0.69, which is a sign of significant dependence between them.

Taking into account that the digital intensity index is influenced by factors such as innovation, investment intensity, knowledge, and digital skills, the hypothesis regarding the correlation between trust in governments and the adoption of blockchain technology was examined by using the number of blockchain companies in EU countries. As a first step, the number of

companies per 1 million population in all EU countries was calculated. This metric reduces the likelihood that a country with a larger population would appear to have more blockchain companies simply due to its size. The data on the number of blockchain companies is obtained from the Blockchain Ecosystem Developments 3.0. (Charalambous et al., 2024). The values of the average trust in government for the period 2016-2022, are based on the data published in Eurobarometer.

The results show a weak correlation of 0.4. However, if the scope is further defined based on geographic and economic factors, the island states of Cyprus, Malta, and Ireland, as well as Luxembourg – due to its high economic development – will be excluded from the analysis. Greece is also excluded, as it did not transition from a planned economy to a market economy, which is characteristic of the other Eastern European countries.

In summary, the 2 groups of EU countries that meet these criteria are as follows: 1) The Western European area extended with Scandinavia: Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Portugal, Finland, Sweden.

2) The Eastern European and Central European countries: the Czech Republic, Bulgaria, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia, Slovakia.

Trust in government and the share of the population that owns cryptocurrency

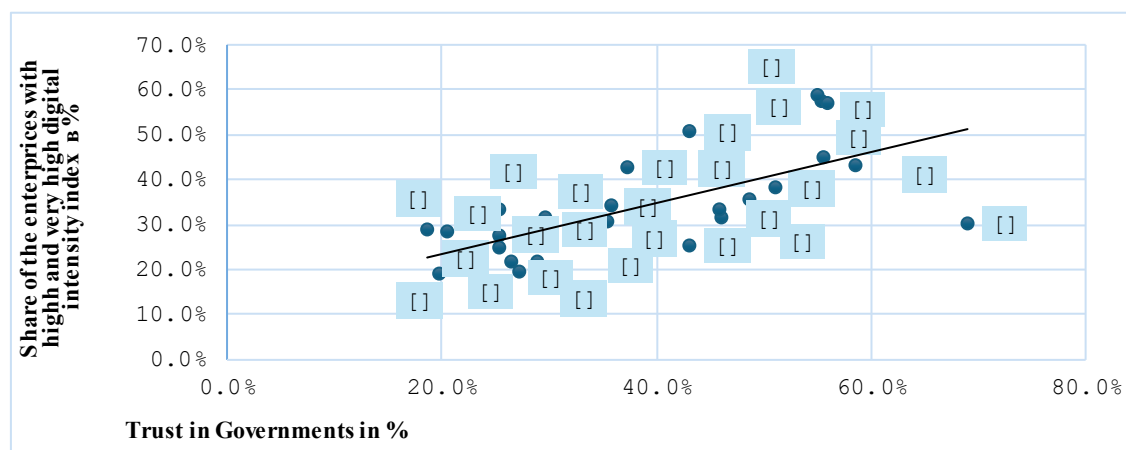
The present study also focuses on the inverse correlation between indicators of trust in government and the proportion of the population that owns cryptocurrency, based on data published in Blockchain Ecosystem Developments 3.0 (Charalambous et al., 2024). Individuals tend to make decisions regarding the purchase or sale of their cryptocurrency holdings much more rapidly than companies; therefore, it is more logical to use trust in government data from a specific year. In this case, the year 2022 was selected. The correlation coefficient between the two indicators studied – trust in government and the share of the population owning cryptocurrency – was calculated using data from all EU countries and is approximately -0.4 for the entire EU. This finding suggests that in countries with lower trust in government, a larger share of the population seeks alternatives and owns cryptocurrency, in contrast to countries with higher trust in government.

This reverse correlation is particularly strong in a selected group of 11 Western European countries extended with Scandinavia.

4. Results

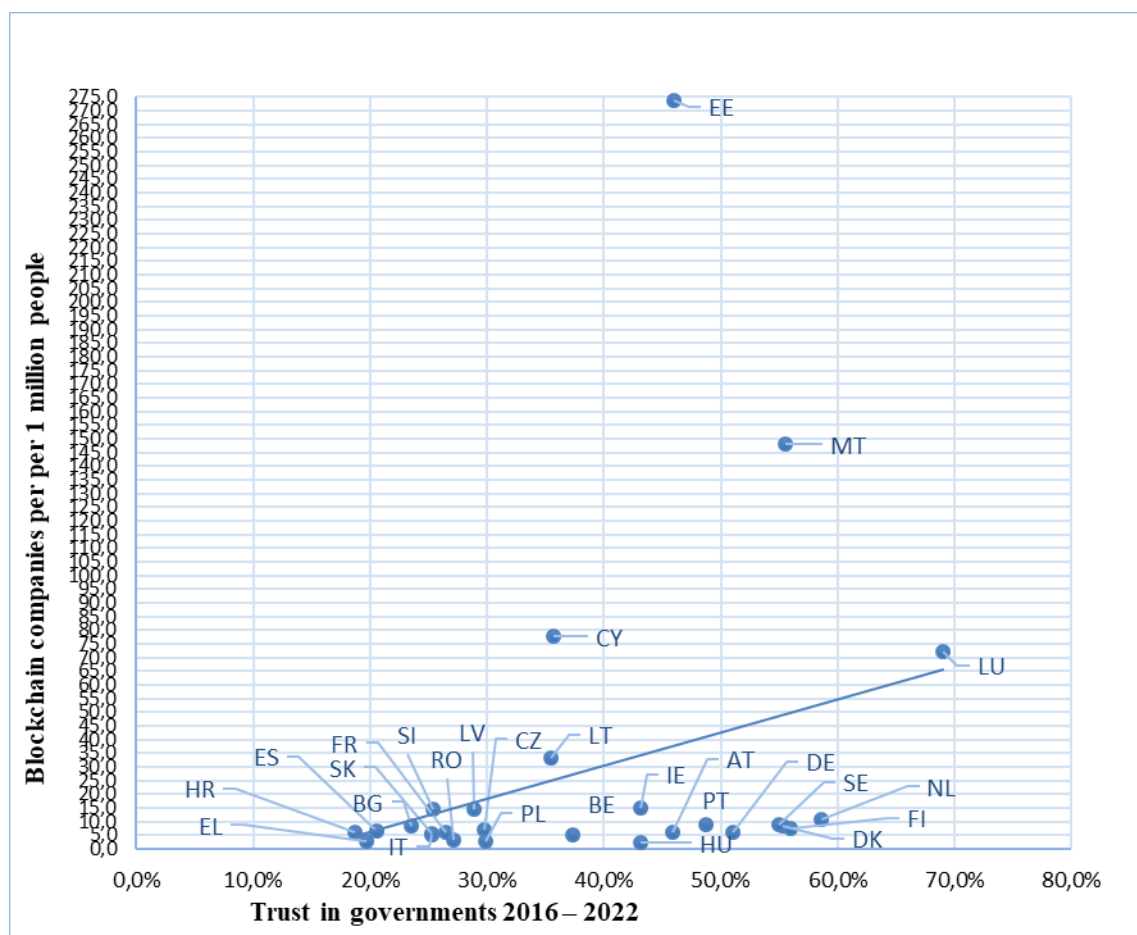
In the European Union, where there is a higher level of trust in government and financial institutions, the adoption of blockchain technology is fuelled by its potential to enhance transparency and efficiency across various sectors, including the public sector. Among the different factors influencing the adoption of advanced technologies, a sustained level of trust in government is particularly significant.

Figure 1. Correlation between trust in government and the share of enterprises with 10 or more employees* with high or very high digital intensity index for 2022



Source: Eurobarometer, Eurostat.

Figure 2. Correlation between trust in government and the number of blockchain companies per 1 million people in all EU countries

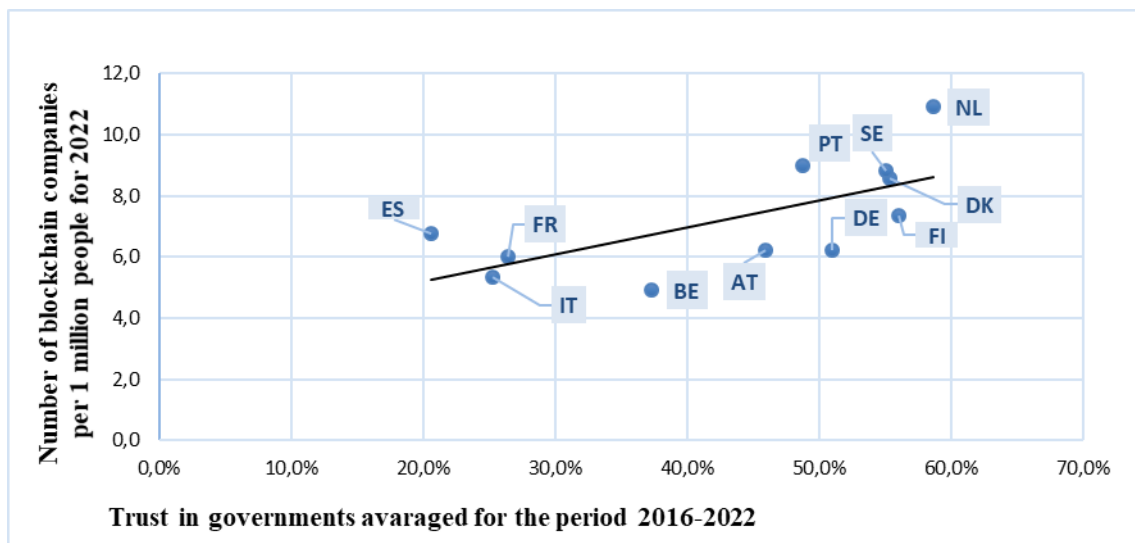


Source: Eurobarometer, EU Blockchain Observatory and Forum.

More blockchain companies are established in EU countries where governmental trust is higher. This relationship is particularly pronounced in continental Western European countries extended with Scandinavian countries; however, the correlation is less evident in

Eastern European countries, considering certain economic realities, especially the dependence on additional foreign investments. Focusing on the selected 11 countries: Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Portugal, Finland, and Sweden, there is a strong correlation indicating that sustained high public trust is a prerequisite for the emergence or entry of a larger number of blockchain companies. The correlation coefficient between these two indicators is approximately 0.7. The Netherlands, which had the highest average trust from 2016 to 2022, also boasts the largest number of blockchain companies per 1 million people among the selected 11 countries, with nearly 11 blockchain companies for every 1 million people). From the leading 6 countries with the highest levels of trust in government – Denmark, Germany, the Netherlands, Sweden, Finland, and Portugal – five also rank among the leaders in the number of blockchain companies per one million people.

Figure 3. Correlation between trust in government and the number of blockchain companies per 1 million people – selected 11 countries



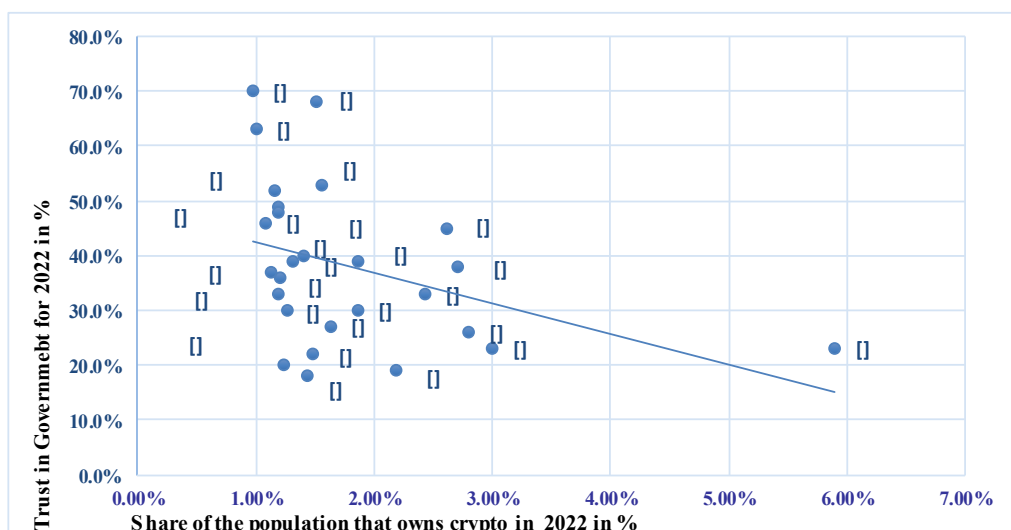
Source: Eurobarometer, EU Blockchain Observatory and Forum

Cryptocurrencies and trust

Cryptocurrencies are digital currencies utilised in electronic payment systems that typically do not require government backing or the involvement of intermediaries, such as banks (Perkins, 2020). Instead, users validate transactions through specific protocols. Since the invention of the first cryptocurrency, Bitcoin, in 2008, the number of cryptocurrencies has increased. At the beginning of 2023, the platform CoinMarketCap reported that there are around 8 thousand different cryptocurrencies. The webpage DL News Crypto Tracker shows some 11,597 crypto entities registered across the EU at the end of 2023. Notably, there has been a significant increase in recent years, coinciding with heightened cryptocurrency adoption and market enthusiasm.

Investment decisions and limited stock market activity are primarily driven by the lack of trust (Balloch et al., 2015). Compared to other investments, cryptocurrency boasts many advantages. Freedom from the entrenched global financial system is a huge perk of cryptocurrency. Because the cryptocurrency ecosystem is founded on the principles of mutual trust and decentralized regulation, it offers a refuge for ordinary individuals who wish to remain unaffected by the actions of their governments.

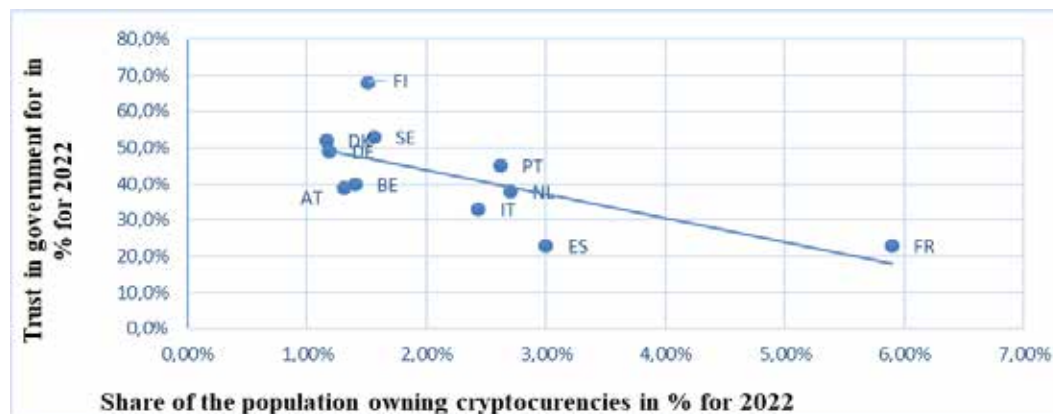
Figure 4. Relationship between trust in government and the share of the population that owns cryptocurrencies



Source: Eurobarometer, EU Blockchain Observatory and Forum.

On a more regional level, the inferred dependence is more pronounced when examining the selected 11 countries from Western Europe and Scandinavia. The following graph illustrates that the correlation coefficient for these selected countries is approximately -0.7.

Figure 5. Relationship between trust in government and the share of the population that owns cryptocurrencies – selected 11 countries



Source: Eurobarometer, EU Blockchain Observatory and Forum.

4. Conclusions

The role of trust in the development of the economy has been considered for several decades, and one of the most famous statements about the relationship between them is that of the economist Kenneth Arrow (1974), for whom the lack of trust represents a clear loss for economic systems that require trust for the success of collective endeavours. The economic value of trust is that it increases the speed and reduces the costs of interactions and processes in society at large (Choi et al., 2023).

Adopting new technologies such as blockchain in sectors with established traditional practices faces many challenges due to different cultural attitudes towards risk and innovation in

individual Member States. My research confirms that trust in governments plays a critical role in the development and adoption of blockchain technology. High public trust in the longer term is critical not only for innovation and adoption of advanced technologies like blockchain but also for the countries to cope with challenges such as digital transformation and changing labour markets.

Looking at trust in governments, there are huge differences between the countries in the EU where around 60% of the population trusts their government in Finland, Norway, Denmark and Luxembourg, but this percentage is below 30% in around a quarter of the other countries. Against this background, the efforts of governments, the European Union, and international organizations are to explore the applicability and possibilities of blockchain in an environment where there is sufficient legal and economic certainty, while not eliminating the survival of blockchain. Considering the results of my study, the “trust machine” undoubtedly needs high public trust to be implemented and used more broadly. On the contrary, when it comes to the risk culture of the population, the lower trust in the government contributes to the investment behaviour of owning cryptocurrencies.

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**MACROECONOMIC AND SOCIAL
DIMENSIONS OF THE MEMBERSHIP IN
THE EUROPEAN UNION**

***МАКРОИКОНОМИЧЕСКИ И
СОЦИАЛНИ ИЗМЕРЕНИЯ НА
ЧЛЕНСТВОТО В ЕВРОПЕЙСКИЯ СЪЮЗ***

АДАПТИРАНЕ НА ИКОНОМИКАТА НА БЪЛГАРИЯ СЛЕД ПРИСЪЕДИНЯВАНЕТО КЪМ ЕС: СРАВНИТЕЛЕН АНАЛИЗ С ДРУГИ СТРАНИ ОТ ИЗТОЧНА ЕВРОПА

ADAPTATION OF BULGARIA'S ECONOMY AFTER ACCESSION TO THE EU: A COMPARATIVE ANALYSIS WITH OTHER EASTERN EUROPEAN COUNTRIES

Резюме: Присъединяването на България към Европейския съюз през 2007 г. е ключов момент в икономическото ѝ развитие, което води до значителни промени в макроикономическите показатели на страната. Въпреки постиженията, България продължава да се сблъсква с редица предизвикателства, включително демографския спад, институционалната слабост и ниската производителност. Икономическият растеж на България след присъединяването към ЕС се характеризира с относителна стабилност, но изостава от страни като Полша и Румъния. Страната успява да се възстанови след световната финансова криза от 2008 г., но растежът на БВП остава по-бавен. Основен проблем е ниската производителност на труда, както и зависимостта на икономиката от външни фактори. Демографската криза е едно от най-сериозните предизвикателства за България. Намаляването на населението и емиграцията на квалифицирани кадри водят до спад в работната сила и ограничават икономическия потенциал на страната. За да преодолее тези проблеми, България трябва да предприеме мерки за задържане на млади хора и подобряване на условията за живот и работа. Европейските структурни и кохезионни фондове играят важна роля за модернизацията на инфраструктурата и насърчаването на иновациите, но България среща трудности с ефективното им усвояване. Корупцията и административните пречки остават сериозен проблем, който възпира пълноценното използване на европейските средства. Необходимо е също така да продължат институционалните реформи, да се инвестира в човешки капитал и иновации и да подобри ефективността на администрацията. Само чрез последователни реформи и модернизация страната може да повиши своята конкурентоспособност и да постигне по-високи нива на икономически растеж.

Ключови думи: Икономически растеж; инвестиции; устойчивост

Abstract: Bulgaria's accession to the European Union in 2007 was a key moment in its economic development, leading to significant changes in the country's macroeconomic indicators. Despite the achievements, Bulgaria continues to face several challenges, including demographic decline, institutional weakness, and low productivity. Bulgaria's economic growth after joining the EU has been characterized by relative stability, but it lags behind countries like Poland and Romania. While the country managed to recover after the global financial crisis of 2008, GDP growth remains slower. A major issue is the low labor productivity and the economy's dependence on external factors. The demographic crisis is one of the most serious challenges for Bulgaria. The population decline and emigration of skilled workers lead to a reduction in the workforce and limit the country's economic potential. To overcome these problems, Bulgaria must take steps to retain young people and improve living and working conditions. European Structural and Cohesion Funds play an important role in modernizing infrastructure and promoting innovation, but Bulgaria faces difficulties in effectively utilizing them. Corruption and administrative obstacles remain serious issues, hindering the full use of European funds. It is also necessary to continue institutional reforms, invest in human capital and innovation, and improve administrative efficiency. Only through consistent reforms and modernization can the country increase its competitiveness and achieve higher levels of economic growth.

Keywords: Economic growth; investments; sustainability

JEL: E60; E61; E63

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Увод

Присъединяването на България към бележи един от най-значимите етапи в модерната икономическа история на страната. Този процес не само отвори нови възможности за търговия, инвестиции и структурни реформи, но също така наложи необходимостта от хармонизиране на икономическите и политическите структури с европейските стандарти. През годините след присъединяването икономическото развитие на България претърпя множество промени. Страната се възползва от редица предимства, свързани с достъпа до общия пазар на ЕС и европейските структурни фондове, но също така беше изправена пред значителни вътрешни и външни предизвикателства.

Основната цел на този доклад² е да разгледа развитието на макроикономическите показатели на България в периода след присъединяването към ЕС и да предложи сравнителен анализ с други източноевропейски страни, също членки на ЕС, като Румъния, Полша, Унгария и Чехия.³ Изборът на сравнителен подход между България и останалите страни от Източна Европа е обоснован от сходния икономически контекст, през който преминават тези държави след падането на комунистическите режими в края на 80-те и началото на 90-те години на XX век. Присъединяването към ЕС представлява обща платформа за тези страни, която изисква синхронизиране на политиките и икономиките в съответствие с европейските стандарти, но всяка от тях преминава през уникален процес на трансформация, водещ до различни резултати в икономическото развитие.

Икономически растеж

Присъединяването към ЕС представлява важен икономически катализатор за страните от Източна Европа, включително България. Заедно с достъпа до общия европейски пазар и европейските фондове, икономиките на тези страни започват да отбелязват значителен ръст в периода след 2007 г. Въпреки това, различията в темповете на растеж са очевидни.

Румъния преживява бурен икономически растеж през периода след присъединяването към ЕС. От 2007 до 2008 г. страната отбелязва среден годишен ръст на БВП от около 6-7%. Въпреки сериозния спад по време на световната финансова криза, Румъния бързо се възстановява и през последното десетилетие е една от водещите по растеж икономики в ЕС, с ръст на БВП между 4-6% годишно през 2015-2019 г. (Eurostat, 2024). Основните двигатели на растежа са потреблението, инвестициите и външната търговия.

Полша, най-голямата икономика сред новите страни членки на ЕС от Източна Европа, също се отличава със стабилен икономически растеж. През последните години Полша регистрира впечатляващ растеж на БВП, като икономиката на страната нараства със средно 3-4% годишно след 2007 г. Полша е единствената страна в ЕС, която избегна рецесия по време на световната финансова криза, благодарение на силния вътрешен пазар, относителната изолираност от глобалните финансови пазари и активните държавни интервенции.

² Това изследване е осъществено в рамките на научноизследователския проект „Адаптиране на пазара на труда в условията на членство в еврозоната: социално-икономическа динамика, технологична модернизация, демографски промени и образователно преструктуриране“, финансиран от Националния фонд „Научни изследвания“ по договор № КП-06-H75/12.

³ При изготвянето на анализа са ползвани данни от годишните доклади на МВФ за разглежданите страни. (International Monetary Fund – Article IV Consultations with Respected Countries).

Унгария има по-нестабилна динамика на икономическия растеж в сравнение с България и Полша. През първите години след присъединяването към ЕС, икономиката на Унгария отбелязва бавен растеж, поради високи нива на публичен дълг и ограничена фискална гъвкавост. След кризата от 2008 г. страната прилага строги мерки за намаляване на бюджетния дефицит и публичния дълг, което забавя растежа на БВП, но води до стабилност в дългосрочен план. През последното десетилетие Унгария също започва да отчита по-силно икономическо възстановяване.

Чехия, една от най-развитите икономики в Централна Европа, се отличава с балансиран и стабилен растеж. Въпреки силното негативно влияние на световната финансова криза, икономиката на Чехия се възстановява бързо, като страната бележи среден годишен ръст на БВП от около 2-3% след 2013 г. Чехия се характеризира с висока степен на индустриализация и експортна ориентация, особено към автомобилната индустрия, което подпомага икономическия растеж.

В сравнение с тези държави, България бележи по-бавен растеж след присъединяването към ЕС, особено в първите години след кризата от 2008 г. Докато Румъния и Полша регистрират по-високи темпове на икономическо възстановяване, България се възстановява по-бавно, главно поради структурни проблеми, свързани с ниската производителност и слабостите на административната система. Въпреки това, през последните години (2015-2019 г.) България също показва стабилен растеж на БВП от 3-4% годишно, което я поставя в добра позиция за бъдещо икономическо развитие.

Външна търговия и инвестиции

Румъния успява да привлече значителен обем чуждестранни инвестиции, особено в автомобилната индустрия, производството на електроника и сектора на информационните технологии. Благодарение на подобрената инфраструктура и конкурентните условия на труд, страната става важен производствен хъб в региона. Полша е лидер в региона по отношение на привлечени чуждестранни инвестиции. Със стабилна икономическа политика, ниска инфлация и добре развита инфраструктура, Полша привлича международни компании, особено в сектора на автомобилната индустрия, машиностроенето и информационните технологии. Унгария също има успешна стратегия за привличане на инвестиции, особено в автомобилния и фармацевтичния сектор. Страната използва ниските си данъчни ставки и стратегическото си местоположение, за да привлече чуждестранни компании и да развие експортно ориентираната си икономика. Чехия е сред най-индустриализираните страни в Централна Европа и успява да привлече значителни инвестиции в автомобилната индустрия и високите технологии. Високото качество на образованието и добре развитата индустриална база са ключови фактори за успеха на Чехия в привличането на инвестиции.

България, макар и да отчита увеличение на чуждестранните инвестиции след присъединяването към ЕС, се сблъсква с редица пречки, свързани с административни проблеми, корупция и недостатъчно развита инфраструктура (ИИИ при БАН, 2024). Въпреки това, през последните години страната се опитва да подобри условията за бизнес и да привлича повече инвестиции в технологичния сектор и индустрията.

Институционална стабилност и корупция

Румъния бележи значителен напредък в борбата с корупцията през последното десетилетие, особено чрез създаването на Националната дирекция за борба с корупцията (DNA). Тази институция започва да разследва и повдига обвинения срещу високопоставени политици и бизнесмени, което е възприето положително от международните партньори и инвеститори. Въпреки това, проблемите с корупцията продължават да бъдат значителни, особено в местните администрации и съдебната система. Полша се радва на относително стабилна институционална рамка, въпреки че в последните години страната се сблъсква с критики от страна на ЕС, свързани с независимостта на съдебната система и реформите, въведени от правителството. Нивата на корупция в Полша са сравнително ниски в сравнение с другите източноевропейски страни, като основната пречка за бизнеса остава административната тежест. Унгария е пример за страна, където проблемите с корупцията и политическите реформи оказват сериозно влияние върху икономиката и инвестиционния климат. Според международни доклади, нивата на корупция в страната нарастват през последното десетилетие, което е съпроводено с ограничаване на свободата на медиите и независимостта на съдебната система. Чехия е сред страните с най-висока институционална стабилност в Източна Европа. Страната има добре функциониращи институции и относително ниски нива на корупция. Въпреки някои случаи на корупционни скандали, те не оказват съществено влияние върху стабилността на институциите и икономическото развитие на страната.

В сравнение с тези държави, България остава една от страните в ЕС с най-високи нива на корупция и институционални проблеми. Въпреки предприетите реформи и натиска от страна на Европейската комисия (European Commission, 2023) за подобряване на правосъдната система, корупцията продължава да бъде сериозна пречка за икономическото развитие на страната. Липсата на ефективно прилагане на антикорупционни мерки и административната неефективност водят до негативен инвестиционен климат, което ограничава възможностите за устойчиво развитие.

Анализ на резултатите

Един от основните фактори, който обяснява различията в икономическото представяне на страните, е качеството на институциите и ефективността на управлението. Полша и Чехия са известни с по-силните си и прозрачни институции, което се отразява благоприятно на икономическата им среда. Тези страни успяха да създадат стабилни механизми за управление, които насърчават бизнес климата, инвестициите и иновациите. В сравнение с тях, България изпитва сериозни затруднения поради слабостите в институционалната система. Високите нива на корупция и бюрокрация създават несигурност и отблъскват както местни, така и чуждестранни инвеститори. Според международни индекси като Индекса за възприемане на корупцията на Transparency International, България продължава да заема ниски позиции сред държавите членки на ЕС, което показва системни проблеми с правовата държава и правоприлагането. Тези институционални слабости влияят негативно върху икономическия растеж и забавят реформите в ключови сектори на икономиката.

Ефективността на администрацията също играе ключова роля за икономическото развитие. Чехия и Полша успяха да изградят по-ефективни и прозрачни администрации, които съответно им позволиха да усвояват европейските фондове по-ефективно и да реализират инфраструктурни и икономически проекти в кратки срокове (European Commission, 2024).

В България, слабостите в публичната администрация затрудняват ефективното управление и усвояване на европейските средства. Това се дължи на административна неефективност, свързана с бюрократични пречки, липса на координация между различни институции и нисък капацитет за управление на проекти. Тези пречки не само забавят икономическия напредък, но и ограничават възможностите за бързо възстановяване след кризи. Например, слабата организация и управлението на проекти, финансирани с европейски средства, често водят до ниско усвояване и забавяне на критични инфраструктурни проекти.

Развитието и използването на човешкия капитал са ключови за икономическия растеж. Страни като Полша и Чехия разполагат със силно развити системи на образование и обучение, които позволяват да се задоволят нуждите на индустриалните сектори и да се увеличи производителността. Освен това тези държави привличат значителен брой квалифицирани кадри от други страни в ЕС и извън него.

В България, демографската криза и емиграцията на млади и квалифицирани кадри силно ограничават капацитета на работната сила. Застаряването на населението и големият отлив на млади хора към по-развитите европейски държави значително намаляват икономическия потенциал на страната. Въпреки че България разполага с добре образовани специалисти в области като инженерство и ИТ, високите нива на емиграция ограничават наличието на квалифицирани кадри в ключови сектори.

Структурата на икономиката също играе важна роля в обяснението на различията в растежа между България и други източноевропейски държави. Полша и Чехия успяха да диверсифицират своите икономики, като развиха силни експортно ориентирани сектори, особено в производството и технологиите. Например, Чехия разчита на мощния си автомобилен сектор, който играе значителна роля в експортните ѝ показатели и осигурява стабилен икономически растеж.

В контекста на България, индустриалната структура е по-малко диверсифицирана и в по-голяма степен се основава на сектори с по-ниска добавена стойност, като селско стопанство и нискотехнологични производства. Въпреки нарастващата роля на ИТ сектора и аутсорсинг индустрията, България все още не е успяла да развие достатъчно силни експортно ориентирани индустрии, които да стимулират устойчив икономически растеж. Ограничената икономическа диверсификация прави страната уязвима на външни икономически шокове и кризи.

Политическата стабилност и способността за бързо прилагане на реформи също имат значително въздействие върху икономическите резултати. В страни като Полша и Чехия, въпреки периодични политически сътресения, реформите в икономическата политика и правосъдието са били прилагани по-бързо и по-целенасочено. Тези държави са успели да изградят по-силни институции и да осигурят по-добра бизнес среда.

От друга страна, политическата нестабилност в България през последните години забавя икономическите реформи. Честите промени в правителството, липсата на последователност в икономическите политики и политическите кризи отслабват институционалната рамка и възпрепятстват осъществяването на необходимите реформи за подобряване на бизнес средата и привличане на чуждестранни инвестиции.

Заклучение

Един от основните изводи от доклада е, че икономическият растеж на България след присъединяването към ЕС остава стабилен, *но по-бавен в сравнение с други*

източноевропейски държави като Полша и Румъния. Страната е постигнала макроикономическа стабилност и успява да се възстанови след кризите, но растежът на БВП все още изостава от водещите икономики в региона. Сравнителният анализ с другите страни от Източна Европа показва, че България има нужда от повече усилия за подобряване на конкурентоспособността и повишаване на производителността на труда.

Демографската криза и емиграцията на квалифицирани кадри са сред най-големите предизвикателства, пред които страната е изправена. Намалването на населението и застаряването на работната сила оказват сериозен натиск върху социалната система и икономическите перспективи на България. Възстановяването на демографския баланс и задържането на младите специалисти в страната ще бъдат ключови фактори за бъдещото развитие на икономиката.

Европейските структурни и кохезионни фондове играят важна роля за модернизацията на инфраструктурата и насърчаването на иновациите, но България среща трудности с усвояването на тези средства. Въпреки реализирането на значителни проекти в транспортния сектор и индустрията, бюрократичните пречки и корупцията продължават да ограничават ефективността на инвестициите. В сравнение с други страни от Източна Европа, като Полша и Чехия, България трябва да подобри своя административен капацитет и да повиши прозрачността при разпределението на средствата.

Друг важен извод е, че институционалната реформа остава критична за бъдещото икономическо развитие на България. Липсата на ефективни антикорупционни мерки и административните пречки пред бизнеса продължават да възпрепятстват пълноценното използване на потенциала на страната. Насърчаването на правовата държава, подобряването на ефективността на държавните институции и осигуряването на прозрачност ще бъдат от ключово значение за привличането на чуждестранни инвестиции и създаването на благоприятна бизнес среда.

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INFLATION DYNAMICS IN BULGARIA: ROLE OF GLOBAL AND DOMESTIC FACTORS²

Abstract: The paper analyses the development of the inflationary process in Bulgaria and identifies the most important determinants of price dynamics. The research methodology includes a descriptive analysis of the main drivers of inflation and the contributions of the key HICP subgroups. Additionally, econometric estimation is employed to identify major economic shocks – demand, supply, and labour market shocks, using a structural BVAR model. This approach allows for a historical decomposition of the impact of these structural shocks on price dynamics. Empirical results indicate that external factors, particularly rising import prices and increased external demand, have had the strongest inflationary effect. During certain periods, Bulgaria's domestic macroeconomic environment has also significantly impacted inflation, primarily through increases in household consumption and labour costs.

Keywords: inflation, import prices, labour costs, BVAR model, historical decomposition

JEL: C32, E31, F41, E58, J30

1. Introduction

The dynamics of the overall price level represent one of the most critical indicators of a nation's economic state and development. It results from the complex interplay of various factors and conditions, whose specific and evolving impacts over time drive changes in its rate. Some of these factors are of a global nature, while others are of domestic origin and are driven by developments in the goods, money and input markets.

The aim of this paper is to analyze the development of the inflationary process in Bulgaria in the period 2000 – mid-2024, highlighting its key drivers and assessing their impact. The period of the study covers the years before and during EU membership, in which inflation rates differ markedly from the extremely high inflation of the 1990s and do not reflect the initial effects of the currency board introduction.

2. State of the problem

The structural causes of inflation in Bulgaria are subject of research in a number of publications, distinguishing different groups of goods and services – tradable and non-tradable, food, non-food and services, with competitive and administered prices, etc. Some of them make empirical assessments of the applicability of the Balassa-Samuelson effect for different periods. Chuckalev (2002) confirms the increase in the relative price of non-tradables due to the increase in labour productivity in the tradable sector and the increase in wages in both the tradable and non-tradable sectors. Raleva (2013) draws a similar conclusion and reveals the specificities of Bulgarian conditions compared to the assumptions of the Balassa-Samuelson model. Nenovsky and Dimitrova (2002) do not prove the existence of such an effect and highlight the reasons that prevent its manifestation.

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The next group of analyses examine the behaviour of prices of subgroups of goods and services. They characterize their contribution to the overall price increase and track the observed changes over time. A particular emphasis is placed on the increase in the relative price of services, which is seen as the main way to achieve price-level convergence (Kasabov, 2022).

Empirical research on the dependence of inflation on cost-push factors in Bulgaria is mainly focused on the increase in wages, crude oil prices and administrative prices (Kasabov et. al, 2017; Raleva, 2013). More recent studies have also incorporated the rise in natural gas prices, which has become increasingly significant since 2022 (Todorov, Tsvetkov, 2023). As regards the influence of rising wages and rising labour costs, the results vary across studies depending on whether firm-level or macroeconomic data are utilized. In Kasabov and Paskaleva (2018) the price-setting behaviour of the firms in Bulgaria is weakly affected by income growth but the trend of this influence is increasing, while in Kasabov et. al. (2017) the impact of this factor is relatively strong.

The study of the demand-side impact on inflation usually involves tracing the relationships with the dynamics of GDP and revealing the role of macroeconomic policy. A publication of Nguyen, Takizawa and Vassileva (2023) shows a weak transmission of tight monetary policy by the ECB and a boosting effect by fiscal policy in the aftermath of the COVID crisis. Additionally, inflation expectations are considered to play a significant role in driving price increases, alongside the bidirectional relationship between inflation and inflation instability (Tsvetkov, Georgieva, 2022). Nenovsky (2023) considers the monetary aggregate M2 as a good predictor of inflation, which explains the dependence of domestic inflation on the expansionary policy of the ECB in the recovery period.

3. Methodology

In this section, we introduce the model framework and outline the Bayesian estimation approach for a structural Vector Autoregression model (SVAR).

3.1. Structural BVAR

In the reduced form of the SVAR model, each dependent variable is regressed on its own lags as well as on the lags of the other variables in the system. In matrix notation, this can be expressed as follows:

$$y_t = c + B_1 y_{t-1} + \dots + B_k y_{t-k} + u_t, \quad t = 1, \dots, T \quad (1)$$

where y_t is a $nx1$ vector containing the endogenous (observed) variables at period t , c is a vector of constants, B_j are nxn matrices of coefficients, u_t are the reduced-form error terms with zero mean and covariance matrix Σ .

The reduced form cannot be used for structural analysis due to cross-correlation among the reduced-form errors. To interpret the equations in economic terms, it is necessary to identify certain exogenous shocks. This is achieved by imposing restrictions on a decomposition of Σ , which allows for the computation of the following structural form of the model:

$$A_0 y_t = \mu + A_1 y_{t-1} + \dots + A_k y_{t-k} + \varepsilon_t, \quad t = 1, \dots, T \quad (2)$$

where A_0 is an invertible nxn matrix containing the contemporaneous reactions of the variables to the structural shocks, A_j (for $j=1, \dots, k$) are fixed nxn coefficient matrices, μ is an $nx1$ fixed vector and ε_t is a $nx1$ vector of structural innovations (or shocks) with $E[\varepsilon \varepsilon'] = I$, i.e. the identity matrix. System (2) on its own is unidentified and cannot be solved without further

restrictions. To address this problem, we apply economic theory to impose both zero and sign restrictions on the model, allowing us to distinguish between different structural shocks.

Regarding the estimation of the model parameters, we employ Bayesian techniques to mitigate the issue of over-parameterization often encountered in traditional VAR models. Reduced-form parameters are estimated using an independent Normal-Inverse-Wishart prior, while structural shocks are identified following the methodology proposed by Rubio-Ramirez et al. (2010).

The baseline VAR model includes two lags of the following five variables: gross value added (GVA) at constant prices, HICP, real wages, import prices (measured by the import deflator), and real exports. This allows us to identify five types of structural economic shocks: a domestic aggregate demand shock, a domestic aggregate supply shock, a domestic labour shock, a global supply shock, and a global demand shock. The data is from the National Statistical Institute (NSI) and is at quarterly frequency.

In the empirical analysis, we focus on the contribution of global versus domestic shocks. The restrictions imposed to identify the five economic shocks are outlined in Table 1. Given that Bulgaria is characterised as a small open economy, our baseline specification assumes that domestic shocks cannot influence foreign demand in the short run. Therefore, we impose zero restrictions on exports, preventing domestic shocks from impacting them. This restriction is applied only on impact, as the effects of domestic shocks on prices may eventually alter the competitive position of the economy, thereby influencing exports in the medium run. For a domestic demand shock, the model requires that GVA and HICP both increase in response to a positive shock. For a domestic supply shock, the model requires that HICP increases while output and real wages decline. These responses are consistent with a negative productivity shock. The labour market shock results in an increase in real wages and HICP, while output declines. This identification aligns with either a negative labour supply shock or a wage mark-up shock, both of which have occurred in recent years due to a tight labour market and raises in the minimum wage. In the case of a positive global demand shock, exports, foreign prices, domestic output, and HICP all increase. Finally, for a global supply shock, we assume that foreign demand declines, import prices increase, HICP rises, and GVA decreases.

Table 1. Identification pattern based on zero and sign restrictions

Variable	Shock	Domestic demand	Domestic supply	Labour shock	Global supply	Global demand
GVA		+	-	-	-	+
HICP		+	+	+	+	+
Wages (in real terms)		•	-	+	•	•
Import prices		•	•	•	+	+
Exports		0	0	0	-	+

Note: „•“ = unconstrained, „+“ = positive sign, „-“ = negative sign, „0“ = zero restriction. All restrictions are imposed on impact.

4. Empirical Results

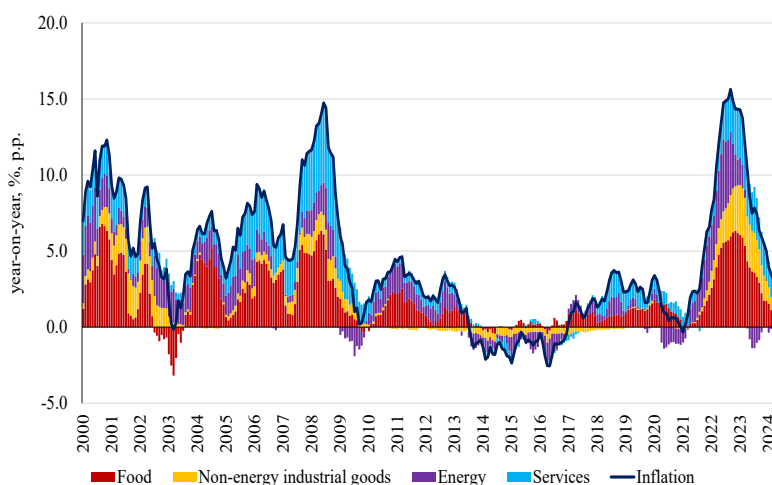
4.1. Descriptive evidence

Price dynamics in Bulgaria from 2000 to mid-2024 are characterized by alternating periods of moderate and high inflation (Figure 1). Two distinct periods of relatively higher price increases stand out. The first phase lasted until the end of 2008, during which inflation averaged 7.2%. This period was marked by high volatility, with inflation rates fluctuating from around 0% in 2003 to over 14% in 2008. The second phase of stronger inflation was shorter, occurring from late 2021 to mid-2023. In 2022, inflation peaked at over 15%, driven by the recovery from the

COVID pandemic, significant fiscal measures implemented in response to it, and a surge in international commodity prices, particularly following the onset of the war in Ukraine. Between the economic crises of 2009 and 2020, the rates of price increases remained low, not exceeding 3-4%. The only exception was a three-and-a-half-year period – from the second quarter of 2013 until the end of 2016, characterized by deflation.

In structural terms, food products were the group with the largest contribution to HCIP dynamics in all high-inflation periods (Figure 1). This is due to the upward price dynamics of food commodities on international markets, as well as their significant share in the consumer basket (29% in 2023). Services also contributed significantly to inflation during the periods of 2005-2009, 2018, and from late 2023 to mid-2024. Energy prices were the dominant driver of inflation in the last three quarters of 2021. While Figure 1 shows only the direct effects related to oil and natural gas, the overall impact is likely much greater due to second-round effects, given that Bulgaria's energy intensity in 2022 was 3.5 times higher than the EU-27 average. During the deflationary period, energy products represented the group with the most significant negative contribution to inflation. Additionally, the positive contribution of rising prices of non-energy industrial goods steadily increased during the high inflation period of 2022-2023, indicating a strengthening of the global factors, as these products are largely imported into Bulgaria.

Figure 1. HICP inflation and contributions of main subgroups



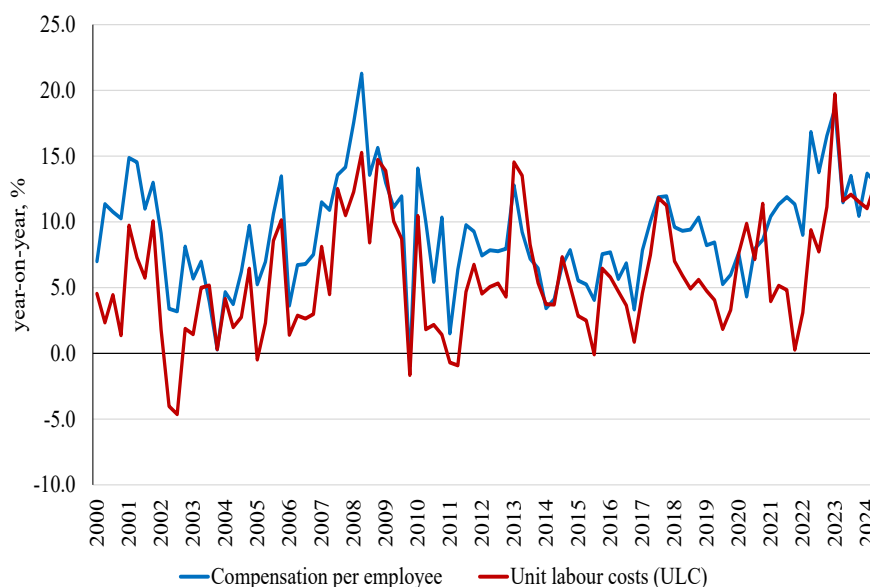
Source: NSI, Eurostat and own calculations.

Regarding the domestic environment, wage developments are likely the primary driver of price pressures. The dynamics of wages (measured by compensation of employees) also indicate periods of moderate and strong increases, which correspond to changes in the inflation rate (Figure 2). The maximum increase of 21.3% was recorded in the second quarter of 2008, while the second-highest increase of 18.6% occurred in the first quarter of 2023. The significant wage growth resulted in a substantial increase in unit labour costs during both the 2007-2008 and 2022-2023 periods.

Economic activity significantly influences inflation dynamics. Strong economic activity facilitates the pass-through of labour costs and foreign prices to HICP. As shown in Figure 3, between 2004 and 2008, the robust GDP is growth-driven by private consumption-indicated strong domestic demand. From 2009 to 2013, subdued activity contributed to slower inflation, and a decline in private consumption in 2013, coupled with international energy price dynamics, likely led to deflation. Similarly, subdued consumption due to COVID-19 containment measures and a slowdown of inflation were observed during the pandemic in 2022. However,

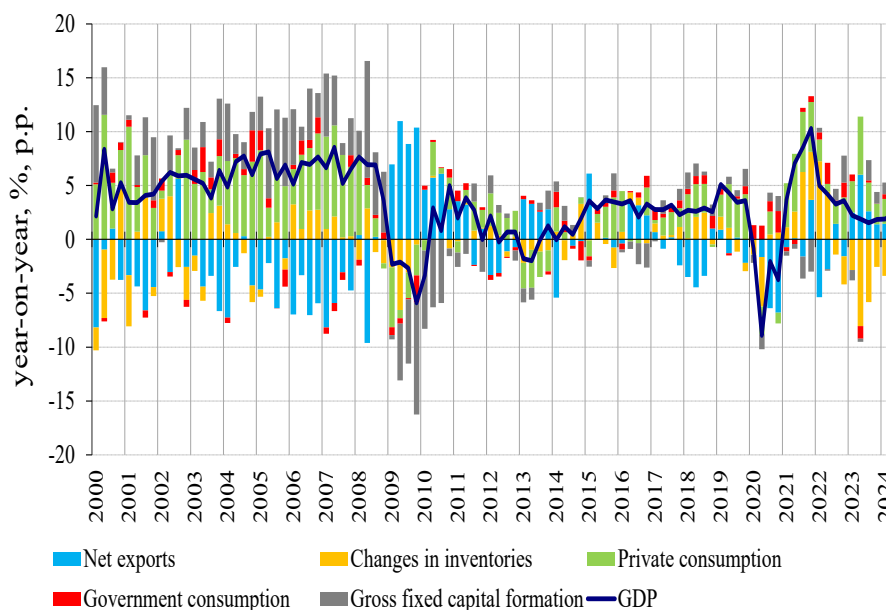
as household expenditure increased from 2021, services inflation accelerated, supported by rising labour costs and second-round effects from higher energy and food prices.

Figure 2. Wage and labour cost developments



Source: NSI and own calculations.

Figure 3. GDP growth and its breakdown

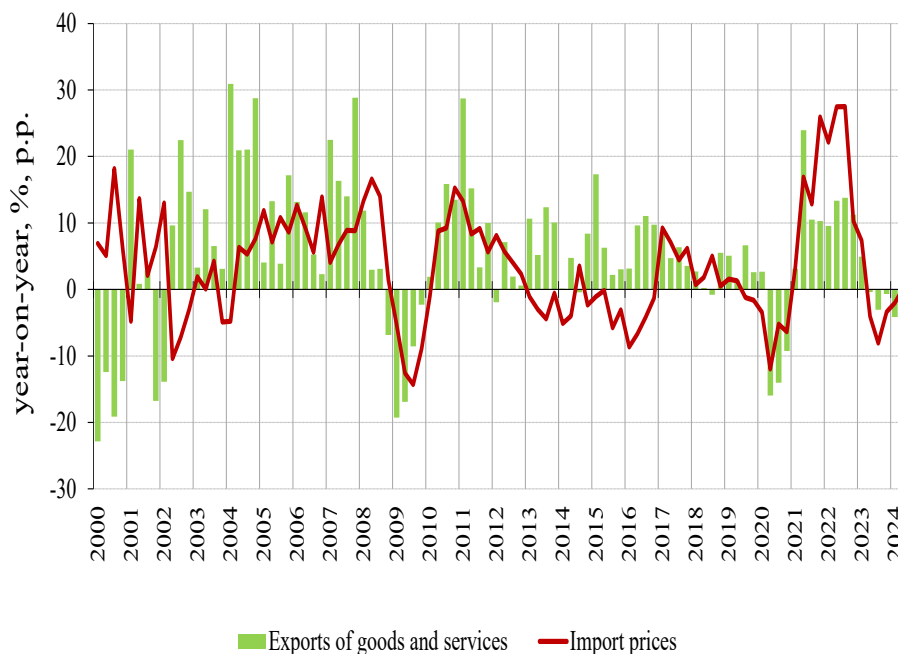


Source: NSI and own calculations.

The growth rate of import prices has shown a strong correlation with the HICP increase (Figure 4). The most pronounced surge in import prices occurred in the first three quarters of 2022, reaching a peak of 27.5% in the third one. Notable rises in import prices were also observed in 2008 and in the second quarter of 2021, with increases of up to 16.6%. Fig. 4 shows that periods of high global and imported inflation are often accompanied by strong external demand. This overlap complicates identifying the primary sources of inflation – whether from global demand or supply shocks. Therefore, in this paper, we combine these factors and refer to them as a

„global shock“. This issue is particularly evident in the high inflation period of 2022-2023, when global prices surged due to supply concerns linked to international conflicts, while external demand remained robust.

Figure 4. Dynamics of import prices and external demand

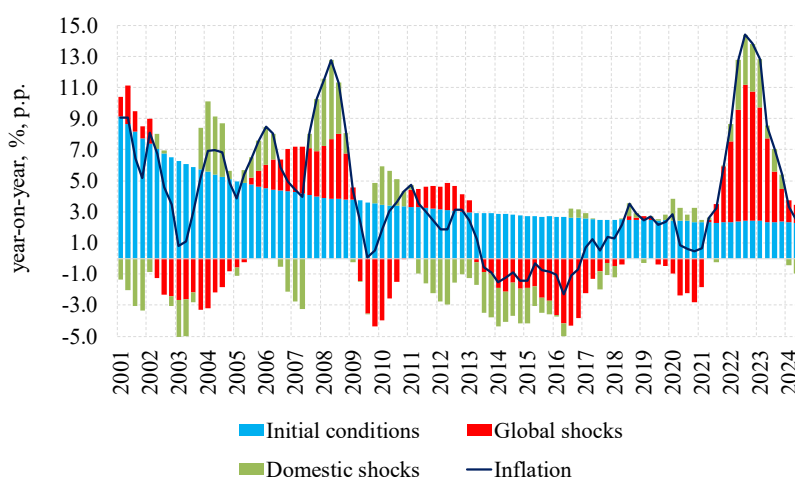


Source: NSI and own calculations.

4.2. Model-based evidence

Historical decomposition offers a suitable methodological framework for the analysis of specific economic episodes because it enables the identification of those shocks which predominantly characterize a particular period. In terms of methodology, it breaks down a time series into two components. The first component represents a baseline projection, i.e. a scenario which assumes there were no shocks during the whole period, while the other component consists of the identified structural shocks that have occurred in the past. Figure 5 presents the historical decomposition of inflation. The dark blue line represents actual inflation, while the light blue bars show the unconditional forecast from the VAR (baseline projection). The difference between the two illustrates the contributions of global and domestic shocks. According to the model's results, domestic and global shocks contributed equally to the inflation acceleration during the 2007-2008 period. In contrast, the 2022-2023 inflation surge was primarily driven by global factors, with a smaller contribution from domestic price pressures. The model also provides valuable insights into the low-inflation period. Estimates suggest that the inflation slowdown in the period 2011-2013 was primarily due to the weakening of domestic price pressures. Inflation shifted to deflation in mid-2013 as foreign prices eased, adding to the reduced domestic pressures.

Figure 5. Historical decomposition of inflation



Note: Variables in the model are expressed in logarithmic form. Year-on-year percentage changes are approximated by the log differences over a four-quarter period.

Source: NSI and own calculations.

4. Conclusions

In summary, from 2000 to mid-2024 Bulgarian economy exhibited alternating periods of moderate and high inflation. Two key inflation peaks stand out: the first, during 2007-2008, was fueled equally by domestic and global shocks, while the second, in 2022-2023, was predominantly driven by global factors such as supply disruptions, strong foreign demand and rising import prices. The historical decomposition of inflation reveals that domestic price pressures were commonly tied to periods of simultaneous changes in labour costs and economic activity. Wage growth played a positive role in inflation during the 2007-2008 period, as strong GDP growth, particularly in private consumption, aided in the transmission of cost shocks to consumer prices. Periods of deflation and low inflation were associated with low economic activity and easing import prices.

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ASSESSMENT OF BULGARIA'S PARTICIPATION IN THE EU COMMON TRADE POLICY

Abstract: *The aim of this paper is to analyse the extent to which Bulgaria benefits from its participation in the Common Commercial Policy of the EU by examining the dynamics of Bulgaria's trade with countries with which the EU has concluded preferential trade agreements. The first part of the paper briefly presents the dynamics of Bulgaria's trade in goods during the period of EU membership and the geographical structure of the country's international trade. The main part of the publication analyses relations with countries with which the EU has concluded preferential trade agreements. The agreements studied are selected according to their type (depth of trade liberalisation) and the time of their conclusion (before and after Bulgaria's membership) and include the Customs Union with Türkiye (1995), the Free Trade Agreements with Chile (2003), South Korea (2011) and Vietnam (2020), and the Stabilisation and Association Agreements with Macedonia (2004) and Albania (2009). The period analysed is 2004-2023. The main hypothesis supported by the research is that Bulgaria is not realising the potential offered by the agreements under the EU's Common Commercial Policy.*

Keywords: *EU trade policy; preferential trade agreements; free trade agreements; foreign trade relations, extra-community trade*

JEL: *F13; F14; F53*

1. Introduction

According to the theory of international economics, preferential trade agreements are supposed to increase trade between the countries that conclude them. By joining the EU, Bulgaria becomes part of its Common Commercial Policy, as well as a party to all its trade treaties and negotiations, therefore it can be expected that our trade with countries with which the Union has concluded preferential trade agreements will increase. In this regard, by examining the dynamics of Bulgaria's trade with countries with which the EU has concluded such agreements, the paper analyses to what extent the country is realising benefits from its participation in the Union's Common Commercial Policy.

The aim is to assess precisely to what extent Bulgaria realizes benefits from its participation in the EU Common Commercial Policy by examining the dynamics of Bulgaria's trade with countries with which the EU has concluded preferential trade agreements. The first part of the paper briefly presents the dynamics of Bulgaria's trade in goods in the period of EU membership and the geographical structure of the country's trade. The main part of the paper analyses relations with countries with which the EU has concluded preferential trade agreements.

2. State of the Problem

Both Bulgaria's accession to the EU in 2007 and the multiple crises over the last two decades have had a serious impact on overall trade flows and trade volumes. Changes in trade flows have been influenced both by the development of external economic relations and by membership of integration groupings. As a member of the EU, Bulgaria is also part of the Common Commercial Policy of the Union.

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EU free trade agreements provide for reciprocal trade liberalisation with the respective countries, as well as certain concessions in other areas, and can be seen as an opportunity for member states to establish and strengthen their foreign trade and economic ties with countries that have the potential to market products with certain comparative advantages that cannot be effectively traded within the EU Single Market. Currently, the EU has concluded such agreements with Mexico, Chile, South Africa, South Korea, Singapore, New Zealand, Vietnam and Japan, agreements with Peru and Colombia are in the process of ratification, and negotiations are underway with Indonesia, India, the Philippines, Thailand and others (EC, 2024).

On the other hand, the Stabilisation and Association Agreements not only establish a free trade area between it and the country concerned but also identify common political and economic objectives and promote regional cooperation. Such agreements are concluded in the context of the future enlargement of the Union and serve as a basis for the accession process. Analysing the impact of these agreements is important both in terms of the geographical proximity of these countries and the potential opportunities for regional trade and cooperation in their eventual future membership of the Single Market.

Finally, with EU membership, the agreement signed to establish a Customs Union between the EU and Türkiye comes into force for Bulgaria, which provides for a much higher degree of trade liberalisation, virtually eliminating almost all customs and non-tariff restrictions on trade. This should lead to a significant increase in bilateral trade flows which, due to Bulgaria's geographical proximity to Türkiye and long-standing foreign economic ties, should boost trade to a greater extent than Türkiye's trade with the EU.

3. Methodological Approaches

The analysis covers the period 2004-2023, which has been chosen to have a basis for comparison with the development before our accession to the EU, and on the other hand – to be able to take into account the state of the country's foreign trade indicators before the onset of the global financial crisis, as the expectation that the crisis will continue to smoulder for decades with the presence of corresponding collapses and revivals has already been confirmed.

The studied agreements are selected according to their type (depth of trade liberalization) and according to the time when they were concluded (before and after Bulgaria's accession). The sample includes the free trade agreements with Chile (2003), South Korea (2011) and Vietnam (2020) and the Stabilisation and Association Agreements with Macedonia (2004) and Albania (2009), as well as the EU-Türkiye Customs Union (1995).

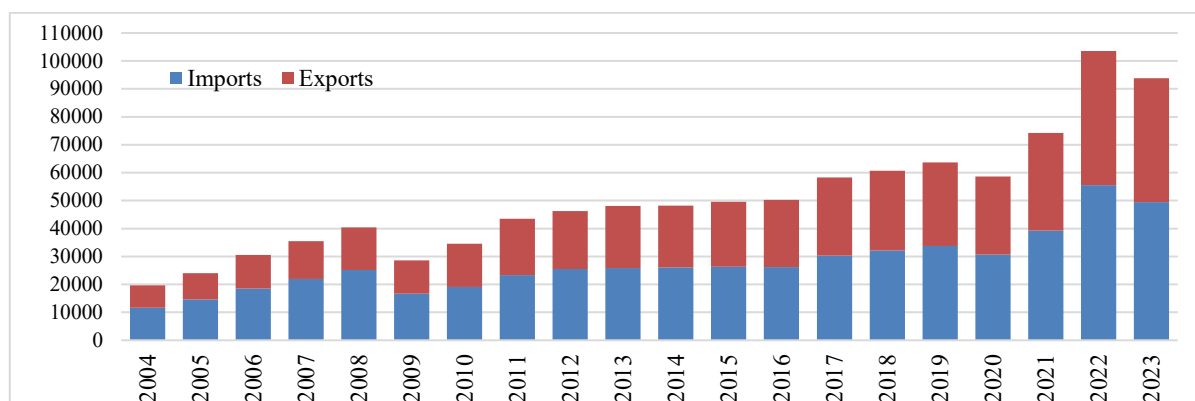
The extent to which the trade liberalisation provided for in the various preferential trade agreements affects bilateral trade flows with the country concerned can be assessed either by the nominal increase in the value and volume of trade or by comparing this increase with the EU's trade as a whole with these countries. The study uses both approaches – historical analysis of the dynamics of imports, exports and the total value of trade flows and comparative analysis of data for Bulgaria and those for the EU.

All data used are the author's own calculations based on import and export data from International Trade Centre calculations based on UN COMTRADE statistics, extracted on 1 October 2024.

4. Research Results

Over the period 2004-2023, Bulgarian foreign trade increased significantly (Figure 1). EU accession in 2007 and subsequent economic development led to significant growth, noticeably interrupted by the global financial crisis in 2009. The COVID-19 pandemic further disrupts the dynamics in 2020 and 2021, but the country shows resilience and recovers growth. Between 2012 and 2023, the value of trade almost doubles.

Figure 1. Bulgaria's foreign trade flows (2004-2023, million euro)



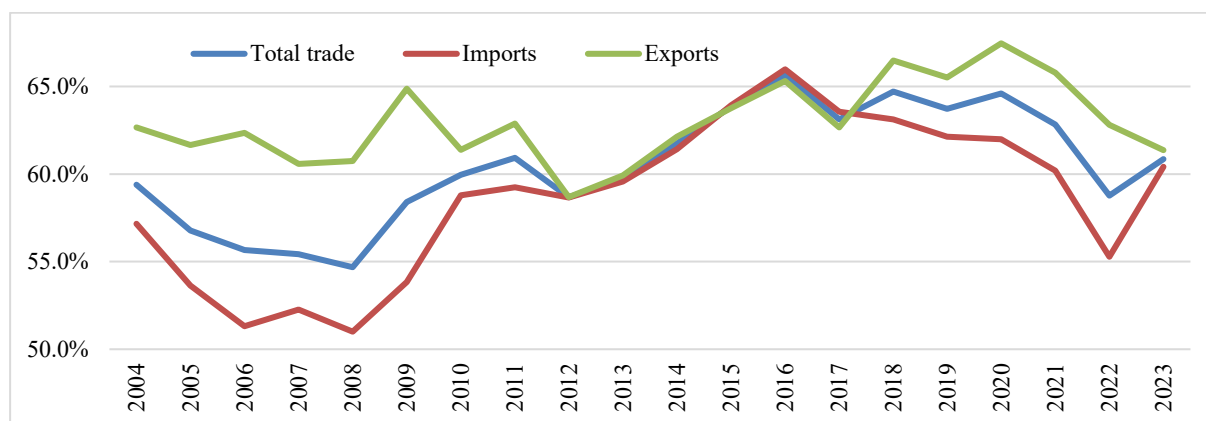
Source: Own calculations based on ITC data.

The growth up to 2008 was accompanied by a larger increase in imports compared to exports, but the decline in 2009 particularly affected imports. Although Bulgaria's exports have been growing, the narrowing of the trade account deficit is mainly the result of a decline in imports rather than a significant growth in exports. After the crisis and the pandemic, despite a temporary slowdown, exports reached €44.3 billion in 2023 and imports €49.5 billion. The narrowing of the trade deficit from -€8.4 billion in 2007 to -0.4 billion in 2023 suggests an improvement in the country's external economic position.

Direction of trade

The dynamics of Bulgaria's intra-community trade over the period 2004-2023 (Figure 2) can be divided into two main periods. From 2004 to 2011, the share of trade with EU countries remained relatively constant at around 60%. The only year with a sharp increase was 2009, due to the effects of the global financial crisis, but levels stabilised thereafter.

Figure 2. Share of trade with EU Member States (2004-2023, %)



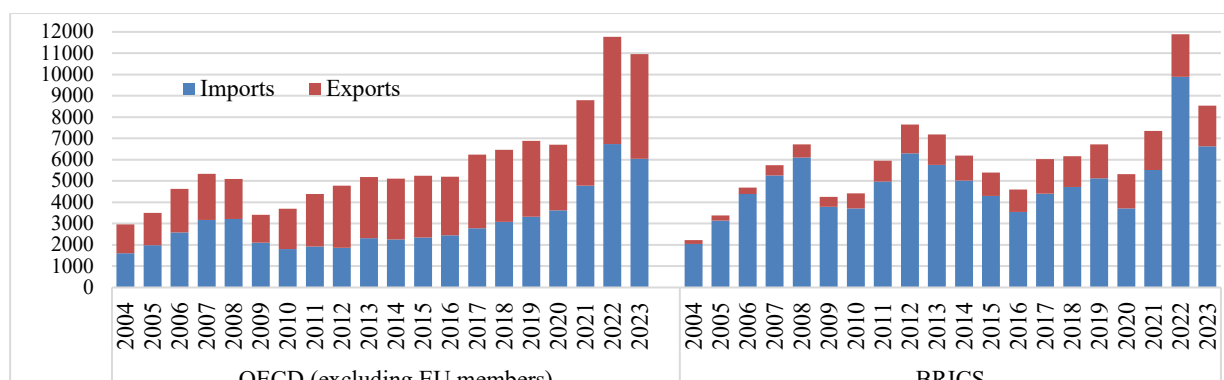
Source: Own calculations based on ITC data.

During this period, exports have typically exceeded imports, but in recent years the gap between the two has been closing due to a decline in exports to the EU. After 2012, the share of trade with the EU started to increase, with the COVID-19 pandemic temporarily slowing this growth in 2020, but the economy recovered quickly. The war in Ukraine in 2022 and 2023 created new challenges and led to a slight reduction in trade to around 61% in 2023.

In relation to trade in the EU, it should be noted the serious reduction of the deficit in Bulgaria's net exports, recorded during the period under review and especially during the country's membership in the Union – from -5 billion euros in 2007 to -0.4 billion in 2023. This result is an indicator of both export growth and adaptation to the demands of the domestic market but is also a reaction to external shocks from the downturn in economic activity and changes in global logistics caused by both the pandemic and the geopolitical situation in the region.

No major changes have been observed in Bulgaria's trade with non-EU countries since the country's accession to the Union. Here too, however, there have been some changes in the specific geographical focus of the country's trade flows. Interesting is the shift of trade, from developed countries (OECD members) to BRICS countries (Figure 3) – before the global financial crisis trade with OECD countries exceeded that with BRICS by 1.5-1.7 times, but after 2008 trade with BRICS was 1.2-1.6 times higher than that with developed economies. The COVID-19 pandemic is causing a temporary slowdown in these dynamics, especially in the 2020-2021 period, but in 2023 this trend continues, with trade flows with the BRICS remaining at high levels.

Figure 3. Trade with OECD and BRICS countries (2004-2023, million euros)



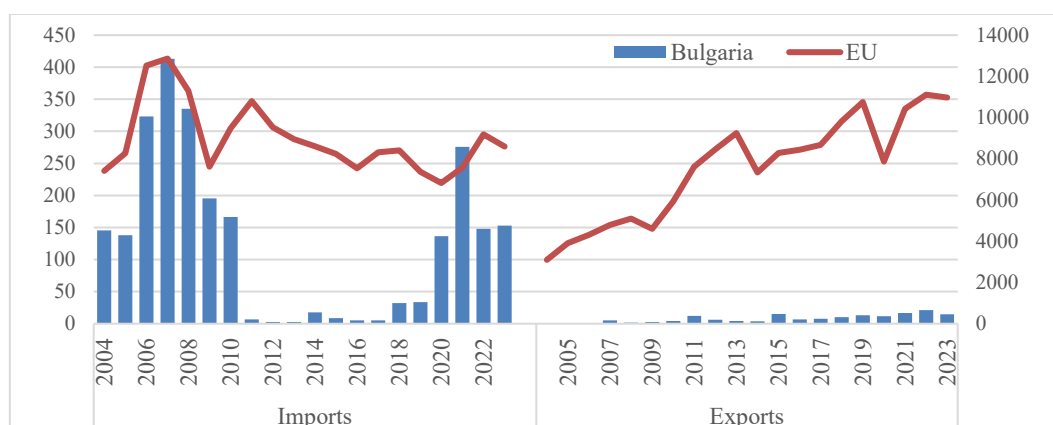
Source: Own calculations based on ITC data.

Exports to the BRICS countries are growing faster than those to the OECD, despite a temporary slowdown from the COVID-19 pandemic, while imports from the BRICS show a sustained recovery and growth until 2023. Despite a positive current account balance with the OECD after 2010, caused by a decline in imports, the substantial growth in imports from the BRICS worsens the current account balance.

Bulgaria as part of the EU Common Commercial Policy

With its accession to the EU, Bulgaria became part of the Free Trade Agreement with Chile, which entered into force in 2003. Unfortunately, during the period of membership, our country failed to take full advantage of the trade benefits offered by the agreement. While in 2007 Bulgarian imports from Chile were significant, in 2023 there will be a substantial contraction. This is particularly evident in comparison to the EU, where exports to Chile have been increasing over the same period (Figure 4).

Figure 4. Bulgaria and EU trade with Chile (2004-2023, million euros)

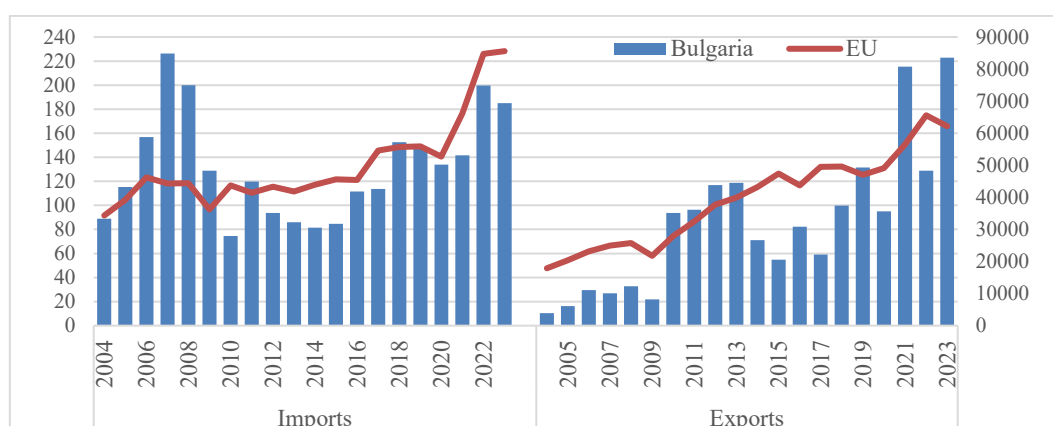


Source: Own calculations based on ITC data.

The more serious problem is that, unlike the trend in the EU, Bulgaria has failed to increase its exports to this country, which is the essence of the potential opportunities provided by the FTA. This becomes even clearer against the background of increased EU exports to Chile, which have almost tripled since 2007.

Bulgaria has also failed to make effective use of its position as an EU member in the negotiations on new trade arrangements under the Common Commercial Policy. An example of this is the Free Trade Agreement with the Republic of South Korea concluded in 2011. While trade in the EU as a whole is growing significantly, Bulgaria is experiencing the opposite trend – imports are declining and exports are almost doubling, but from quite low levels, and these figures are significantly lower compared to the overall EU growth (Figure 5). These divergent trends in trade relations (and especially in exports) for the EU and Bulgaria mean that our country is not only failing to realise the benefits of trade liberalisation but is actually losing its trade position to other EU Member States.

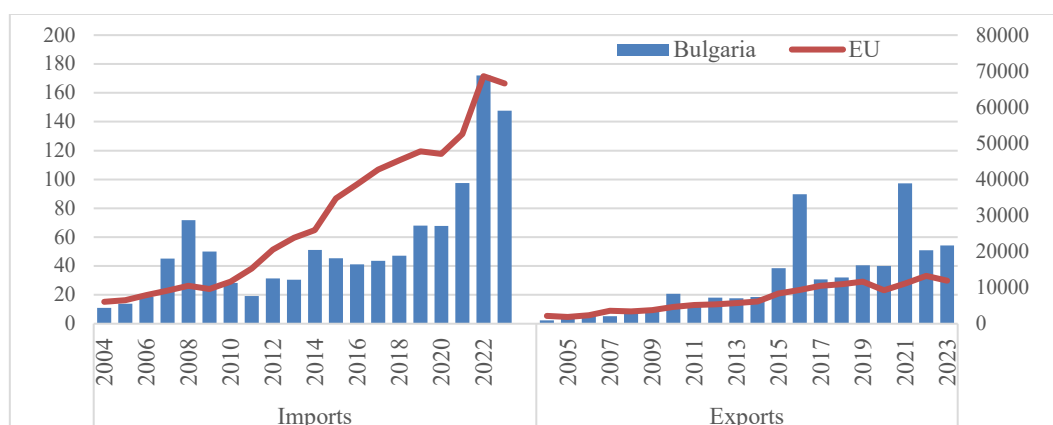
Figure 5. Bulgaria and EU trade with South Korea (2004-2023, million euro)



Source: Own calculations based on ITC data.

Bulgaria has also failed to take advantage of trade opportunities with Vietnam to the same extent as other EU Member States, especially in the context of the rapid expansion of trade relations between the EU and Vietnam. The data show that while EU imports and exports with this country have increased significantly over the period 2004-2023, Bulgaria has seen a much more modest increase (Figure 6).

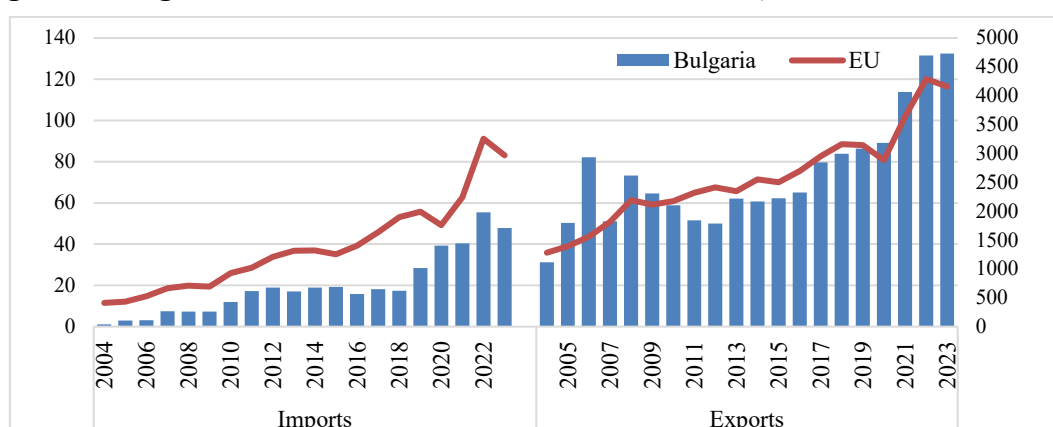
Figure 6. Bulgaria and EU trade with Vietnam (2004-2023, million euro)



Source: Own calculations based on ITC data.

At the time of its accession to the EU, Bulgaria became a party to the Stabilisation and Association Agreement with the Republic of North Macedonia, which entered into force in 2004. Despite the potential benefits of this agreement, the total value of trade between the two countries has increased only marginally. Data show that imports from North Macedonia to Bulgaria have been declining and remained stable since 2010, while exports have been increasing (Figure 7). In contrast to Bulgaria, the EU has achieved sustained growth in imports and exports since 2009, with trade flows increasing by over 40% since 2007. The data show that Bulgaria is failing to realise the benefits of trade liberalisation and is in fact losing its trade position to other EU Member States. However, we also see a reverse trend right at the end of the period – Bulgaria's trade relations with Macedonia in 2023 show growth, while EU trade with Macedonia may be declining. These facts underline that Bulgaria can play an active role in trade relations with Macedonia, especially in the context of the current global challenges.

Figure 7. Bulgaria and EU trade with the RN Macedonia (2004-2023, million euro)

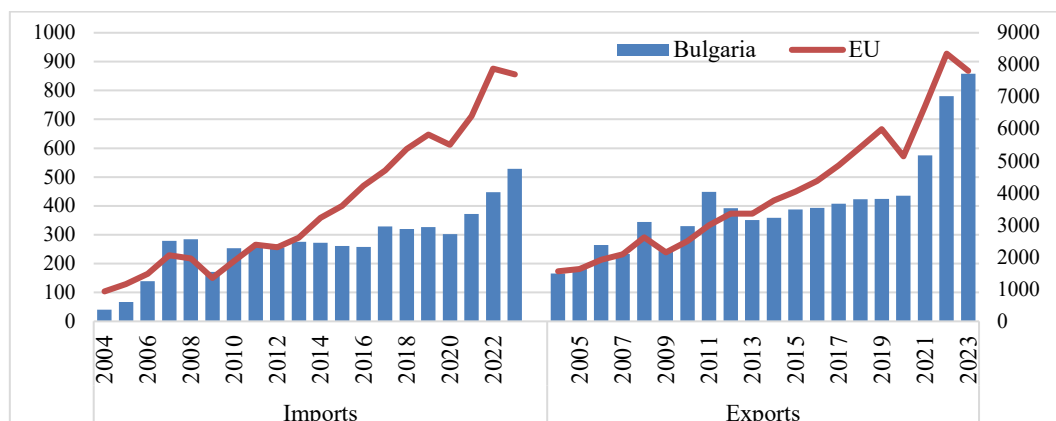


Source: Own calculations based on ITC data.

In the bilateral relations between Bulgaria and Albania, the agreement with which became effective within the period of our membership, there has been a significant growth in Bulgarian imports in recent years (Figure 8). Bulgaria's exports to Albania are also fluctuating. Despite increased values, after 2013 both indicators show a slowing growth trend, with exports remaining lower after 2011 compared to the growth recorded by the EU. Overall, therefore, for both Albania and Macedonia, Bulgaria has rather failed to take advantage of its

participation in the Common Commercial Policy and to use its instruments to boost bilateral trade relations, especially compared to the EU.

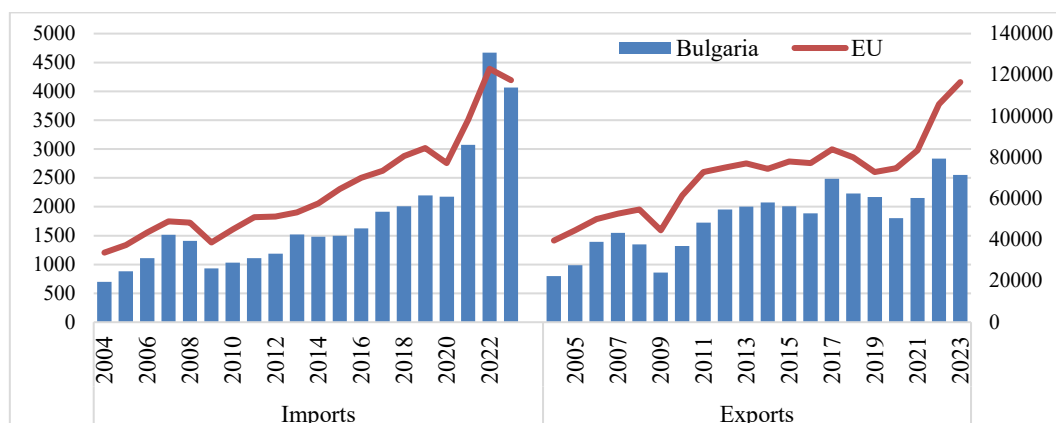
Figure 8. Bulgaria and EU trade with Albania (2004-2023, million euro)



Source: Own calculations based on ITC data.

Türkiye is a leading player in Bulgaria's trade, which already had an agreement to promote bilateral trade before joining the EU. Following Bulgaria's EU membership, the EU-Türkiye Customs Union entered into force, which removed almost all trade restrictions. This should lead to a serious increase in bilateral trade flows which, due to Bulgaria's geographical proximity to Türkiye and long-standing foreign economic ties, should boost trade to a greater extent than Türkiye's trade with the EU. From 2007 to 2016, the value of trade between Bulgaria and Türkiye increased by 27%, mainly in exports. By 2023, trade flows reach €6.636 billion (Figure 9).

Figure 9. Bulgaria and EU trade with Türkiye (2004-2023, million euro)



Source: Own calculations based on ITC data.

However, trade growth with Türkiye remains below the EU average. Although Turkish trade is the leading non-EU destination for Bulgaria, its share has remained constant, except for an increase in 2007. For the EU, growth has been more balanced with increases in both exports and imports. This underlines that Bulgaria is not fully exploiting the potential of its cooperation with Türkiye, especially against the backdrop of the changing economic landscape in the region.

5. Conclusions

Bulgaria's accession to the EU has not had a major impact on the direction of the country's trade. Changes in the geographical structure inside the EU can be partly explained by the Eurozone crisis, while those outside the EU can be explained by the global financial crisis, the pandemic crisis and geopolitical instability, as well as the growing place of emerging powers in the world economy.

The study has shown that Bulgaria is not realising the potential offered by the EU's Common Commercial Policy agreements. There have been no major changes in the dynamics of trade, and the fact that for the countries with which such agreements have been concluded in the framework of membership, we are lagging behind in the growth of trade typical of the EU, and in some cases even experiencing a decline when there is an increase in the Union, can be seen as a negative.

In order for the opportunities available under the EU's Common Commercial Policy to be maximised by Bulgarian companies, it is necessary to take active measures to inform and support Bulgarian businesses. Such action by the state is even more urgent in view of the new agreements and the new framework of the EU Common Commercial Policy.

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THE GREEN TRANSITION AS PART OF THE MANDATE OF CENTRAL BANKS IN CONDUCTING MONETARY POLICY

Abstract: Climate change poses a serious risk to global economic stability, influencing prices, production, currency stability, and overall economic growth. This underscores the need for central banks to incorporate environmental factors into their monetary policies. The paper explores the role of several European Union central banks in supporting the transition to a net-zero carbon economy.

Keywords: monetary policy; financial policy; green central banking

JEL: E52; E58

1. Introduction

Central banks (CBs) are essential to the transition to a net-zero carbon economy for several key reasons. While acknowledging that governments bear the primary responsibility for addressing climate change, the European Central Bank (ECB) has identified three key objectives through which CBs can contribute to the transition². First, CBs can play a role in managing the financial risks associated with climate change. CBs can play a vital role in channelling financial resources to support the shift towards a net-zero economy. The European Commission (EC), for instance, projects that Europe will require an additional EUR 350 billion annually in energy sector investments to meet its target of 55% emissions reduction by 2030, as outlined in the „Fit for 55“ package. Mobilizing these funds will be essential, with the financial sector anticipated to take on a key role in this effort. Additionally, CBs can utilize their knowledge to promote broader changes in behaviour. They can conduct research and disseminate best practices to increase awareness of the significance of climate change in the context of central banking operations. Additionally, integrating climate change considerations into their organizational frameworks allows CBs to lead by example. Initiatives undertaken by CBs in response to these activities are known as „green central banking“. Through the concept of green central banking, CBs can address the challenges posed by climate change.

2. Literature Review

Policymakers, regulators, academics, and CBs increasingly recognize climate change's impact on the financial sector, prompting discussions on financial stability and resilience strategies (Bobeve et al., 2023). Green central banking, as defined by Dikau and Volz, 2019, integrates environmental risks to support sector stability in the short and long term.

Studies highlight the need for CBs to address climate risks that can destabilize the financial system (Bernardini et al., 2021). Pfister and Valla (2021) highlight the importance of integrating sustainability into monetary policy, while Apergis (2023) examines the impact of natural disasters on U.S. financial stability. D'Orazio et al. (2023) show how climate risks lead to financial instability and Brunetti et al. (2021) note that such risks can act as shocks or amplify

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² <https://www.ecb.europa.eu/ecb/climate/html/index.en.html>.

others. Fabris (2020) points to regulators' limited understanding of these risks. The NGFS³ (2018) calls for new analytical methods, and Dikau and Volz (2021) argue that CBs should integrate climate risks into core policies, even without explicit sustainability goals.

The conclusion is that addressing climate risks is crucial for the financial sector, especially for CBs. However, the literature is fragmented in how CBs' roles are approached. Some studies focus on adjusting monetary policy to tackle climate change (Campiglio, 2016; NGFS, 2021, 2022a; Volz, 2017), while others explore supervisory strategies for financial stability (Basel Committee, 2021a,b,c, 2022; NGFS, 2020). Additionally, some examine regulatory processes to enhance financial stability by considering climate impacts (Campiglio et al., 2018; da Silva, 2019; NGFS, 2022b).

3. Areas of Activity of the Central Bank in the Context of „Green Banking”

The Paris Agreement (PA) of 2015⁴ represents a major global commitment to tackle climate change. Its goal is to limit the rise in average global temperatures to well below 2°C above pre-industrial levels, with an aim to restrict it to 1.5°C. In the aftermath, various governments have launched national initiatives, such as the European Green Deal⁵ and the Build Back Better⁶ framework in the United States, to align their efforts with the goals of the PA. In December 2017, the Bank of England, along with seven other CBs and supervisory authorities, founded the Network for Greening the Financial System (NGFS). The NGFS is focused on improving the management of environmental and climate risks within the financial sector while mobilizing the necessary financing to support the transition to a sustainable economy. As of 29.05.2024, 141 institutions (including the ECB) are members of the NGFS⁷. In July 2021, the ECB introduced a comprehensive Climate and Nature Plan⁸ along with a detailed Action Roadmap⁹ outlining measures to integrate climate considerations into its operations and climate-related activities. The climate-related initiatives of ECB outlined in its Climate and Nature Plan cover four key areas.

Implementation of Monetary Policy

The NGFS report identifies three action areas: credit operations, collateral eligibility, and asset purchases. CBs can promote green financing by lowering rates for banks supporting eco-friendly firms and raising them for carbon-intensive ones. Adjusted collateral criteria and asset purchases can favour green bonds and exclude carbon-intensive assets.

The ECB's Climate and Nature Plan seeks to embed climate risks in credit assessments. With current rating practices lacking transparency, the plan may restrict carbon-heavy assets as collateral, promoting green investments and excluding bonds from firms without credible transition plans. Critics warn this „green tilt“ could affect market neutrality and price stability.

³ <https://www.ngfs.net/en>.

⁴ <https://www.un.org/en/climatechange/paris-agreement>.

⁵ https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en.

⁶ <https://www.whitehouse.gov/build-back-better/>.

⁷ Bulgarian National Bank is not yet a member of the network.

⁸ https://www.ecb.europa.eu/ecb/climate/our-climate-and-nature-plan/shared/pdf/ecb.climate_nature_plan_2024-2025.el.pdf.

⁹ https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1_annex~f84ab35968.en.pdf.

Banking Supervision and Financial Stability

Prudential regulation manages risks via macroprudential and microprudential supervision. The NGFS recommends integrating climate risks through stress tests and disclosure, guided by the Task Force on Climate-related Financial Disclosures (TCFD)¹⁰. Stricter capital requirements are advised for climate-exposed firms, though Basel III standards haven't been updated due to data gaps. In 2022, the Basel Committee issued principles for climate risk management. The ECB's 2021 climate stress test showed Southern Europe is vulnerable to heat stress and wildfires, while Northern and Central Europe face flood risks. A 2022 test found 60% of banks lack a climate risk framework, 20% factor climate into lending, and many are exposed to high-emission sectors. A July 2022 ECB and European Systemic Risk Board (ESRB)¹¹ report warns that an abrupt green transition could disrupt markets, with potential losses of up to 3% for insurers and 25% for funds if carbon prices spike. It calls for macroprudential policies to mitigate these risks. European green bonds, guided by the EU Green Bonds Regulation, aid the green transition and market stability. Although outside the ECB's Action Plan, they support initiatives like the Corporate Sector Purchase Programme, with „greenium“ bonds showing a 0.04% drop in yields since the plan's launch.

Climate-Related Data and Data Modelling

Data and modelling are crucial for CBs, but climate factors are still missing in economic models. The NGFS urges global data and disclosure standards for reliability. The TCFD suggests CBs expand models to include climate policies and regional differences. In the short term, combining climate and macroeconomic models is recommended, with full integration of climate variables over time. The ECB plans to create climate-related indicators on institutions' risk exposure, portfolio carbon footprints, and green bonds to better incorporate climate risks into its models and forecasts.

Corporate sustainability in central banks – leading by example

CBs support a sustainable economy by integrating climate factors into operations, setting an example by following NGFS guidelines, creating sustainability departments, and joining international climate resilience efforts. In 2021, the Eurosystem unified its sustainable investment approach, emphasizing climate risk disclosure. In 2022, the ECB launched benchmarks to reduce its pension fund's carbon emissions by 50% and raised green bonds in its portfolio to 7.6%. The ECB's Climate Change Centre¹² coordinates climate efforts, reporting directly to the president.

4. Scoring

Based on a comprehensive literature review, expert consultations, and direct interactions with central bankers and supervisory authorities, the organizations Positive Money¹³ and Green Central Banking¹⁴ have developed the so-called Green Central Banking Scorecard¹⁵. This

¹⁰ <https://www.fsb-tcfd.org/>.

¹¹ <https://www.esrb.europa.eu/home/html/index.en.html>.

¹² <https://www.climatecentral.org/>.

¹³ <https://positivemoney.org/>.

¹⁴ <https://greencentralbanking.com/>.

¹⁵ <https://www.datocms-assets.com/132494/1727190489-green-central-banking-scorecard-report-2024.pdf>.

scorecard evaluates and ranks the environmental initiatives and policies adopted by CBs in G-20 countries across four established areas: research and advocacy, monetary policy, financial policy, and leadership by example. The European Union is a full-fledged member of the G-20, along with three of its member states: France, Germany, and Italy. The results of the assessments for 2021, 2022, and 2024 are presented in Table 1 and Table 2.

Table 1 EU countries ranked by green monetary and financial policies, 2024

Rank	Country	Categories				Total Score 2024 (max 130)	Grade 2024 (max A+/ min F)
		Research & Advocacy (max 10)	Monetary Policy (max 50)	Financial Policy (max 50)	Leading by Example (max 20)		
1 (1)	France	10	23	47	16	96	B+
2 (3)	Germany	10	28	45	10	93	B+
3 (2)	Italy	10	23	48	10	91	B+
4 (4)	European union	10	23	44	10	87	B
10 (12)	India	5	5	13	7	30	D+
20 (20)	Saudi Arabia	1	0	0	0	1	F

Source: The Green Central Banking Scorecard 2024.

Table 2 Comparison of scorecard rankings of EU countries in 2021, 2022 and 2024

Rank	Country	Total Score 2024 (max 130)	Grade 2024 (max A+/ min F)	Total Score 2022 (max 130)	Grade 2022 (max A+/ min F)	Total Score 2021 (max 130)	Grade 2021 (max A+/ min F)
1 (1)	France	96	B+	70	B-	43	C-
2 (3)	Germany	93	B+	60	C+	31	D+
3 (2)	Italy	91	B+	61	C+	29	D
4 (4)	European union	87	B	58	C	33	D+
10 (12)	India	30	D+	21	D	9	F
20 (20)	Saudi Arabia	1	F	0	F	0	F

Source: The Green Central Banking Scorecard 2021, 2022, 2024.

Results

Tables 1 and 2 show that France, Germany, and Italy occupy the top three spots in the rankings, with the EU in fourth place. France leads in 2022, up from third in 2021, with a score slightly higher than Germany and Italy, all receiving a B+. Germany saw the largest increase, raising its score by 33 points, surpassing Italy, which improved by 30 points. France's growth of 26 points was smaller, with its high score largely due to aligning non-monetary portfolios with the 1.5°C global warming target and excluding fossil fuels.

The high scores of France, Germany and Italy are largely due to progress at the EU level, particularly through initiatives by the ECB and, to a lesser extent, the European Banking Authority (EBA)¹⁶. The ECB has aligned corporate bonds with the PA, conducted climate stress tests, and required financial institutions to integrate environmental risks into their risk management by 2024. The ECB has also set climate-related restrictions on banks' portfolios and mandated disclosure of transition plans. These efforts have helped the EU achieve a collective score of B, with the ECB's commitment to limiting carbon-intensive assets and decarbonizing its own portfolio contributing to its high ranking.

Recommendations

Following the assessments and based on the results obtained in the Scorecard, specific recommendations have been directed towards CBs and supervisory authorities to help them overcome barriers to progress and transition towards more environmentally friendly central banking. The recommendations are organized according to the adopted scoring categories.

¹⁶ <https://www.eba.europa.eu/homepage>.

Research and Advocacy

- Broadening environmental focus to include biodiversity loss and water scarcity (Branzova, Dimitrova, 2023).
- Using a precautionary approach to manage environmental risks through prevention and long-term analysis.
- Applying a dual materiality framework to assess financial institutions' environmental impacts and exposure to risks.
- Recognizing high-emission countries' climate „debt“ to the Global South, which is most affected by climate change (Peneva, 2019).

Monetary Policy

- Tackling „climateflation“ (climate-related inflation).
- Providing green discount rates to make sustainable lending more appealing and boost renewable investments.
- Enhancing green asset and collateral programs by prioritizing eco-friendly assets and limiting support for carbon-intensive ones.
- Collaborating with governments to fund green initiatives and align efforts toward environmental and social goals.

Financial Policy

- Raising capital requirements by increasing risk weights for fossil fuels and adding buffers for environmental risks.
- Restricting lending to climate-disruptive industries like fossil fuel production.
- Requiring mandatory disclosure of transition plans with clear timelines and targets, ensuring accountability through regular assessments to support global climate goals.

Leading by Example

- Creating sustainable taxonomies to identify harmful assets, with input from CBs, regulators, and the public.
- Aligning non-monetary portfolios with the PA by excluding assets linked to new fossil fuel projects.
- Involving citizens and civil society to help CBs understand the real impacts of their decisions and gather diverse views on environmental issues.

5. Conclusion

Green central banking is a new concept making progress in addressing climate challenges. Climate stress tests and disclosure requirements can help close data gaps and improve decision-making. As data availability grows, it will be intriguing to observe how methodologies adapt to incorporate these advancements. Many initiatives, including those from the ECB, are still in

the early stages and require further development. The future of green central banking will hinge on how these initiatives are refined and put into practice. While inflation concerns dominated discussions in 2022, CBs' effectiveness in climate policy will depend on maintaining price stability. Adapting to this uncertainty will require adjustments to monetary policy frameworks, alongside calls for fiscal responses to mitigate supply shocks. Initial funding and accelerated public investments in green infrastructure and technologies will be vital.

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SOCIAL AND ECONOMIC EFFECTS OF BULGARIA'S EUROPEAN UNION MEMBERSHIP

Abstract: *The aim of the paper is to examine whether the expected social and economic effects of Bulgaria's accession to the European Union will be transformed into real macroeconomic effects through Bulgaria's full membership in the European Union. The results of the implemented research show that macroeconomic expectations diverge from the macroeconomic effects of Bulgaria's membership in the European Union.*

Keywords: *economic effects; social effects; European Union*

JEL: *E61; E66*

1. Introduction

The European Union and membership of the European Community is referred to by Rifkin as the 'European Dream' (Rifkin, 2004, p. 14), which is associated with sustainable economic development and social welfare (Rifkin, 2004, p. 14). It is this European dream that becomes the main political objective of the Bulgarian authorities. In the late 1980s and early 1990s, Bulgaria was confronted with the historical watershed of the emerging 'European dream' and the fading 'Eastern hope'. As a result, accession to the European Union became a major political goal, linked to expectations of an increase in the quality and standard of life for Bulgarian citizens. EU accession is associated with increased economic growth, higher incomes and welfare for Bulgarian citizens, and a reduction in poverty. The main objective of the paper is to examine whether the social and economic effects of Bulgaria's EU membership are in line with the initial expectations of increasing GDP and reducing inequality and poverty. The objective is achieved through comparative, descriptive and dynamic regression analysis. The impact of Bulgaria's membership on social and economic effects is measured by EU funds and FDI. The main hypothesis is that the expectations of Bulgaria's EU membership diverge from the actual effects of Bulgaria's EU membership.

2. Literary Review

Bulgaria's accession to the European Union has raised expectations in society regarding the improvement of living standards and quality of life. Expectations are that membership in the European Union will solve domestic social and economic problems (Mantarova, 2008, p. 8) and that the country's economic backwardness will be overcome (Dinkov, 2019). According to Nikolov (2008), membership in the European Union is a decisive factor in public perception, which will lead to a rethinking of the fiscal model and tax system, stimulate the construction of infrastructure, create conditions for the formation of a normal structure of the Bulgarian economy and reduce social and educational differentiation in Bulgarian society (Nikolov, 2008, pp. 292-300). Yordanova (2008) adds to this line of reasoning by pointing out that the control that the European Union exerts over the economy and politics will lead to the solution of social problems and the increase in economic growth (Yordanova, 2008, p. 22). Rangelova (2008) argues that joining the European Union will lead to structural changes in the economy that will

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adapt it to the international market (Rangelova, 2008, p. 66). The restructuring of the economy is an objective process of integration of the Bulgarian economy into the economy of the European Union (Rangelova, 2013). Restructuring is associated with the growth of financial and communication services and the decline of the manufacturing sector (Rangelova, 2013, pp. 134-135). Imeri and Dutta (2016) point out that the economic effects of Bulgaria's integration into the European Union are an increase in exports of goods, an increase in foreign direct investment and an increase in GDP per capita. Unemployment has also fallen. However, the authors emphasise that the risk of poverty has increased (Imeri, Dutta, 2016, p. 15). Nikolov and Simeonov (2009), like Imeri and Dutta, point out that GDP and FDI increased after Bulgaria's accession to the European Union. Imeri and Dutta (2016, p. 10), Damyanova et al. (2011), and Durova (2022) point out that EU funds stimulate the development of the Bulgarian economy. However, Durova (2022) points out that in the long run, EU funds have no impact on Bulgaria's economic growth (Durova, 2022, p. 37). The question therefore arises as to why EU funds do not have a long-term effect on Bulgaria's economic growth. The answer to this question logically leads to corruption. However, Todorov (2023) rejects the thesis that corruption affects the absorption of EU funds (Todorov, 2023, p. 23).

Tomov (2019) points out that after Bulgaria's accession to the European Union, Bulgaria's real GDP lagged behind the euro area countries (Tomov, 2019, pp. 125-126). Minasian defends a similar thesis, arguing that „Bulgaria is in the last position in the EU“ (Minasian, 2024, p. 203). The backwardness in the European Union began with the financial crisis of 2008-2009, and a manifestation of this backwardness is the slowdown in economic growth and the increase in unemployment (Ganchev, 2019, p. 39). In this line of reasoning, the logic that membership in the European Union does not necessarily mean an improvement in the economic and social conditions of the country in question stands out clearly. Rangelova and Sariiski (2019) argue that Bulgaria and Romania, as full members of the European Union, developed along different paths and therefore achieved different results despite starting from the same economic and social conditions (Rangelova, Sariiski, 2019). These findings by Rangelova and Sariiski show that the European Union creates certain conditions for the economic and social development of the respective countries, but the development itself is the work of the governing authorities of each country. The authors also point out that inequality in Bulgaria is increasing under the conditions of membership in the European Union as a result of the unequal distribution of national income (Rangelova, Sariiski, 2019, p. 36).

3. Research Methodology

The research methodology includes comparative analysis, descriptive approach and sliding regression. Authors such as Minasian (Minasian, 2024) and Rangelova and Sariiski (Rangelova, Sariiski, 2019) use a comparative approach to analyse the macroeconomic development of Bulgaria. The comparison is with Romania because both countries joined the EU at the same time and have similar macroeconomic indicators. Sliding regression is used to answer the question of why the discrepant trends are realised. Sliding regression is described by the following equation:

$$\begin{aligned} Y &= \alpha + \beta_1 x_t + \beta_2 x_{t-1} + \beta_3 x_{t-2} + \dots + \beta_n x_{t-n} + \varepsilon \\ Y &= \alpha + \beta_1 x + \beta_2 x_{t-1} + \varepsilon \\ Y &= \alpha + \beta_3 x_{t-2} + \beta_4 x_{t-3} + \varepsilon \\ Y &= \alpha + \beta_5 x_{t-4} + \beta_n x_{t-n} + \varepsilon \end{aligned} \tag{1}$$

Where: „Y“ is the dependent variable, α is the regression term, „ β “ is the regression coefficient, „x“ is the independent variable, and „ ε “ are the residuals. The econometric model has the following mathematical notation:

$$VY = \alpha + \beta_1 VEF + \beta_2 VDFI + \beta_3 V\text{CORP} + \varepsilon \quad (2)$$

Where: „Y“ is economic growth; „DFI“ is foreign direct investment; „EF“ is EU funds; „CORP“ is corruption; „V“ is the dynamics of the variables expressed in the first difference. Equation (2) must satisfy the following conditions (Enders, 2015):

$$E(y_t) = E(y_{t-s}) = \mu \quad (3)$$

$$E[(y_t - \mu)^2] = E[(y_{t-s} - \mu)^2] = \sigma_y^2 \quad (4)$$

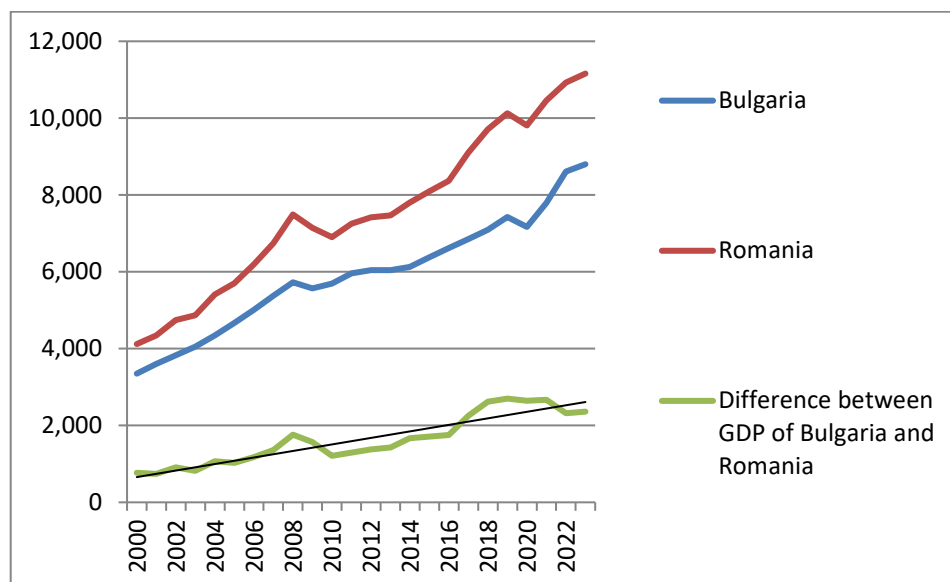
$$E[(y_t - \mu)(y_{t-s} - \mu)] = E[(y_{t-j} - \mu)(y_{t-j-s} - \mu)] = y_s \quad (5)$$

Where : μ are the residues, σ_y^2 the dispersion of the residues, and y_s is the dynamic order.

4. Results of the Study

Bulgaria's real GDP per capita is significantly lower than that of Romania. The gap between Bulgaria's real GDP per capita and Romania's real GDP per capita has been widening since Bulgaria became a full member of the European Union (Figure 1). In the period 2000-2006, Bulgaria's economic growth averaged 5.7 per cent, while Romania's average economic growth over the same period was 5.5 per cent. On average, the Bulgarian economy grew faster than the Romanian economy in the period 2000-2006. However, this trend has been reversed since Bulgaria and Romania joined the EU (Figure 2).

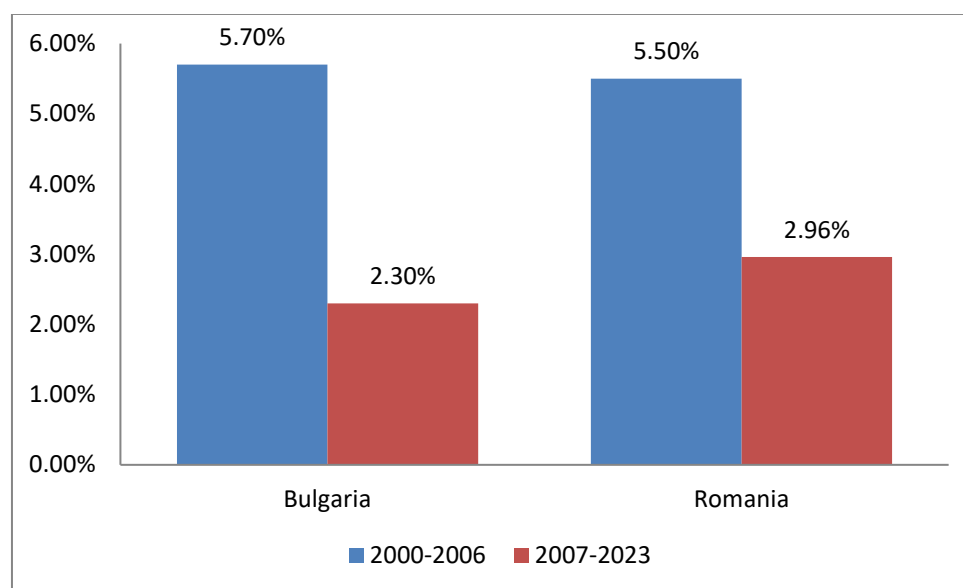
Figure 1. Real GDP per capita in euro



Source: Eurostat, author's calculations.

The period of Bulgaria and Romania's accession to the EU until 2023 is characterised by an average decline in economic growth in both countries compared to the previous period 2000-2006 (Figure 2). Therefore, EU accession does not necessarily lead to an increase in economic growth in the medium and long term.

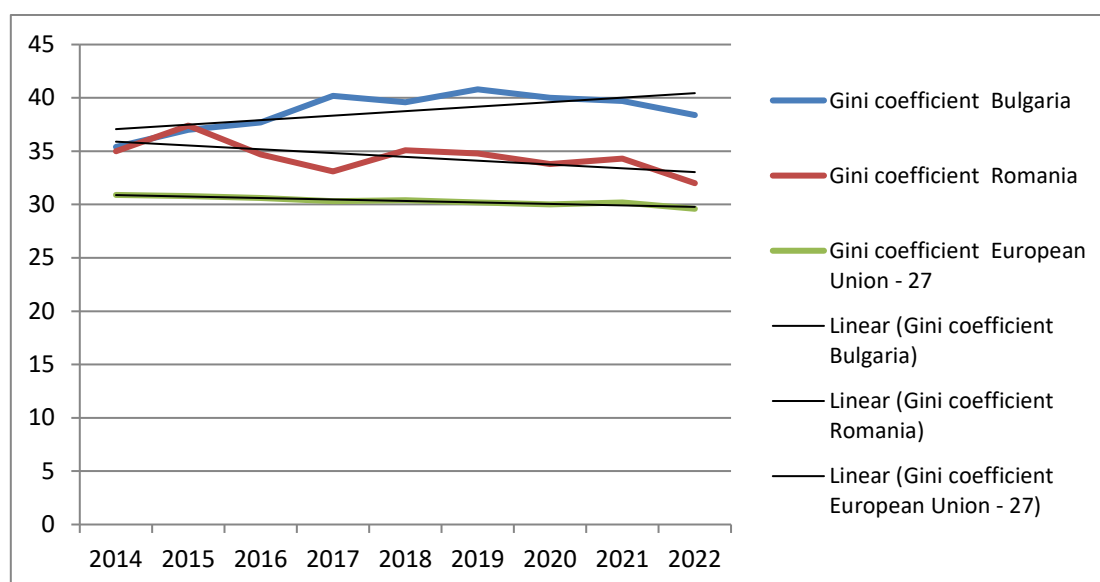
Figure 2. GDP volume



Source: Eurostat, author's calculations.

Bulgaria's EU membership does not lead to a reduction in inequality. Between 2014 and 2020, the inequality in Bulgaria increased and in 2019 the inequality between the lowest and highest incomes was the highest for the whole period 2014-2023. Bulgaria has high inequality compared to Romania and much higher inequality than the EU average. The trend of inequality in Romania and the EU is characterised by a decreasing trend, while in Bulgaria inequality is rising (Figure 3).

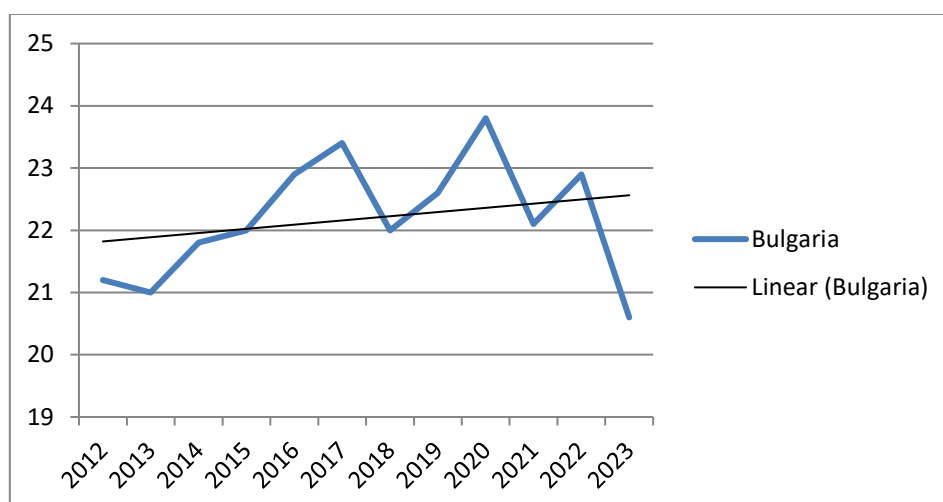
Figure 3. Gini coefficient of equivalised disposable income



Source: Eurostat.

Rising inequality and declining economic growth in Bulgaria create the conditions for an increasing risk of poverty. The trend in poverty risk in Bulgaria is upward (Figure 4).

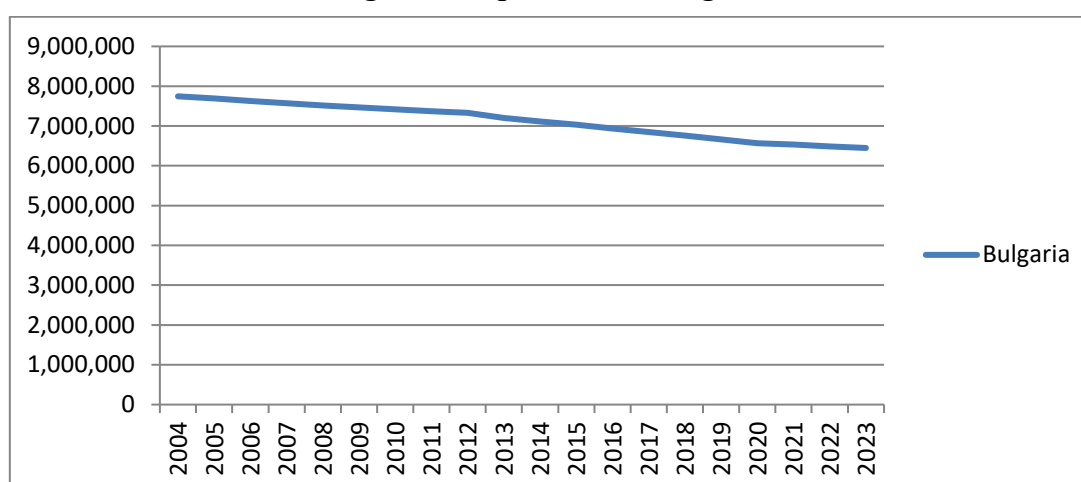
Figure 4. Risk of poverty



Source: Eurostat.

Economic and social effects such as declining average economic growth, rising inequality and the risk of poverty naturally reinforce negative demographic trends. Bulgaria's population is steadily declining and its age structure is changing (Figure 5).

Figure 5. Population in Bulgaria

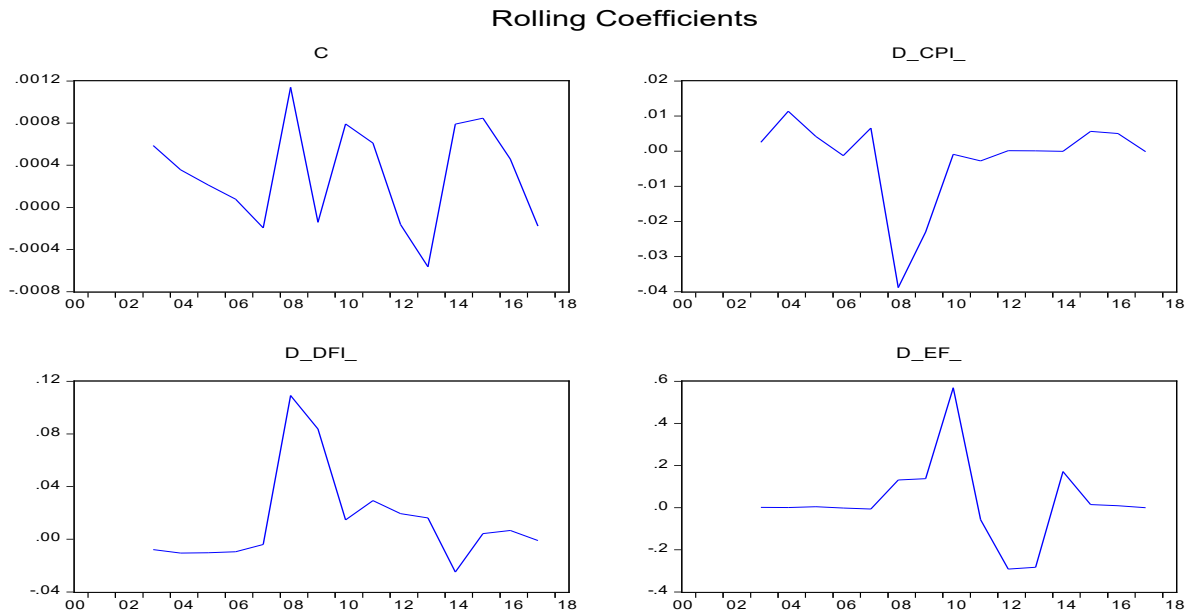


Source: Eurostat.

The economic and social impact on the Bulgarian economy after Bulgaria's accession to the EU is determined by the EU funds that finance the restructuring of the economy and the social development of the Bulgarian economy. Apart from EU funds, other important determinants are FDI and corruption. FDI is neutrally negative with a sliding coefficient ranging from (-0.025) to (-0.001) (Figure 6), illustrating that its contribution to economic growth is neutral with a tendency towards a negative effect. This effect of FDI is due to the fact that investors who invested in the Bulgarian economy at the beginning of the period do not continue to reinvest afterwards, but only recapitalise profits and withdraw fixed assets from the Bulgarian economy. The dynamic coefficient of EU funds in the period before Bulgaria's accession to the EU has a value of 0. In the period 2008-2010, the glide coefficient of EU funds has values ranging from 0.13 to 0.57. In the following period, the values range from (-0.28) to 0.17 (Figure 6). The variation in the glide coefficient of EU funds illustrates a small and variable effect of

EU funds on economic growth. This low and variable effect is a consequence of the distorted economic and institutional environment in which the corruption process is realised. The sliding coefficient of corruption ranges from (-0.039) to 0.011 (Figure 6). It is clear that the variation of the corruption coefficient, which has negatively neutral values, indicates that corruption increases over time and hinders economic growth and the absorption of EU funds, as well as having a negative effect on attracting FDI.

Figure 6: Impact of FDI, corruption and EU funds on GDP



*C- constant; D_CPI – corruption; D_DFI – foreign direct investment; D_EF- EU funds
Source: author's calculations.*

Conclusions

The main conclusion is that living standards and quality of life, as measured by GDP per capita, inequality and the risk of poverty, have not improved significantly. This is evidenced by the decline in Bulgaria's population. There are negative economic and social trends, even though Bulgaria is a full member of the EU. Economic growth is faltering and its averages are declining compared to the averages before EU accession. Inequality in Bulgaria is the highest in the EU, and the trend is worsening. The risk of poverty is on the rise. This raises the question of why Bulgaria's EU membership has not contributed to a tangible increase in GDP, a reduction in inequality and poverty, and a curbing of the negative demographic trend. The answer lies in the inefficient use of EU funds, the inability to increase foreign direct investment and growing corruption. These conclusions are confirmed by a comparison with Romania, which had similar macroeconomic indicators to Bulgaria before its accession to the EU, but since joining the EU Romania has developed more efficiently and positively than Bulgaria, which shows that the EU provides development guidelines and supports development with funding from EU funds, but the country's development remains mainly in the hands of the ruling authorities. Therefore, the expected economic and social effects of Bulgaria's accession to the EU and the actual effects once Bulgaria is a member of the EU are different, as optimistic attitudes clash with negative economic and social reality.

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ANALYSIS OF THE EFFICIENCY OF THE LABOUR MARKET IN BULGARIA IN THE PERIOD AFTER THE ACCESSION TO THE EUROPEAN UNION ACCORDING TO THE BEVERIDGE CURVE

Abstract: *This paper examines the dynamics of the Beveridge curve in Bulgaria since its accession to the European Union in 2007. The study reveals an atypical pattern compared to that of developed economies. While the period between 2009 and 2020 showed a highly elastic Beveridge curve, suggesting a more efficient labour market matching process, from 2022 onwards, a contradictory trend emerged. Both unemployment and job vacancy rates rise simultaneously, contradicting traditional arguments in favour of inverse dependence. The present study finds that this phenomenon is a consequence of a decline in the efficiency of the matching process between available labour and vacancies in the Bulgarian labour market. Factors contributing to this decline most likely include a skills mismatch between job seekers and available positions, geographic disparities leading to migration and emigration of the working-age population, and potential deficiencies in education and employment promotion policies.*

Keywords: *labour market; unemployment; job vacancies; effectiveness; beverage curve*

JEL: *J21; J23; J29*

1. Introduction

Over the first twelve years after its accession to the EU, the labour market in Bulgaria has demonstrated characteristics that coincide with those of labour market surveys in other EU member countries (OECD, 2022). This essentially speaks of a growing similarity in the structure of these economies and synchronization of business cycles and should be taken because of the fundamental idea of free movement of people within the Union (Kolev, Tsoklina, 2023). However, in the following years, there is a discrepancy between the trend of development of the labour market in the core economies in the Union and that in Bulgaria. Here we will define construct and analyse the Beveridge curve for the Bulgarian labour market with the aim to shed more light on the intensity of the matching process and its progress.

2. Literature Review

The transition of the Bulgarian economy to a working market system had a significant impact on the structure of the labour market and the mechanisms of its functioning, which in turn shaped the current structure of the economy. There are many similarities between labour market transitions in the countries of the former Eastern Bloc (Lehmann, Kluve, 2010). This makes it possible to draw an analogy with the experience of these countries, especially when the data specific to Bulgaria is limited. For example, a study of the Romanian labour market, which has many similarities with the Bulgarian one, suggests that labour market reform and changes in human capital management models have developed unevenly, lagging behind the needs of the modern economic and social environment (Chiriac, Cornescu, 2015). This could be a plausible explanation for the reluctance of investors to commit to investments, as seen in the declining numbers of the chain-linked volume of gross fixed capital formation (2010 = 100), which fell from almost 121 in 2007 to 112 in 2007. 2023 (Eurostat, 2024). The accession of Bulgaria to

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the European Union marks a key moment in the structure of the labour market and the economy. The principle of free movement of people, as enshrined in the EU Treaty, allowed intensive migration of workers and led to a shift of the labour supply curve to the left. A significant observation in the statistical data is the decrease in the Bulgarian population between the ages of 15 and 64 that completed high school and higher education from 2,713,000 in 2009 to 2,550,000 in 2023 (Eurostat, 2024). This raises the question of how efficient the labour market is so that negative trends in population growth are at least partially offset by increases in labour productivity.

One of the most widely used methods of assessing labour market efficiency is through analysis of the Beveridge curve, which graphically represents the inverse relationship between the unemployment rate and the vacancy rate. It demonstrates the balance between labour supply and demand by showing the relationship between vacancies and unemployment (Blanchard et al., 1989). The movement along the curve represents market tightness, and its shift is due to a change in the efficiency of the labour market, that is, the intensity of competition for available jobs. The mechanism of moving along or shifting the curve is simple. If the demand for labour increases, we can expect an increase in vacancies and a decrease in unemployment, that is, the two variables will change in different directions. In this case, we would see movement along the curve as market pressures increase and we can expect real labour costs to rise (Brigden, Thomas, 2003). The opposite will be true with a drop in market pressure, which translates into fewer job vacancies and a higher unemployment rate. We can expect that the increase in market tension will reach a critical point where it will act as a shock to national income, changing the ratio of returns of the factors of production – the return to labour will become disproportionately high compared to the income from the other main factor of production – capital. This will reduce the level of real investment and thus affect the investment/aggregate output ratio (Kaldor, 1955). That is, the increase in market tension will lead to a situation in which both variables will change in the same direction – the process of reducing the unemployment rate and increasing real wages will lead to a decrease in real investments, respectively a decrease in the number of vacancies, because at that moment the variation of both indicators will have the same direction, or at least we will observe the same values of one indicator with changing values of the other, which means that we will observe a shift of the curve. The existence of such a phenomenon can be explained by changes in the efficiency of the labour market, that is, in the possibility for each worker to find a suitable workplace where he can produce maximum added value according to his competencies. Or, the efficiency of the labour market depends on the simultaneous availability of both appropriate competencies and jobs providing conditions for the generation of high-added value in the use of these competencies.

3. Methodology

The main objective of this research is to analyse the efficiency of the labour market in Bulgaria in the period after the accession to the EU using the Beveridge curve. The need for such research is the reason for publishing regular statistics on the unemployment rate and the percentage of vacant jobs. A comprehensive study of data for the five largest countries in the Eurozone: Germany, France, Italy, Spain and the Netherlands shows that the dynamics of the Beveridge curve are not identical across countries, but aggregated data for the five countries shows a rightward and upward shift of the curve after 2011, that is, in the period following the recession caused by the 2008 financial crisis (Consolo, Dias da Silva, 2019). The authors explain this shift of the curve with a decrease in the efficiency of the labour market, expressed as a decrease in the efficiency of matching the competencies of job seekers and job offers (matching efficiency) measured as the elasticity between vacancies and the unemployment rate. The

observed lower efficiency of the matching process is due to the increasing heterogeneity of the unemployed labour force (the different probability of unemployed people differentiated by skill level to find and keep a job) and the segmentation of labour markets in different countries. They conclude that declining labour market efficiency caused by declining matching efficiency combined with cyclical factors such as low inflation explains the hold-up in real wage growth in these countries over the past decade. Judging by both the country-specific and aggregated data presented in the study, we can draw the conclusion that there is a steady trend towards increasing market tightness, expressed as an increase in job vacancies and a decrease in unemployment (movement along the curve). It seems that this is not a precedent, since an increase in market tightness in the member states of the European Union is also reported in the period of economic growth slowdown after the pandemic and the war in Ukraine. According to the autumn economic forecast for 2023 of the Directorate General for Economic and Financial Affairs of the European Commission (European Commission. Directorate General for Economic and Financial Affairs, 2023), the aggregated data points to an increase in job vacancies combined with a low level of unemployment. The main takeaway from the study is that there is an increase in labour demand, not a decrease in supply, as the workforce has exceeded its pre-pandemic level, but the number of job vacancies has increased by more. The logical explanation for this observation is that in conditions of higher inflation, the real wages decrease, therefore labour productivity increases, and thus corporate profits increase. The situation will change when real wages start to grow because of low liquidity in the labour market, which will reduce the rate of profit, enabling employers to give up the previous practice of hoarding labour.

The present study is as follows: First, we will establish what the working model for the labour market in Bulgaria is, namely whether the labour market behaves according to the general assumptions of the Beveridge curve. Next, we will analyse the trend of the Beveridge curve from the time of Bulgaria's accession to the EU until today.

4. Results

First, we found that vacancy data for Bulgaria exists from 2009 onwards, so this places the starting point of the econometric study at the beginning of 2009. The data for the two variables for Bulgaria are as follows:

Table 1

	2009-Q1	2009-Q2	2009-Q3	2009-Q4	2010-Q1	2010-Q2	2010-Q3	2010-Q4	2011-Q1	2011-Q2	2011-Q3	2011-Q4	2012-Q1	2012-Q2	2012-Q3	2012-Q4	2013-Q1	2013-Q2	2013-Q3	2013-Q4	2014-Q1	2014-Q2	2014-Q3	2014-Q4	2015-Q1	2015-Q2	2015-Q3	2015-Q4	2016-Q1	2016-Q2	2016-Q3	2016-Q4
Нормен на безработица	8.0	5.0	6.7	8.0	10.3	10.1	9.6	11.4	12.3	11.3	10.3	11.5	13.0	12.4	11.6	12.5	13.8	13.0	12.1	13.2	13.1	11.5	10.8	10.7	10.7	10.0	8.3	8.0	8.7	8.2	7.1	6.7
Процент свободни работни места	0.8	0.7	0.7	0.7	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.9	0.7	0.7	0.6	0.8	0.6	0.6	0.7	0.8	0.7	0.6	0.7	0.9	0.8	0.7	0.7	1.0	0.8	0.8	0.8
	2017-Q1	2017-Q2	2017-Q3	2017-Q4	2018-Q1	2018-Q2	2018-Q3	2018-Q4	2019-Q1	2019-Q2	2019-Q3	2019-Q4	2020-Q1	2020-Q2	2020-Q3	2020-Q4	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024-Q1	2024-Q2		
Нормен на безработица	7.0	6.4	5.9	5.7	5.8	5.5	5.0	4.7	5.0	4.1	3.6	4.1	4.5	5.9	4.8	5.2	6.3	5.6	4.6	4.5	4.8	4.6	3.6	3.8	4.5	4.7	4.1	4.3	5.1	4.3		
Процент свободни работни места	0.9	0.8	0.8	0.8	1.0	0.9	0.9	0.9	1.0	0.9	0.8	0.8	0.7	0.8	0.8	0.7	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.7	0.8	0.8		

Source: Eurostat, databases [lfsq_urban] and [jvs_q_nace2], last accessed on 10th Oct 2024.

Autocorrelation and ADF statistical tests show that the data for both variables are non-stationary, which is consistent with what studies of data for the US (Ball et al., 2022) and German (Sell, Stiefl, 2024) labour markets have shown. This allows us to use the approach of

these studies to deal with non-stationarity and heteroscedasticity of the data, namely, to apply a log-log regression model:

$$\ln(v) = \beta_0 - \beta_1 \ln(u) + \varepsilon$$

The results show that in the case of Bulgaria this model has no explanatory power:

Table 2

Dependent Variable: LOG(VACBG)				
Method: Least Squares				
Date: 10/14/24 Time: 14:15				
Sample (adjusted): 2009Q3 2024Q2				
Included observations: 56 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.031583	0.070934	0.445249	0.6580
LOG(UNEMBG(-1))	-0.003835	0.106453	-0.036024	0.9714
LOG(UNEMBG(-2))	-0.137580	0.107760	-1.276728	0.2073
R-squared	0.231604	Mean dependent var	-0.244001	
Adjusted R-squared	0.202608	S.D. dependent var	0.122773	
S.E. of regression	0.109632	Akaike info criterion	-1.531291	
Sum squared resid	0.637017	Schwarz criterion	-1.422790	
Log likelihood	45.87615	Hannan-Quinn criter.	-1.489226	
F-statistic	7.987428	Durbin-Watson stat	1.589136	
Prob(F-statistic)	0.000929			

Such a result is expected, given the fact that graphically the vacancy rate is almost constant throughout the period, while the unemployment rate has a downward trend:

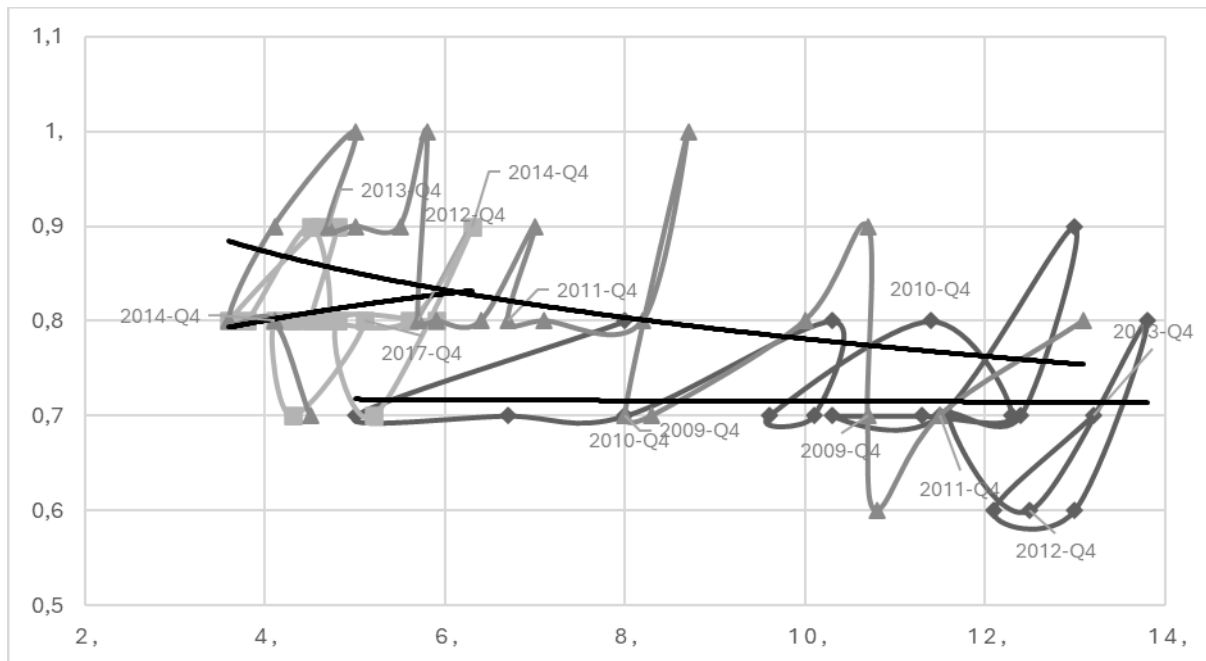
Figure 1. Graphic representation of data from Eurostat



Source: Eurostat.

The graph of the unemployment rate shows three distinctly different periods, the first is the upward trend until the beginning of 2014, the second is the downward trend that ends around the beginning of the pandemic, and the third is the change in trend after the beginning of the pandemic. This approach, the division of the studied period into three parts, was carried over to the compilation of the Beveridge curve:

Figure 2. Beveridge curves for the three periods based on Eurostat data



Source: Authors calculations.

The result is a very elastic Beveridge curve in the period between 2009 and the end of 2013, a period associated with the recession that followed the Financial Crisis. The second period is analogous to the shift observed in the five largest economies in the eurozone. (Consolo, Dias da Silva, 2019) noted an economic boom until the start of the pandemic. The third period is characterized by the fact that in the third period, that is from the beginning of 2020 onwards, the trend, the logarithmic line describing the relationship between the vacancy rate and the unemployment rate, changes its sign, and has a positive slope. Such a result is unusual compared to both the theoretical model (Blanchard et al., 1989) and the empirical results for some of the well-studied economies in terms of Beveridge curve shifts: the EU, Germany (Sell, Stiefl, 2024) or USA (Barlevy et al., 2024). There is no easy explanation for why labour statistics for Bulgaria show such heterogeneity. We must rule out a priori the argument of poor data quality, given that national statistics follows Eurostat guidelines designed to ensure the reliability of statistical data (Petranov et al. 2022). One functional explanation for the observed movement of the two variables in the same direction is the worsening of the efficiency of the matching process between vacancies and available workers (Parai, Pissarides, 1991). The decrease in matching efficiency can be attributed to several factors such as a mismatch between the skills of job seekers and the requirements of job vacancies (Acemoğlu, Restrepo, 2018), or the geographical mismatch that leads to migration and emigration of the working age population (Şahin et al., 2014). There is also the problem of dysfunctional education and training systems and inadequate labour market policies (Lise, Robin, 2017). The pandemic and the uncertain situation in the labour market in Bulgaria due to the military conflict between Russia and Ukraine should have further exacerbated the growing labour problems.

5. Conclusions

Analysis of Bulgaria's Beveridge curve for the period after the country's accession to the European Union in 2007 shows some unique characteristics compared to the developed market economies of Western Europe or the United States. The main findings of the analysis are:

- During the period 2009-2020, the Beveridge curve moved as expected, appearing very elastic in the beginning, which indicates a high efficiency of the labour market in the process of matching job seekers with vacancies. Its shift in the second half of the period to the left is also consistent with the findings for the labour markets of other EU member countries.
- On the other hand, from 2020 to now, the situation has changed significantly, with the unemployment rate and the job vacancy rate forming a positive relationship, which contradicts the theoretical model of the Beveridge curve.

The explanation for the later development can be sought in the deterioration of the efficiency of the matching process in the Bulgarian labour market, probably due to a mismatch between the skills of job seekers and the requirements of the available jobs, as well as a geographical mismatch, which leads to migration and emigration of the population of working age. Other factors such as the poor performance of education and training systems and inadequate labour market policies may also play a role.

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МОДЕРНИЗАЦИЯ НА УСЛУГИТЕ ПО ЗАЕТОСТТА В БЪЛГАРИЯ В КОНТЕКСТА НА ЕВРОПЕЙСКИЯ ТРУДОВ ПАЗАР

MODERNIZATION OF EMPLOYMENT SERVICES IN BULGARIA IN THE CONTEXT OF THE EUROPEAN LABOUR MARKET

Резюме: Модернизацията на услугите по заетостта в България е важна част от политиката за адаптирането им към динамичния и постоянно променящ се европейски трудов пазар. Тази статия разглежда основните аспекти на модернизацията, като акцентира върху цифровизацията на услугите, повишаването на квалификацията на работната сила и осигуряването на индивидуални и гъвкави пътеки за обучение и заетост. Ще бъдат разгледани основните предизвикателства и възможности пред модернизацията на услугите по заетостта в България в контекста на европейския трудов пазар. Въз основа на анализа ще бъдат предложени конкретни препоръки за подобряване на ефективността и адаптацията на тези услуги към съвременните изисквания на пазара на труда.

Ключови думи: модернизация; услуги по заетостта; европейски трудов пазар; предизвикателства

Abstract: The modernization of employment services in Bulgaria is a crucial part of the policy to adapt them to the dynamic and constantly changing European labour market. This article examines the key aspects of modernization, with a focus on the digitalization of services, the enhancement of workforce skills, and the provision of individualized and flexible training and employment pathways. The main challenges and opportunities for modernizing employment services in Bulgaria in the context of the European labour market will be discussed. Based on the analysis, specific recommendations will be proposed to improve the effectiveness and adaptation of these services to the current labour market requirements.

Keywords: modernization; employment services; European labour market; challenges

JEL: J68; J20; O15

1. Увод

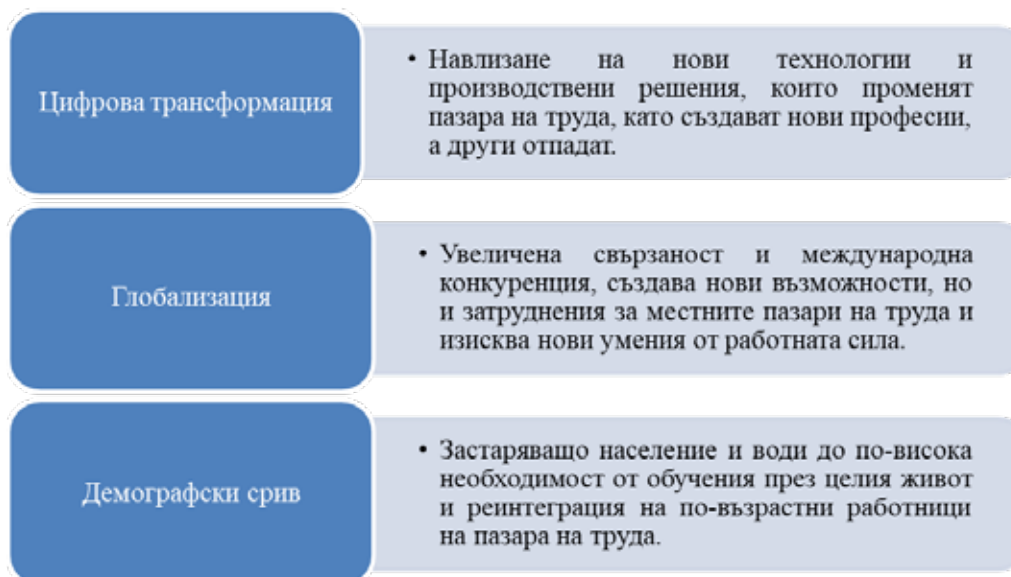
През последните 15 години сме свидетели на ускорени промени в изискванията на пазара на труда, породени от бързото навлизане на нови технологии и реорганизацията на производствения цикъл, демографския срив и глобализацията. Стимулирани от инициативи като Програма за устойчиво развитие на ООН (UN, 2015) и Програма „Цифрова Европа“ (European Commission, 2021), тези промени засягат и предоставянето на услуги по заетостта (УЗ). Практиката показва, че работодателите и търсещите работа лица, както и други заинтересовани страни, изискват обслужване, услуги и координационни механизми от нов тип. Като институции, които играят ключова роля и подкрепят работната сила в стремежа ѝ да направи успешни преходи от безработица към заетост – обучение – заетост, публичните служби по заетостта (ПСЗ) трябва да разработят нови подходи, както в институционална, така и във функционална насока, за да се адаптират към новите предизвикателства. Съвременните трудови пазари имат нужда от по-гъвкав и иновативен подход, което налага развиването на добре осмислена и устойчива политика по предоставянето на персонализирани и по-качествени и достъпни услуги.

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1.1. Новите предизвикателства пред пазара на труда

Европейският трудов пазар, включително българският, са изправени пред множество предизвикателства, които правят модернизацията на УЗ неотложна. Основните фактори, които изискват тази модернизация, са свързани с бързо променящите се икономически, технологични и социални условия (Фигура 1).

Фигура 1. Фактори, обуславящи модернизацията



Източник: Авторът.

За да отговорят ефективно на тези нови реалности и да предоставят адекватна подкрепа на работещите и работодателите, ПСЗ нямат алтернатива, освен да модернизират предоставяните УЗ.

1.2. Същност на модернизацията

Модернизацията е част от адаптацията на ПСЗ към променящите се социално-икономически условия. Тези промени създават както нови възможности за икономически растеж и заетост, така и редица предизвикателства за пазара на труда. България, като част от Европейския съюз (ЕС), е изправена пред задачата също да модернизира своите УЗ, за да отговори на новите изисквания на глобалния и европейския трудов пазар. Това участие налага необходимостта от по-добро синхронизиране с европейските насоки за заетост, както и от въвеждането на иновации, които да подобрят ефективността на процесите по посредничество и квалификация на работната сила. Затова модернизацията на УЗ има ключова роля за осигуряване на по-голяма гъвкавост, ефективност и балансиране на националния пазар на труда. Модернизацията се разбира като „нововъведение, усъвършенстване, съобразяване със съвременните изисквания и норми“ (Online Rechnik, 2024), но още липсва нормативно установена единна дефиниция за модернизация на УЗ, като за целите на настоящото изследване авторът ще разбира под това: целенасочен и систематичен процес, насочен към трансформиране на традиционните методи за предоставяне на услуги по заетостта и развитие на нови услуги.

Европейските политики и стратегии (ЕС, 1998-2020), които дават конкретни насоки на държавите членки в областта на заетостта, определят рамката на този процес за национални реформи, включително и за България. Сред основните приоритети е

интеграцията на цифровите технологии в управлението на трудовия пазар и предоставянето на УЗ, осигуряващи по-голяма гъвкавост и ефективност в посредничеството между работодатели и търсещи работа.

2. Състояние на проблема

УЗ са основен механизъм за насочване на безработните лица към свободни работни места и за подпомагане на тяхното кариерно ориентиране, професионално развитие, мотивиране, достъп до квалификационни курсове и усвояване на нови умения. Те са признати от Европейската комисия (ЕК) като критично важен инструмент за осигуряване на стабилен и гъвкав трудов пазар, който да отговаря на изискванията на съвременната икономика. От качеството и ефективността на УЗ зависи не само намаляването на безработицата, но и повишаването на икономическата активност и растеж.

Поради нарастващата необходимост от подобрения в начина, по който се предоставят УЗ, ЕК определя модернизацията им като приоритет. В едни от последните насоки (European Commission, 2023) се препоръчва модернизацията на УЗ да се фокусира върху интегрирането на нови цифрови технологии за повишаване на ефективността и персонализацията им. Това включва използването на изкуствен интелект (ИИ) за по-добро профилиране и адаптиране на УЗ към индивидуалните нужди на търсещите работа, както и подобряване на съответствието между кандидати и работодатели. Модернизацията цели също така да предотврати цифровото изключване чрез достъпни услуги, обучения и квалификация за уязвимите групи. Българската Агенция по заетостта (АЗ), като част от мрежата на Европейските публични служби по заетостта, изпълнява общите насоки за насърчаване на заетостта, включително мерките за подкрепа на уязвимите групи. Тя работи за подобряване на достъпа до пазара на труда чрез разработване на нови УЗ.

2.1. Услугите по заетостта в България

Процесът на модернизация на Агенцията за първи път е разписан в Стратегията за модернизация на Агенция по заетостта за периода 2016-2020 г. и доразвит с Актуализираната стратегия за развитие на АЗ за периода 2021-2027 г. (Agentsia po zаетostta, 2021). Предвижда се осъвременяване на предоставяните услуги чрез подобряване на качеството и ефективността им за уязвимите групи на пазара на труда и за работодателите. Целта на модернизацията на УЗ в България е да се създаде динамична, ефективна и ориентирана към резултати система, която да отговаря на новите реалности на трудовия пазар. Законът за насърчаване на заетостта и Стратегията по заетостта на Република България 2021-2030 (пак там) обуславят няколко основни групи УЗ в зависимост от тяхната цел и предназначение:

- Посреднически услуги;
- Информационни и консултантски услуги;
- Услуги за подкрепа на обучения и програми за квалификация.

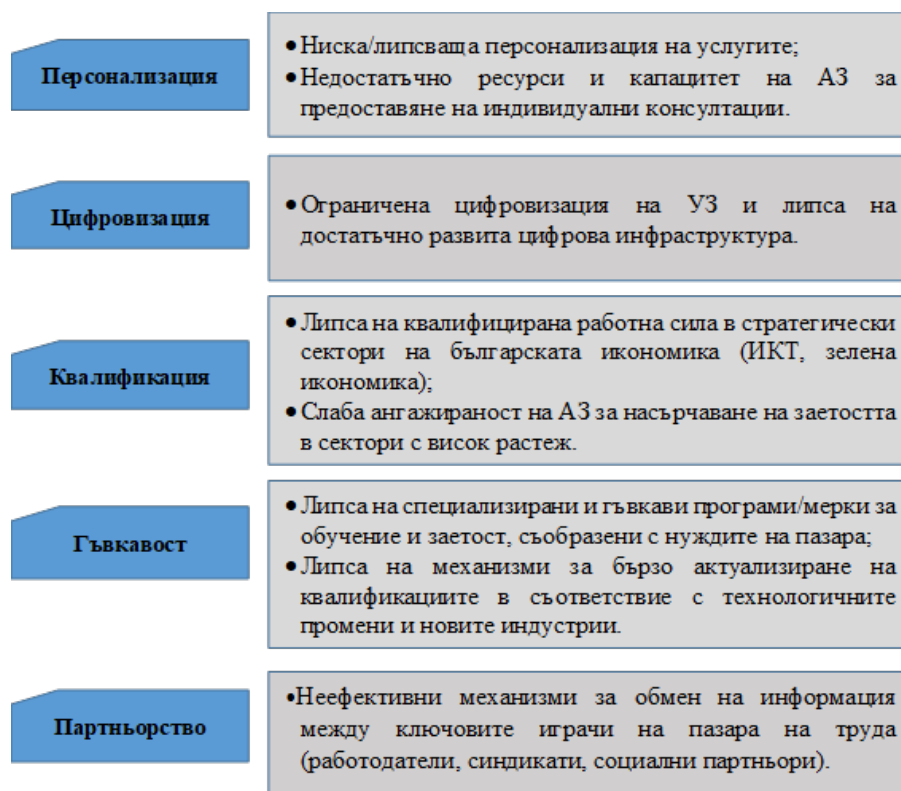
Формите, в които се предоставят те, са многообразни и адаптивни, като се развиват в отговор на динамичните промени в икономиката, технологиите и социалните условия. Те варират от традиционни методи на работа (консултиране лице в лице, трудови борси по места) до по-иновативни подходи (е-трудова борса; ваучери за обучение). Но ефективността на УЗ зависи най-вече от способността им да отговорят на специфичните

нужди на търсещите работа и работодателите в реално време и да се настроят към променящата се пазарна среда. Затова, въпреки постигнатите успехи от АЗ, се поражда нужда от по-нататъшни реформи, които да направят УЗ по-гъвкави и адекватни спрямо нуждите на пазара на труда. Страната ни изостава в изпълнението на някои ключови цели, особено по отношение на интеграцията на уязвимите групи и цифровизацията на услугите. С развитието на информационните и комуникационните технологии, цифровизацията става все по-важна за предоставянето на УЗ и изисква модернизиране на традиционните им форми.

2.2. Основни слабости в системата на заетостта

АЗ надгражда своите услуги (Agentsia po zаетostta, 2024), но редица системни предизвикателства продължават да възпрепятстват тяхната модернизация. Това води до пропуснати възможности за повишаване на заетостта и ефективната интеграция на уязвимите групи на трудовия пазар. Например, запазва се устойчивостта на дела на безработните без квалификация – около 55% (пак там), или на броя на безработните над 50 години – около 42% (пак там). Появяват се и нови предизвикателства като зеленият преход, пандемията от COVID-19 и войната в Украйна, които разкриват редица слабости и необходимост от по-голяма гъвкавост и иновативност (Фигура 2).

Фигура 2. Основни слабости на услугите по заетостта в България



Източник: Авторът.

Членството в ЕС налага ускорена модернизация на УЗ чрез прилагането на общи стандарти и политики в областта на заетостта, които целят не само подобряване на националния трудов пазар, но и улесняване на трудовата мобилност между страните членки. Необходимо е подобряване на политиките за заетост и достъп до иновативни услуги, които да осигуряват балансиране между търсенето и предлагането на труд,

особено за групи като младежите и дългосрочно безработните (Beleva, 2017). Затова българската АЗ следва да работи приоритетно за повишаване на качеството и ефективността на услугите и да адаптира успешни практики от други държави членки.

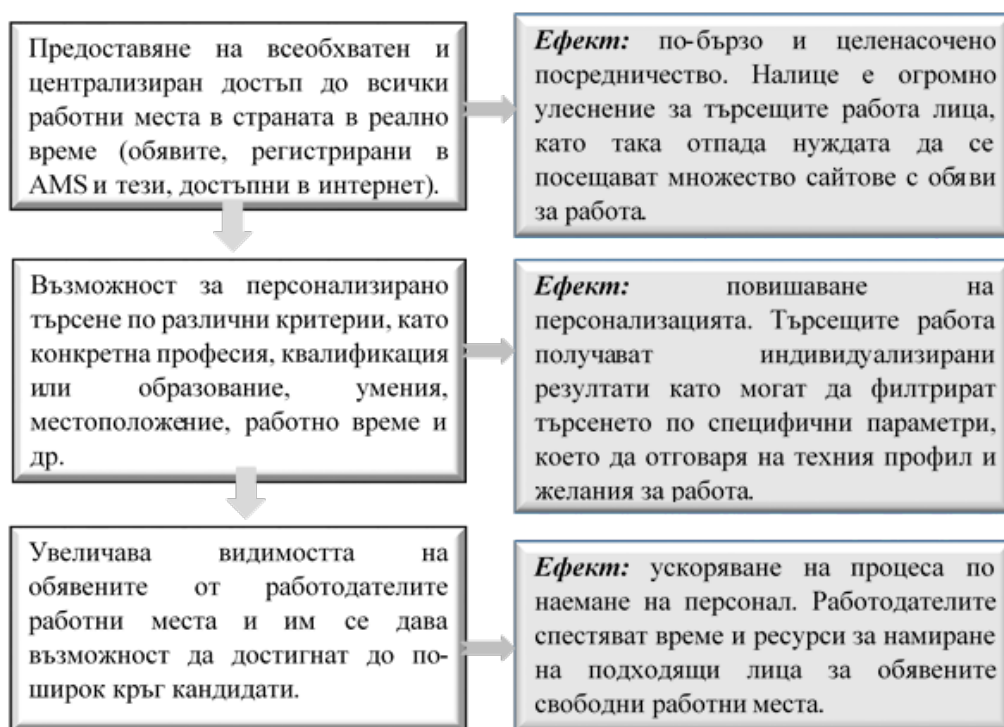
3. Методология или методологични подходи

За изследване процесите на модернизация на УЗ, използваният методологичен подход, предвид ограниченията в обема на статията, включва само метода на кабинетното проучване на европейски и национални документи и преглед на добри практики от други страни членки. Данните са събрани и анализирани в контекста на тенденциите на европейския трудов пазар, което позволява сравнението на България с други държави членки на ЕС.

4. Резултати от изследването

Проектът „Alle Jobs“ (AMS, 2021) на Австрийската служба по заетост е иновативна онлайн платформа, която цели да модернизира услугите по посредничество, като обединява всички публикувани обяви за работа в Австрия и повишава ефективността на трудовото посредничество (Фигура 3).

Фигура 3. Функционалности и ползи на платформата „Alle Jobs“



Източник: Австрийска служба по заетостта, 2024.

Чрез дигитализация и интеграция на ресурси AMS успява да подобри прозрачността и ефективността на трудовия пазар в Австрия, с което улеснява както търсещите работа, така и работодателите.

Друг успешен модел е на Латвия, която цифровизира редица услуги (OECD, 2024) в изпълнение на насоките за модернизацията на ЕК. Сред тях са:

- Цифровизация на профилирането на търсещите работа – разделяне на безработните в три групи според тяхната близост до пазара на труда. Това позволява на служителите на агенцията да предоставят по-персонализирани услуги на тези, които са най-отдалечени от пазара на труда;
- Въвеждането на инструмент за съответствие между работни места и търсещи работа. Чрез него автоматично се съчетават работни места с профилите на безработните лица. Ефектът е повишена скорост на посредничество и намалено време за запълване на свободни позиции;
- Службата е разработила и интерактивен дигитален портал за прогнозиране на пазара на труда. Той предоставя публично достъпни прогнози и анализи за нуждите на пазара на труда в краткосрочен, средносрочен и дългосрочен план.

Моделите на Австрия и Латвия предлагат няколко предимства пред АЗ, основно в сферата на цифровизацията и персонализирането на услугите. Австрийската ПСЗ подобрява прозрачността и достъпа до обяви за работа, като улеснява и ускорява процеса на наемане чрез централизирано обединяване на всички обяви за работа. Латвийската служба се отличава с високо ниво на цифровизация в профилирането на търсещите работа лица с цел по-добро насочване към подходящи програми за квалификация и обучение, както и автоматично съчетаване на кандидатите с обявените свободни работни места.

Тези практики и техните ефекти показват, че цифровизацията може значително да подобри ефективността и качеството на УЗ, като повиши информираността и достъпа до подходящи възможности за работа както за работодателите, така и за търсещите работа.

5. Изводи

Направеният анализ показва, че подобни подходи могат да бъдат адаптирани и приложени в България. Модернизацията на УЗ у нас е неизбежна, за да може страната да отговори на посочените предизвикателства. Все повече се изостря нуждата от създаване на по-гъвкава и конкурентоспособна работна сила, както и от усъвършенстване на уменията ѝ. Възможни подходи за това са:

- Цифровизация на услугите. Внедряване на е-платформи и онлайн услуги за посредничество на пазара на труда за лесен достъп до информация и услуги за работодатели и търсещи работа лица. Използване на ИИ за анализиране на пазара на труда, профилиране на търсещите работа и осигуряване на по-точна оценка на техните нужди и персонализирани решения. Разработване на иновативни инструменти като виртуални стаи за симулация на интервюта за работа;
- Разработване на интегрирани и гъвкави услуги. Въвеждане на интегрирани (комплексни) и гъвкави услуги като „раница за заетост“, която да включва няколко УЗ, предоставяни както от АЗ, така и от други институции, въвеждане на микроквалификации, индивидуални сметки за обучение и инструменти, подпомагащи преходите към заетост и преносимостта на уменията в краткосрочен план;
- Нови подходи за работа с уязвими групи. Развитие на цифровите компетентности на 50+ лица и разработване на нови програми за включването им в пазара на труда. Въвеждане на трудови посредници за лица в предпенсионна възраст и активиране на младите и пасивни хора. Използване на геймификация, която да мотивира младежите да се ангажират с обучителни програми или платформи за търсене на работа.

Обучение чрез виртуална симулация на реални работни условия, което не само ще повиши интереса на младежите, но и ще ги подготви практически за трудовия пазар.

Модернизацията на УЗ в България е не само необходима, но и неизбежна за успешното адаптиране на страната към променящия се трудов пазар в Европа. Анализът показва, че цифровизацията на услугите и интегрирането на нови технологии са ключови фактори за повишаване на ефективността на УЗ. Адаптирането на добри практики от други европейски държави може да допринесе за по-добро обслужване съобразено нуждите на работодателите и търсещите работа лица. Мерките за системно внедряване на иновации, реструктуриране на съществуващите програми за заетост и развитие на персонализирани подходи ще осигурят по-голяма гъвкавост и конкурентоспособност на българския трудов пазар.

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MOBILITY AS A WAY OF LIFE: DIGITAL NOMADISM AND NEW EMPLOYMENT PERSPECTIVES

Abstract: Digital nomadism is a new form of flexible employment that is becoming increasingly popular among young people. It offers an opportunity for greater professional independence and flexibility in terms of work time and location which is why more and more individuals discover the new horizons that digitalization opens up for them. The study examines digital nomadism as a contemporary form of employment and lifestyle that promotes labour mobility and career development opportunities. It allows employees to travel, explore new countries and cultures, expand their worldviews and enrich themselves personally and professionally. The research aims to clarify the essence of digital nomadism and present it as a modern form of employment that enhances opportunities for labour mobility. To achieve this objective, a literature review of the nature and characteristics of digital nomadism is made, highlighting its advantages and risks.

Keywords: digital nomadism; flexible employment; mobility; work-life balance

JEL: O35; F66; J62

1. Introduction

The possibility of moving from one place to another has always attracted people, providing a sense of freedom and independence. In the primitive era, societies were mobile, leading a nomadic lifestyle as they moved from one territory to another in search of food, water sources, favourable climatic conditions, or shelter. With the development of agriculture, people began to adopt a more settled lifestyle, which allowed them to have their own homes and possess property.

In the modern world, nomadism has taken on a completely different meaning. Modern nomads have retained their free spirit and desire for independence, yet they remain connected to the rest of the world through the internet and new technologies. They are characterized by a desire for a more peaceful way of life, far from the large cities and the hustle and bustle of daily life. These new nomads are deeply integrated into the digital world, and although they may appear to be adventurers at first glance, they have consciously chosen to trade the conveniences of the metropolis for the tranquillity of smaller communities (towns, villages, resorts, or regions) that have preserved their authenticity, where life is calmer, and the cost of living is lower. A key condition for this lifestyle is that their profession must allow for remote work, without requiring daily presence in an office. Once they immerse themselves in the local atmosphere and adopt the lifestyle of the residents, digital nomads spend some time in these places before leaving and moving to another location that seems interesting and offers favourable conditions for remote work.

2. State of the Problem

The modern world is undergoing global changes as a result of the irreversible dissemination of digital technologies. Digitalization has affected employment by altering not only the nature of work and the methods of job search and recruitment but also the forms of employment itself.

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Remote work has become increasingly preferred by individuals as it allows them to be mobile and work from anywhere in the world, as long as they have a reliable internet connection.

One of the most contemporary forms of flexible employment is digital nomadism which enables individuals to combine remote work with global travel without disconnecting from their professional responsibilities.

Labour mobility and digital nomadism are distinct forms of employment. We can consider that labour mobility is (according to the Law on labour migration and labour mobility) a free movement of workers from one to another country that allows them to relocate and work without restrictions related to nationality.

Digital nomadism remains insufficiently explored from a practical point of view and its full potential has not yet been realized by younger generations. Studying it from a new employment perspective is particularly important as it enables people to take advantage of its benefits and enhance their mobility. This could positively impact their professional development, improve their work motivation, and encourage personal growth by achieving a better balance between work and leisure.

Defining the term „digital nomadism“ is challenging, and most attempts to do so are descriptive. The term was first used in 1997 by researchers Makimoto and Manners in their book *Digital Nomad* (Makimoto, Manners, 1997), where they predicted how technological advance would enable people to live, work and exist in constant motion and transformation, while simultaneously satisfying the desire for travel and the exploration of different cultures.

Digital nomads are location-independent remote workers who are simultaneously engaged in extensive leisure travel while remaining at work digitally (Chevtaeva, Denizci-Guillet, 2021). Other authors define digital nomads as both highly mobile professionals and travellers by lifestyle, who perform their work remotely from any part of the world, using digital technologies (Hannonen et al., 2020). Digital nomads are defined as workers performing remote work via the Internet, who remain focused on connectivity even during their leisure time (Bozzi, 2020).

Based on the conducted literature review and personal research, we can conclude that digital nomadism is a distinctive lifestyle, driven by the desire for freedom and mobility in both time and space. It is neither working from home, nor seasonal employment, nor purposeless travel but a worldview and a set of values and priorities embraced by people who uniquely combine their technological skills with the desire to travel, to explore the world.

3. Methodology

The study examines digital nomadism as a contemporary form of employment that promotes labour mobility and career development opportunities for individuals.

The aims of the research are to clarify the essence of digital nomadism and to present it as a modern form of employment that enhances opportunities for labour mobility. To achieve this objective, a literature review of the basic characteristics of digital nomadism is made, highlighting its advantages and potential risks.

The research methods employed include analysis and synthesis, induction, and deduction. The study focuses only on the theoretical concepts of digital nomadism as a form of employment but its practical application is to be addressed in future research. Due to the lack of a clear and universal definition of digital nomads, there is no comprehensive and globally applicable

statistical data on them, making it difficult to compare the prevalence of nomadism as a form of labour mobility across countries.

4. Results of the Study

Digital nomads are agents of change in the modern labour market, transforming the conventional notions of daily desk work by turning the world into a global workplace. This does not mean they have forsaken the comforts of a modern office, on the contrary, they frequently utilize contemporary shared workspaces equipped with various amenities. They can use meeting rooms, workstations, relaxation and entertainment zones, service areas and most importantly, a reliable internet connection that enables remote work.

By combining work and travel digital nomads tend to settle in locations that are relatively accessible by public transport, close to major transport routes and airports, yet still immersed in nature and favourable climates. Particularly favoured are destinations with warm, temperate climates, whether mountain or seaside resorts, cultural landmarks, or places that have preserved their authenticity, offering nomads the chance to blend into the local culture and lifestyle. During their stay, digital nomads immerse themselves in local life, gaining insight into the customs, culture, and values of the communities they inhabit.

Nomads often form their own communities in these areas, communicating together, assisting each other in work, sharing leisure time, or tackling challenges together which helps facilitate their adaptation. After spending between six to twelve months in one location, they typically choose a new destination that offers fresh challenges and experiences, where they can settle for either a short or extended period.

Digital nomadism – key facts and measurement indicators

Data on the dynamics and structure of digital nomadism in Europe remain highly fragmented due to the lack of a universal definition. Unlike the United States, European statistical institutions do not collect comprehensive data on digital nomads and often equate them with individuals engaged in remote work. However, digital nomadism and remote work are not identical, though both involve teleworking.

Given the absence of more reliable metrics for tracking trends in digital nomadism, it is conditionally accepted that the overlap between it and remote work is significant enough to serve as a useful indicator for understanding the dynamics within these groups. Thus, the trends observed in the rise of remote work can also hint at the potential growth of digital nomadism, though the fundamental distinctions between the two should always be kept in mind.

The increasing preference for remote work, particularly after the COVID-19 pandemic, along with the rise of jobs that allow teleworking, may inspire more people to adopt the digital nomad lifestyle. In addition to working remotely, individuals may also choose to change the places they call „home“. This would enhance workforce mobility, leading to economic, social and cultural exchanges, which are part of the broader processes of global integration and the reduction of travel barriers.

Digital nomadism originally emerged in the United States, that is why there are more statistical data on the number of digital nomads there. Fikry et al. (2023) estimate that by 2021, there were 35 million digital nomads worldwide, with 11 million residing in the U.S., representing more than a double increase from 2018 when there were 4.8 million. Projections suggest that by 2025, the number of Americans working remotely will reach 36.2 million, an 87% increase from pre-

pandemic levels (Fikry et al., 2023). American digital nomads are primarily from Generation Y (Millennials), a cohort with a more global orientation compared to previous generations. (Danailova, 2020).

More structured data on digital nomadism can be found in the study Digital nomads statistics and figures in 2024 (Ploscaru, 2024). Between 2015 and 2023, the percentage of people working remotely globally increased from 7% to 28% of all employees. The ICT sector had the highest share (68%) of remote workers in 2023. According to this study, approximately 35% of digital nomads have annual incomes ranging from \$100 000 to \$250 000 and 80% of surveyed digital nomads reported high job satisfaction, compared to 59% of non-nomadic workers.

Based on the findings of Brie Reynolds (Reynolds, 2018) made among 500 nomads the typical digital nomad profile can be as follows:

- 70% of digital nomads are women with an average age of 40 years. 61% of digital nomads are married. Among them, 38% travel constantly with their partners, 31% – occasionally and 32% never travel with them. Only 26% of digital nomads have children under 18 and 59% of them do not travel with their children.
- 70% of digital nomads are full-time employees – teachers, mentors, writers, arts and creative artists, programmers data processors, marketing or project managers, administrators, consultants, etc.
- Digital nomads are well-educated: 72% have bachelor's degree and 33% – have master's. 74% have health insurance and 55% – retirement. 2/3 of digital nomads worry about their future pension status.
- Typically, they work from an apartment, campus, hotel, or hostel, from a nearby café, their car, caravan, library or co-working spaces. They utilize various communication tools, such as Skype (67%), Google Chat (34%), GoToMeeting (32%), Google Hangouts (29%) and Zoom (24%). To accomplish this they require a laptop, cell phone, battery charger, hotspot and adapter which they can use simultaneously.
- Digital nomads have adopted this lifestyle due to: work-life balance (73%); enjoying freedom (68%); a love for travel (55%); wanting to explore other cultures (37%); high cost of living in their home country (30%). According to 88%, the decision to become digital nomads has significantly improved their lives.

Benefits and risks of digital nomadism

Digital nomads typically choose their next destination based on specific factors such as safety, cost of living in the country, internet quality, opportunities for working in shared spaces, transportation links, proximity to airports and hospitals, cultural characteristics, bureaucratic procedures in the respective country, presence of other nomads, climate and environmental factors, and proximity to the sea or mountains, etc. Digital nomadism has its advantages and disadvantages organized in Table 1.

Some of the most popular hubs for digital nomads in 2024 are London, Bangkok, New York, Lisbon and Paris. Various locations in Central and Eastern Europe also offer good conditions for digital nomads – Prague, Belgrade, Zagreb and Bucharest, while in Bulgaria the cities of Bansko, Varna, Veliko Tarnovo and Sofia are very attractive for them.

Table 1. Benefits and risks of digital nomadism

Benefits of digital nomadism	Risks of digital nomadism
<i>Individual benefits</i>	<i>Individual risks</i>
Encourages personal and professional freedom and labour mobility	Isolation and inability to create lasting friendships or working relationships
Opportunity to achieve work-life balance and improve mental health	Long time distance from family and home
Enhances creativity, work motivation and productivity	Impossibility of maintaining long-term partnership
Territorial and temporal flexible employment	Depression risk
Opportunity to travel and enrich cultural experiences without disconnecting from the work process	Exhaustion from working in different time zones
Building personal and professional connections	
<i>Public benefits</i>	<i>Public risks</i>
Increases the consumption of goods, products and services in the locations of residence; changes in the real estate market	Legal regulations for remote or flexible working could be difficult for some companies
Improvement of population's demographic structure in the host country or region	Permanent establishment risk related to corporate taxes
Promotion of cultural diversity and tourism in the countries where they live	Risk of social security coverage

Source: Author.

Many countries have introduced „digital nomad visas“ which often exempt holders and their employers from income tax obligations in the host country. The holders are permitted to live and work in the country for some periods with the option to extend their visa upon expiration.

5. Conclusions

The presented characteristics of digital nomadism and its dynamic development, particularly following the COVID-19 pandemic establish it as a new and increasingly preferred form of flexible employment for modern workers. These individuals seek to continue their usual professional activities while travelling and exploring new countries, cultures and lifestyles. Globally, more employers are recognizing the benefits of remote work and are shifting their businesses online facilitating the career development of digital nomads.

In the future, digital nomadism is likely to become an even more desirable form of employment, particularly for individuals whose professions can be performed remotely. Employers will need to adapt to this demand if they wish to attract and retain talented employees who have modern values and innovative ideas while pursuing a balanced and dynamic life.

Acknowledgement

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TRENDS IN PUBLIC EXPENDITURE ON EDUCATION IN BULGARIA IN THE CONTEXT OF EUROPEAN INTEGRATION

Abstract: *The aim of this paper is to analyse the trends in public expenditure on education in Bulgaria in the context of European integration and to assess the degree of convergence with the EU average. The results show relatively stable values over time for public expenditure as a percentage of GDP and as a share of total public expenditure in Bulgaria. In the case of public expenditure per student in a public institution, both in PPS and as a percentage of GDP per capita, the study shows the presence of a convergence between Bulgaria and the EU average in the period 2013-2021.*

Keywords: *education; Europeanisation; public expenditure on education; public expenditure structure*

JEL: *I22; I28; H41; H52*

1. Introduction

The importance of education for the economic and social development of any society is undisputed. This role and the positive externalities generated by the consumption of educational services justify the traditional involvement of the state in financing, regulating and implementing policies. Public expenditure on education is intended to provide the members of society with the good of education, including compulsory education. Thus, through the redistribution of financial resources accumulated through the tax system, each member of society has the right (but also the obligation for a certain level of education and age) to consume a package of educational services. Although there is often no equilibrium for the individual in the equal provision of a package of educational services, the public provision of education seeks to achieve an equilibrium for society. Moreover, the benefits of education go beyond individual dimensions and have implications for ensuring integration into society.

It is clear that the utility of consuming educational services differs from individual to individual, and therefore the absence of government subsidy will lead to the exclusion of individuals from the education system and increase educational inequality, which in turn will increase income inequality. A number of researchers (e.g. Chan, Ramley, 2018; Zhang, 1996) have argued that public spending on education can contribute to reducing income inequality, especially in the primary income distribution. The transmission mechanism of this impact is most pronounced in the equalisation of individuals' opportunities in the labour market.

Public funding of education takes place in a context of limited resources, demands for fiscal consolidation and competing public policy objectives. In this context, the question of the level of funding for education and the share of public resources devoted to the sector is relevant. The level and direction of public spending are an indicator of the perceived priorities of public authorities and contribute to differences in the level of economic and social development achieved and the degree of achievement of national and also EU common goals (Stefanova, 2022a).

In the context of European integration, serious disparities in education funding between Member States could contribute to inequalities in the quality, level and outcomes of education across the population and hence in the characteristics of human capital. Of course, there have traditionally been differences in the education systems of EU countries, due to cultural and

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historical factors. Moreover, within the EU, Member States have competencies in the field of national education policy. Dakowska (2019) points out that formal education is still an internal prerogative and that, in principle, the EU can only support and complement national government initiatives in this sector. In practice, however, there are a number of supranational programmes and initiatives (Erasmus+ programme, Common Vocational Training Policy, Lisbon Strategy, Europe 2020 Strategy, etc.) through which the EU indirectly conducts policy and guides the efforts of Member States, but the uptake of European recommendations at national level is very variable. Alexiadou and Lange (2012) highlight that for the first time since the Lisbon Council in 2000, education has been 'opened up' as a policy area for the EU to develop its activities, albeit within the limits of the subsidiarity principle. In practice, this is done through the open method of coordination. Thus, through the Lisbon Strategy and subsequently through the Europe 2020 Strategy, education-related objectives (in particular higher education) aim to achieve the broader objectives of the EU. Bulgaria is also affected by the common guidelines of the EU, and in the field of higher education, it competes with other Member States to attract students.

Education is a priority area in Bulgaria and has traditionally received one of the highest shares of public expenditure. At the same time, against the background of a relatively low level of redistribution through the budget, the country spends less in this area in absolute and relative terms than other EU countries. In this context, the aim of this paper is to analyse the trends in public expenditure on education in Bulgaria in the context of European integration and to assess the degree of convergence with the EU average. The paper is structured as follows. The next section presents the state of the art. The third section briefly outlines the research methodology. The fourth section presents the results of the empirical analysis and the last section summarises the main findings of the study.

2. State of the Art

The study of trends in public expenditure and its structure is a subject of increasing interest to the academic community because of its impact on the social and economic development of each country. Commitments to comply with national fiscal rules and those enshrined in the Stability and Growth Pact increase the importance of the structure and efficiency of public spending in Bulgaria and in other EU Member States. Education spending has traditionally been of particular interest, as it is seen, along with social protection and health spending, as an important part of building the well-being of society (Stefanova, 2022a).

The comparative and convergence analysis of public expenditure on education within the European Union is mostly carried out in the context of taking into account the convergence in the structure of public expenditure between Member States, driven by common policies and supranational regulations. It should be noted that there are no strict supranational rules regarding the functional structure of public expenditure, but there are some general guidelines and a certain tightening and strengthening of coordination in economic governance in the European Union. In this regard, there are various studies on convergence in the functional structure of public expenditure (e.g. Perović, 2016; Sanz and Velázquez, 2001; Stefanova, 2022a), including those that focus on tracking convergence trends in EU countries, especially in education expenditure (e.g. Agasisti et al., 2012; Ghinea et al., 2017). According to Agasisti et al. (2012), there is a need for cross-country studies comparing expenditure levels and the results of convergence of these expenditures (public and private resources) in the field of education. Some previous studies (e.g. Sanz and Velázquez, 2001, Stefanova, 2022a,) have found the existence of convergence between EU countries at different periods in terms of the share of public expenditure on education in total public expenditure.

3. Methodology

In order to assess trends in public expenditure in Bulgaria and compare them with the EU average, data on public expenditure as a share of total public expenditure and as a share of GDP are used, as they provide different types of information. Public expenditure as a percentage of GDP is influenced by differences in the degree of government intervention in the economy. Data on public expenditure per student in public institutions in purchasing power standards are also used to take into account the number of people covered by the education system and the price levels in different countries. In addition, the indicator of public expenditure per student in public institutions as a percentage of GDP per capita in PPS is also used to reduce the effect of different income levels between countries, as wage costs account for a large part of education expenditure.

In order to examine the convergence of public expenditure on education in Bulgaria with the EU-27 average over the period 2013-2021, the sigma convergence approach is applied. It examines whether the variation between countries in a given indicator has decreased or increased over a given period. Coefficients of variation are used to measure the size of the differences. The sigma convergence approach is applied by estimating the trend of the coefficients of variation of public expenditure per student in a public institution, both in PPS and as a percentage of GDP per capita by estimating the following linear trend model, similar to studies in other areas (e.g. Stefanova, 2022b):

$$CV_{it} = \alpha_i + \sigma t + u_{it} \quad (1)$$

where:

CV_{it} is coefficient of variation between Bulgaria and the EU average in year „t“

α_i – constant

σ – parameter representing the relationship between the independent variable and the dependent variable

t – time period variable

u_{it} – standard error

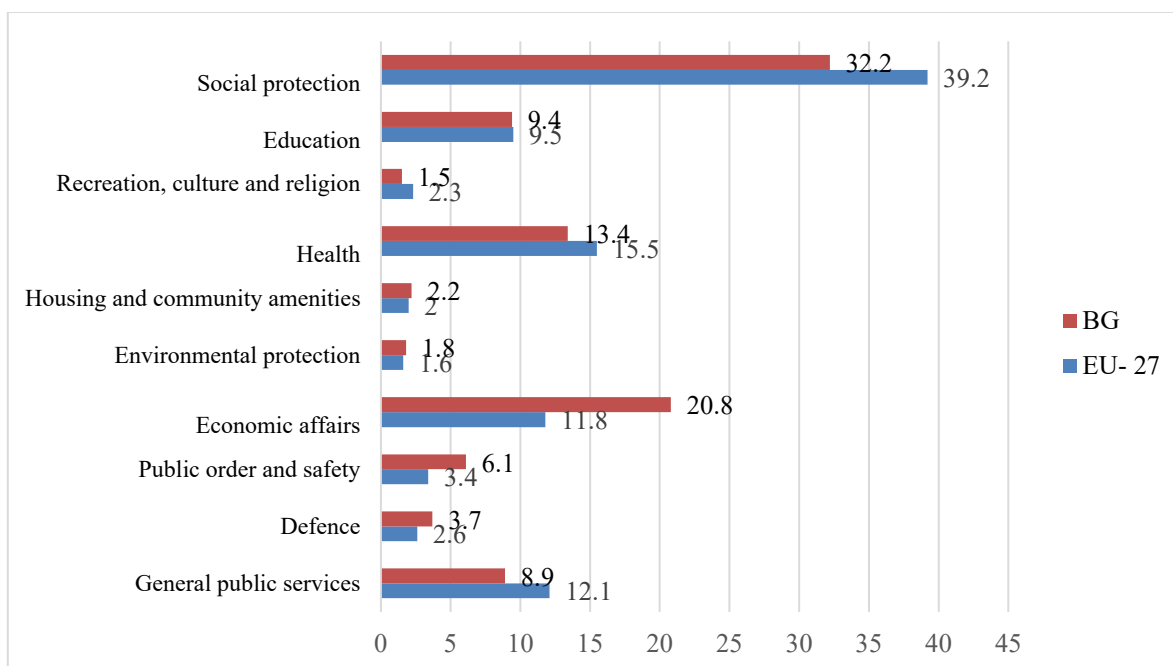
For sigma convergence to exist, there must be an inverse relationship between the independent variable and the explanatory variable. The source of all data used in the study is Eurostat.

4. Research Results

Education is a priority sector for any economy and traditionally public expenditure on education has one of the highest shares in total public expenditure compared to other functional areas according to the COFOG classification both in Bulgaria and in other EU countries (Figure 1).

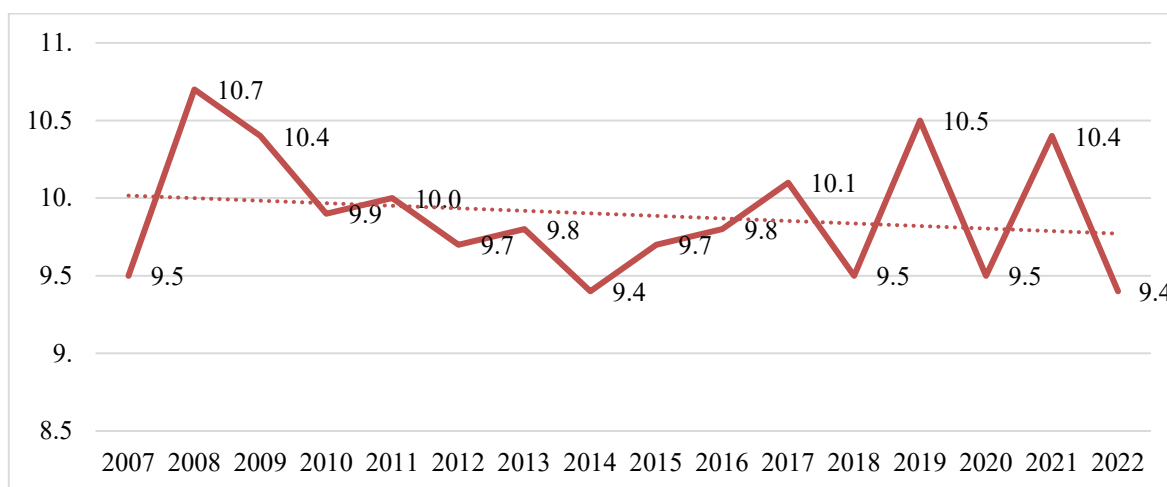
In Bulgaria, the share of education expenditure in total public expenditure shows a slight downward trend but remains relatively stable over the period 2007-2022. The average value of the indicator over the period is 9.9% (Figure 2). The dispersion between the values of the share of education expenditure in total public expenditure, measured by the coefficient of variation, is 4.23% over the period 2007-2022, which indicates the stability of the indicator and the low dynamics of its value. Usually, the more important functional areas with higher shares in total public expenditure do not show high dynamics over the years (Stefanova, 2022a). This is also the case for the EU27 average and for most Member States.

Figure 1. Structure of public expenditure in Bulgaria and EU-27 in 2022 (%)



Source: Eurostat.

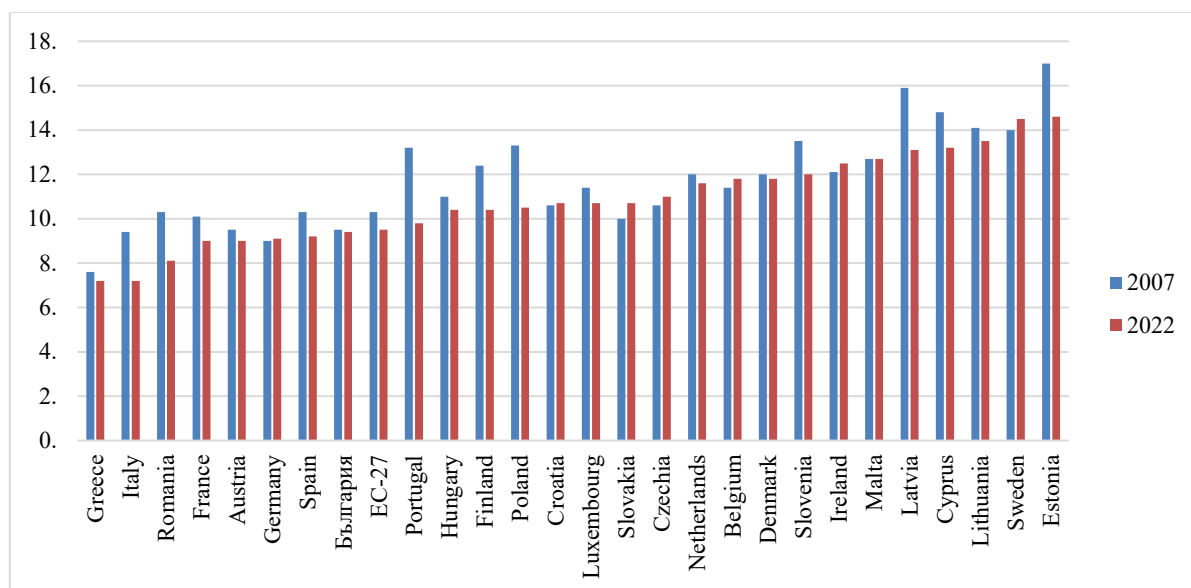
Figure 2. Share of public expenditure on education in total public expenditure in Bulgaria (%)



Source: Eurostat.

In comparison, Bulgaria has one of the lowest shares of education expenditure in total public expenditure in the EU, below the EU average in both 2007 and 2022 (Figure 3). The highest shares in 2022 are found in Sweden, Cyprus and the Baltic countries. The value of this indicator is influenced by the level of government funding, but also by the role of education policy and the prioritisation of the sector. For example, the Baltic countries, which are characterised by some of the lowest shares of public revenue and expenditure in GDP in the EU, have some of the highest shares of education expenditure in total public expenditure. Estonia, for example, has also a leading position among European countries in the 2022 PISA results. However, it should be noted that Estonia and Bulgaria, as well as most other EU countries, report a lower share of public expenditure on education in total public expenditure in 2022 compared to 2007.

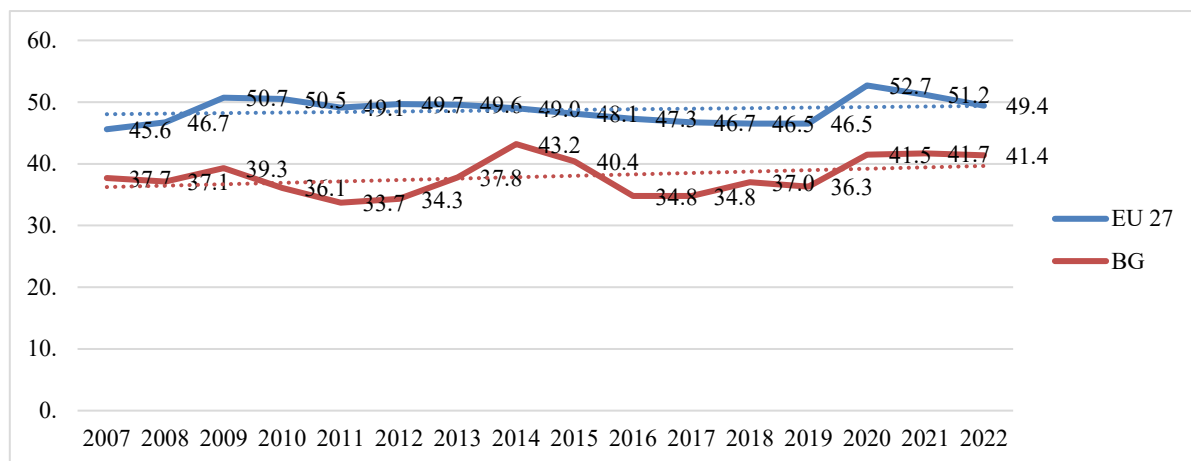
Figure 3 Public expenditure on education as a percentage of total public expenditure (%)



Source: Eurostat.

Over the period 2007-2022, there is a slight upward trend in the share of public expenditure on education in GDP in Bulgaria, in line with the slight increase in the share of public expenditure in GDP, which means that a higher share of GDP is allocated to education (Figure 4). However, the coefficient of variation, which measures the dispersion between values over the period, shows a low variation of 7.74%. This indicates a relatively stable value for the indicator over the period.

Figure 4. Trends in public expenditure on education as a percentage of GDP in Bulgaria and EU-27 average (%)



Source: Eurostat.

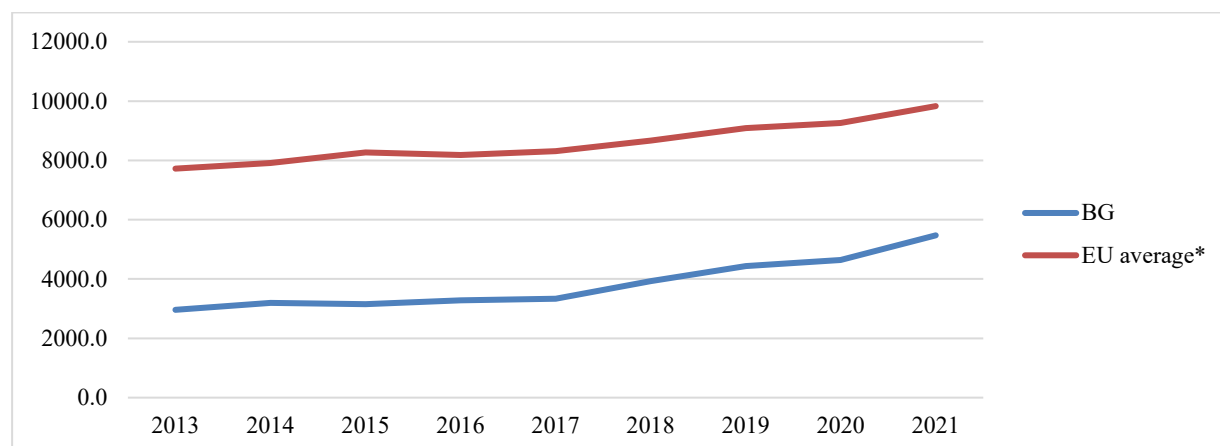
With the exception of Romania and Ireland, Bulgaria spends the lowest proportion of GDP on education among the EU Member States. This is in line with the fact that the country has traditionally had one of the lowest shares of public expenditure in GDP, corresponding to a low degree of redistribution through the budget.

When analysing public expenditure on education in Bulgaria and comparing it with the EU average, it is also useful to consider the number of people covered by the education system.

Different countries spend different amounts of public money on education per student. These resources are increasing in Bulgaria, on average in the EU and in almost all EU countries.

However, it is worth noting that this indicator is several times lower in Bulgaria than in the EU. In 2021, public expenditure per pupil in a public institution in Bulgaria is 5473 PPS, while the EU average is 9831 PPS (Figure 5). This value in Bulgaria is the lowest among the EU countries (excluding Greece) in 2021. The observed increase in public expenditure per student takes place against the background of a decrease in the number of pupils enrolled in both Bulgaria and the EU average.

Figure 5. Public expenditure per student in a public institution (PPS)



* excluding Estonia and Croatia due to lack of data.

Source: Author's calculation based on Eurostat data.

Despite the twice lower value in Bulgaria than the EU average, the trend shown in Figure 5 shows a higher growth in Bulgaria, suggesting a convergent trend. The assessment of the trend of the coefficients of variation between Bulgaria and the EU average shows the same result – the presence of sigma convergence, as the coefficient is negative and statistically significant (Table 1).

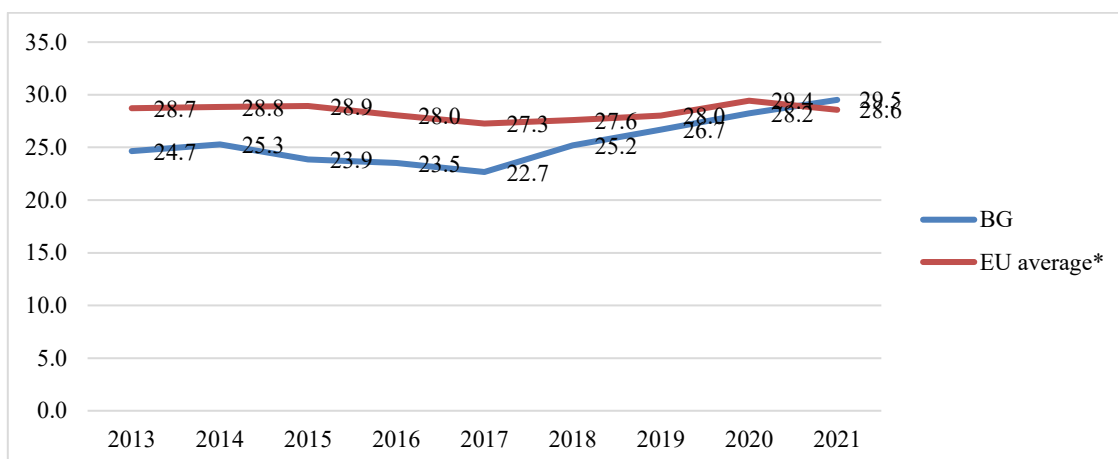
Table 1. Linear trend model results for Sigma-convergence

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TIME	-2.780602	0.432519	-6.428851	0.0004
C	5663.654	872.3920	6.492097	0.0003
R-squared	0.855163	Mean dependent var		55.17986

Source: Application of the models in E-views based on Eurostat data.

The majority of education expenditure is on salaries, which vary between countries and can therefore affect the comparative analysis of the indicator of public expenditure per student in a public institution. It is therefore also important to track trends in public expenditure per student in a public institution as a percentage of GDP per capita.

Figure 6 Public expenditure per student in a public institution in PPS as a percentage of GDP per capita (%)



* excluding Estonia and Croatia due to lack of data.
Source: Author's calculation based on Eurostat data.

The analysis of public expenditure per student in a public institution as a percentage of GDP per capita shows smaller differences between the level in Bulgaria and the EU average. Moreover, the trends in the dynamics of the indicators clearly show a convergence between Bulgaria and the EU average. The presence of sigma convergence is also evidenced by the negative and statistically significant value in front of the independent variable (time) when estimating the trend of the coefficients of variation between Bulgaria and the EU average level (Table 2).

Table 2. Linear trend model results for Sigma-convergence

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TIME	-1.325268	0.381642	-3.472541	0.0104
C	2681.308	769.7727	3.483246	0.0102
R-squared	0.632711	Mean dependent var		8.243064

Source: Application of the models in E-views based on Eurostat data.

5. Conclusions

The study of trends in public expenditure on education in Bulgaria and the comparative analysis with the EU average and those of individual Member States requires the coverage of all its measures. Expectations of increasing values and convergence with the EU average are mainly related to the indicator of public expenditure per student in a public institution, both in PPS and as a percentage of GDP per capita. The survey results show the existence of such a trend. At the same time, however, one should not underestimate the backlog of Bulgaria in relation to public funds allocated per student in a public institution. It should also be noted that, with the exception of Romania and Ireland, Bulgaria spends the lowest proportion of GDP on education among the EU Member States. This is consistent with the fact that the country has traditionally had one of the lowest shares of public expenditure in GDP, corresponding to a low degree of redistribution through the budget, which raises questions about the efficiency of public expenditure and whether the financial resources accumulated through the tax system are

sufficient to ensure the desired quality and coverage of public goods, and education in particular.

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COMPARATIVE STUDY OF THE DIGITAL SHOPPING SKILLS OF CONSUMERS IN THE EUROPEAN UNION: INFLUENCE OF ECONOMIC AND DEMOGRAPHIC FACTORS

Abstract: The current research focuses on presenting conceptual frameworks and empirical evidence on the similarities and differences in the digital shopping skills of European consumers. The main goal of the development is to carry out a comparative study of the digital shopping skills of consumers from the 27-member states of the European Union and, by using econometric methods, to assess the impact of certain economic and demographic factors. In this way, the existing similarities and differences are brought out. To achieve the goal, a hierarchical cluster analysis is performed with the capabilities of the IBM SPSS Statistics software product. The formation of individual clusters of European countries on the digital shopping skills of consumers, measured by a total of five key variables, is based on data released by the European statistical office Eurostat for the year 2023. The obtained research results allow hierarchical grouping and comparison of the formed clusters.

Keywords: digital skills of individuals; cluster analysis; european consumers

JEL: L81; F14; F18; O18

1. Introduction

Over the past two and a half decades, consumers' digital shopping skills have undergone a significant shift (Cave, et al., 2006). The digital infrastructure of the European Union countries is being transformed by improving mobile broadband coverage and accelerating the spread of high-speed internet. The pervasive impact of digitization is changing various aspects of the economy and society, including online commerce.

Digital literacy of users is defined as the ability to find, appreciate, use, share and create content using digital devices such as computers and smartphones, for example (Castells, 2001). Expanding digital skills is becoming a key factor in evaluating the online shopping experience. Higher digital skills are associated with a more positive interaction with online platforms, increased trust in digital transactions, and a greater likelihood of repeat purchases (Van Deursen & Van Dijk, 2011).

The improvement of digital technologies and the consistent and rapid improvement of the digital skills of users are associated with the evaluations of the levels of economic growth of the countries of the European Union. These questions have attracted considerable attention from researchers. In particular, A. Rai, P. Constantinides and S. Sarker, studying next-generation digital platforms, delve into the effects on macroeconomic variables (Rai, et al., 2019).

As he confirms in his scientific works M. Warschauer, the digital similarities and differences characterizing the levels of digital skills between different demographic groups highlight the importance of digital literacy for inclusion and equal participation in online commerce (Warschauer, 2003; Nikolova, 2003; Blazheva, 2023; Atanasova, 2024). Therefore, understanding the role of digital skills in the online shopping process is an essential predictor in determining the behaviour of European consumers in the digital market.

The review of specialized literature allows us to determine different groups of factors influencing both the behaviour pattern of consumers and their digital shopping skills. Among

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these factors can be distinguished: economic, demographic, psychological, social and cultural, others.

The main objective of this research is to carry out a comparative study of the digital shopping skills of consumers from the 27 member states of the European Union and, by using econometric methods, to assess the impact of certain economic and demographic factors. By using data released by the European Statistical Office – Eurostat, the provided research focuses on presenting theoretical and empirical data on certain economic and demographic factors determining to a certain extent the digital skills of European consumers when making online purchases.

2. State of the Problem

In a number of scientific studies, dependencies between the growth indicators of a given economy and the standard of living of consumers are sought. For example, studies focusing on online commerce adoption patterns and tools in developing countries show that digitally literate consumers are better equipped to overcome problems related to technology use, and thus improve their online shopping (Molla, Licker, 2005). Groups of users with differences in digital skills are distinguished.

Digital skills are the subject of research from a sociological perspective. The observation of empirical studies conducted in this direction shows that they focus on specific aspects. Such, for example, are: individual socio-demographic differences, hypermedia navigation and training (Ford, Chen, 2000); defining user search queries (Spink, et al., 2001).

The existence of certain differences and disparities in socio-economic and technological aspects regarding digital literacy does not allow users to fully benefit from the opportunities provided by electronic platforms for online commerce. In this regard, it is important to consider the power of influence of various factors, among which are those of an economic and demographic nature, brought to leading positions in modern economic theories.

According to the studies of theorists P. Moreira and P. Padrao, groups of users with low and high incomes are characterized by specific differences that are predetermined by such demographic factors as those related to the level of education and literacy, including digital literacy (Moreira, 2004). Any change in consumer disposable income leads to a corresponding variation in purchasing decisions, including online shopping.

3. Methodology / Methodological Approaches

The presented study is based on data released by Eurostat. In the analysis and interpretation of the digital skills of individuals from the 27-member states of the European Union, the following variables are used: „level of Internet access – households“; „online purchases by individuals“; „employed, self-employed, family workers“; „disposable income – households“; „natural persons with higher education“.

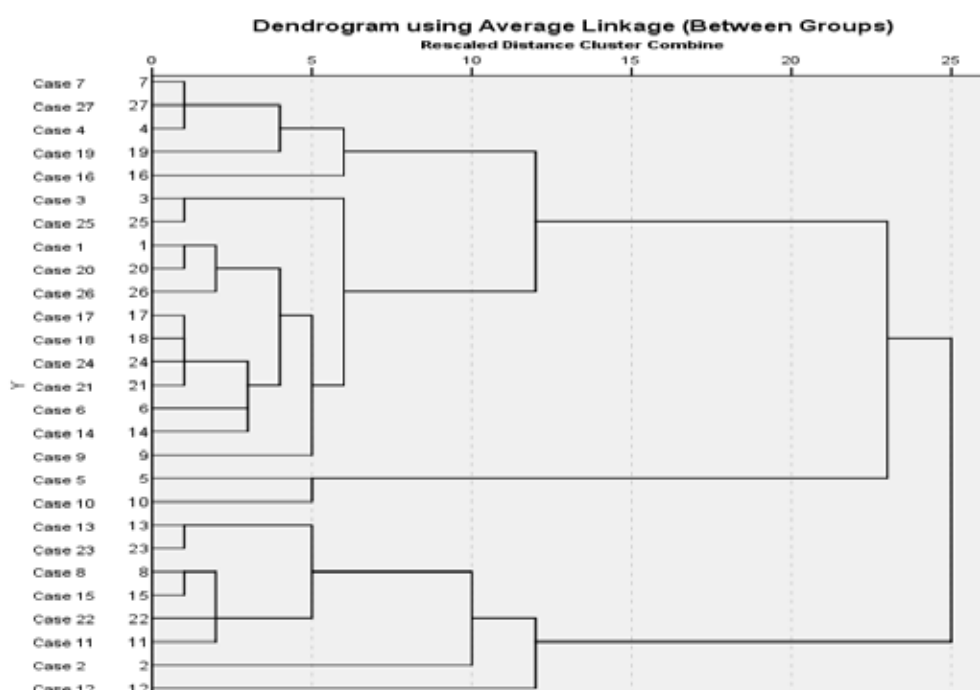
The methodological sequence of the study is based on performing a hierarchical cluster analysis based on the determined quantitative characteristics. The application of the between-group method linkage allows us to determine the correlations between the development of the analyzed variables, the characteristics of which are measured on the basis of data for the year 2023 by using the capabilities of the SPSS software product Statistics.

4. Research Results

From an analytical aspect, the similarities and differences between the compared 27-member states of the European Union are established. The choice of hierarchical cluster analysis is justified by the presence of significant differences between the values of the variables. Thus, the distinguished type of analysis is one of the main methods for finding relatively homogeneous clusters, which are based on the measured determinants of European consumers.

On the basis of the available data for the year 2023, published by the European Statistical Office – Eurostat, a dendrogram is obtained, which shows that the formed clusters are sufficiently homogeneous (Figure 1).

Figure 1. Dendrogram to generate clusters of the 27 Member States of the European Union measuring digital skills for online shopping of consumers in 2023



Source: Eurostat. <http://epp.eurostat.ec.europa.eu/>;
<https://ec.europa.eu/eurostat/databrowser/view/tin00028/default/table?lang=en>.

On the basis of the data for the five quantitative characteristics measuring the digital skills of European consumers for online shopping, a description of the clusters is reached. The quantitative features that are used for the cluster analysis and the new variable that indicates belonging to a specific cluster allow the corresponding description. With the help of the following Table 1, a report is visualized that presents the specific number of the totality of European Union Member States that belong to a given cluster.

According to the results in Table 1, the first cluster includes 17 member-states of the European Union, mostly from Western and Northern Europe – Belgium, Czechia, Denmark and others. The second cluster covers 8 countries, mainly from South-East and South-West Europe – Bulgaria, Romania and others. Within the borders of the third cluster are only 2 countries – Germany and France, located in Central and Western Europe.

Table 1. Groups of countries belonging to a given cluster – report

Average Linkage (Between groups)		Level of Internet access – households	Internet purchases by individuals	Employees, self- employed, family workers	Available income	Individuals with high formal education
1	Mean	94.6159	75.8712	84.9994	215144.18	89.7135
	N	17	17	17	17	17
	Std. Deviation	2.23179	9.24406	7.02917	235979.027	5.17679
2	Mean	89.8438	54.4700	66.9762	227617.13	79.6963
	N	8	8	8	8	8
	Std. Deviation	1.98885	5.25209	6.29013	455266.938	5.05101
3	Mean	92.5000	77.2050	86.8750	2187494.50	90.2000
	N	2	2	2	2	2
	Std. Deviation	1.18794	0.38891	0.36062	689349.209	1.32936
Total	Mean	93.0452	69.6289	79.7981	364939.89	86.7815
	N	27	27	27	27	27
	Std. Deviation	2.99565	12.67347	10.63903	619949.925	6.73757

Source: Eurostat. <http://epp.eurostat.ec.europa.eu/>;
<https://ec.europa.eu/eurostat/databrowser/view/tin00028/default/table?lang=en>.

The comparative analysis between the three distinct clusters serves to reach the conclusion that the third cluster has the highest average values with a predominant share of all characteristics – „online purchases by individuals“, „employed, self-employed, family workers“, „available income – households“, „natural persons with higher education“, with the exception of a relatively lower value of the indicator „level of Internet access – households“. Specifically, in this third cluster comprising Germany and France, the highest mean value – with a value of 2187494.50 is assumed by the variable „disposable income – households“, followed by the variable „level of internet access – households“ – with a value of and 92.5000, and the variable „individuals with higher education“ – with a mean value of 90.2000. The first cluster is in second place according to the measured quantitative characteristics, and the second cluster is in third place. Through the chosen research method, a total of three clusters or groups of countries are generated, which can be named as follows: see Table 2.

Table 2. Clustering of the 27 Member States of the European Union by the levels of digital skills of consumers for online shopping in 2023

Cluster name	Countries
Cluster: „Countries leaders with best results in digital skill levels of consumers for online shopping“	Germany, France
Cluster: „Countries with very good results in digital skill levels of consumers for online shopping“	Belgium, Czechia, Denmark, Estonia, Ireland, Spain, Latvia, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Slovenia, Slovakia, Finland, Sweden
Cluster: „Countries with comparatively lower results in digital skill levels of consumers for online shopping“	Bulgaria, Romania, Croatia, Greece, Italy, Cyprus, Lithuania, Portugal

Source: Eurostat. <http://epp.eurostat.ec.europa.eu/>;
<https://ec.europa.eu/eurostat/databrowser/view/tin00028/default/table?lang=en>.

On the basis of the available data for the year 2023, published by the European Statistical Office – Eurostat, a dendrogram is obtained, which shows that the formed clusters are sufficiently homogeneous. Performing hierarchical clustering allows generating a total of three clusters, which are formed by the 27 European Union member states studied. In essence, the generation is based on the selection of the distance between the observed units that is optimal from the

point of view of the research objective. The three formed clusters are characterized by statistically significant differences in terms of the measured indicators measuring the digital skills of users for online shopping.

The testing of the five variables whose values are involved in determining the individual clusters shows that they all have statistical significance, which is confirmed and illustrated using Table 3.

Table 3. Determination of the participation of the variables in the distribution of the 27 member-states of the European Union by clusters in 2023

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Level of internet access – households Average Linkage (Between groups)	Between Groups	(Combined)	124.528	2	62.264	13.736	0.000
	Within Groups		108.794	24	4.533		
	Total		233.322	26			
Internet purchases by individuals Average Linkage (Between groups)	Between Groups	(Combined)	2615.555	2	1307.777	20.113	0.000
	Within Groups		1560.485	24	65.020		
	Total		4176.040	26			
Employees, self-employed, family workers Average Linkage (Between groups)	Between Groups	(Combined)	1875.276	2	937.638	21.078	0.000
	Within Groups		1067.637	24	44.485		
	Total		2942.913	26			
Available income Average Linkage (Between groups)	Between Groups	(Combined)	7175729795622.821	2	3587864897811.411	30.567	0.000
	Within Groups		2817055842977.846	24	117377326790.744		
	Total		9992785638600.668	26			
Individuals with high formal education Average Linkage (Between groups)	Between Groups	(Combined)	571.124	2	285.562	11.251	0.000
	Within Groups		609.142	24	25.381		
	Total		1180.266	26			

Source: Eurostat. <http://epp.eurostat.ec.europa.eu/>;
<https://ec.europa.eu/eurostat/databrowser/view/tin00028/default/table?lang=en>

The data from Table 3 are grounds for assuming that all quantitative signs took part in the distribution of the units of the population into clusters. The level of significance of the five specific features (Sig.) is less than the chosen risk of error ($\alpha = 0.05$), which is a reason to assume that the measured features have a discriminating power and therefore can be included and remain in the analysis. The results, showing that all significance levels were less than 0.05, serve to conclude that the quantitative features sufficiently well distinguish the three clusters.

5. Conclusions

The obtained results allow reaching the conclusion about the existing need for studies of similarities and differences in the levels of digital skills for online shopping of European consumers. The practical utility of such studies is in the determination of variables or factors that influence and influence consumer behaviour and also in the search and determination of correlational dependencies.

In this sense, in the present study the level of internet access of households, the online purchases of individuals, the status according to employment and education and the disposable income of households are perceived as part of the key variables on the basis of which the possessed digital

skills for online shopping are measured to consumers from the 27-member states of the European Union.

Based on the research presented, the similarities and differences between the evaluated countries in terms of digital skills for online shopping, carried out in 2023, are established. The application of the method of hierarchical cluster analysis by five quantitative characteristics serves to distinguish and form three relatively homogeneous clusters with relevant characteristics regarding the evaluated type of user skills. The comparative analysis of the results allows us to determine differences between consumers living in mainly Western and Central Europe compared to those in South-East and South-West Europe. A significant part of the discrepancies arises from differences in the economic well-being of consumers, measured by the disposable income of households in the European Union. Overall, in their systematicity and interconnectedness, economic and demographic variables will continue to drive and inform the development of European consumers' online shopping digital skills, suggesting the need for further research on these issues.

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**LET'S TAX THE RICH: ЕКОЛОГИЧЕН ПРЕХОД, КЛИМАТИЧНА
(НЕ)СПРАВЕДЛИВОСТ И СОЦИАЛНО-ИКОНОМИЧЕСКИ НЕРАВЕНСТВА В
ЕС В СВЕТЛИНАТА НА ЕВРОПЕЙСКАТА ГРАЖДАНСКА ИНИЦИАТИВА**
**LET'S TAX THE RICH: ECOLOGICAL TRANSITION, CLIMATE (IN)JUSTICE
AND SOCIO-ECONOMIC INEQUALITIES IN THE EU IN THE LIGHT OF THE
EUROPEAN CITIZENS' INITIATIVE**

Резюме: Статията разглежда отношенията между Европейската гражданска инициатива и Социално-екологичния преход в Европейския съюз на фона на растящите социални и икономически неравенства, засилени от ескалацията на екологичните кризи, свързани с промените в климата. Въпреки заявката на ЕС да постигне климатична неутралност, без това да вреди на социалната справедливост, редица международни институции, учени и граждански организации изразяват позиция, че трябва да се търсят по-справедливи начини и източници, включително финансови, които да отразяват неравнопоставеността между гражданите, създаваща нов вид несправедливост – т.нар. климатична несправедливост. Пример в тази насока е европейската гражданска инициатива *Tax the Rich*, която предлага въвеждане на данъчно облагане на големите богатства за финансиране на прехода. Тя откроява опасността от установяването на един „Екологичен ЕС“, основан на климатична несправедливост, както и необходимостта той да се осъществи с демократичното съгласие на гражданите. Инициативата може да се тълкува и като призив за разширяване на преразпределящите функции на ниво ЕС и за укрепване на стратегиите за социална справедливост на трансевропейско ниво.

Ключови думи: Европейска гражданска инициатива (ЕГИ); социално-екологичен преход в ЕС; климатична (не)справедливост, социално-икономически неравенства; „зелен данък“ върху големите богатства

Abstract: The paper aims to problematize the interactions between the European Citizens' Initiative (ECI) – a major instrument for Participatory Democracy in the European Union's policies and the Social-Environmental Transition, combating both climate change and social exclusion. Despite the EU's ambition to achieve climate neutrality, without harming social justice, a number of international institutions, scientists and civic organizations express a position that to achieve the goals of the Green Transition fairer ways must be sought, including new financial sources that more directly reflect the growing social and economic inequalities, creating a new type of injustice – the climate injustice. In particular, the arguments expressed in *Tax the Rich* ECI, which proposes as a measure the taxation of great wealth to finance the Green Transition, are considered. It highlights the danger of establishing an "Environmental EU" based on climate injustice, as well as the need for the transition to be realised with the democratic consent of citizens. The Initiative can also be interpreted as a call to expand the redistributive functions of the EU and to strengthen social justice strategies at the trans-European level.

Keywords: European Citizen's Initiative; Socio-Ecological Transition; Climate (In)Justice; Socio-Economic Inequalities; Green Wealth Tax

JEL: B55; D62; D63; F23; H23; H26; H41; Q56

1. Увод

Европейският съюз (ЕС) е несъмнен лидер в прилагането на политики за противодействие на климатичните промени. Те налагат цялостно преосмисляне на икономическия и социален модел на обществата ни.

В тази логика, ЕС създаде поредица от инструменти като Зеления пакт и разви комплексни политики за декарбонизация на икономиките за постигне на „въглеродна неутралност“. Пътят към този модел е известен като Социално-екологичен преход,

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основан на равнопоставеността между Природа и Общество – належащите и нерядко болезнени икономически и обществени трансформации не трябва да увеличават социалната несправедливост (Galgóczy, 2024).

Остава обаче отворен въпросът по какъв начин и с какви средства ЕС може да осъществи този преход, без „да таксува“ най-ошетените. Пазарният принцип за „управление“ на емисиите е спорен, защото той не само не доведе до желаните резултати, но и разкри неочаквани възможности пред „еко-трафика“, довел до гигантски злоупотреби с ДДС върху квотите на въглеродните емисии. Във Франция този тип измами са оценяват на 1.6 млрд. евро и на 5 млрд. евро за целия ЕС (Walther, 2017). Все по-трудно е да се поддържа убеждението, че корпорациите могат се реформират „отвътре“ чрез Корпоративна социална отговорност и нейната по-нова версия (ESG – Environmental, Social and Governance). Както посочват Pucker и King, „рискът, свързан с ESG инвестирането е, че то би могло да убеди политиците, че може да се справи с такива огромни социални предизвикателства като климатичните промени – в действителност, само правителствена намеса може да помогне на планетата да избегне климатичната катастрофа“ (Pucker, King, 2022).

Немаловажен е и фактът, че самите климатични промени изглеждат далечни и не толкова съществени, колкото непосредствените зелени политики, от които хората страдат „тук и сега“. Това, което е нужно, е не по-малко действия за климата, а „по-справедлив преход“ (Galgóczy, 2024). Редица международни институции, учени и граждански организации изразяват позиция, че за постигането на целите е нужно да се търсят по-справедливи начини, включително нови финансови източници, които по-пряко да повлияват социалните и икономически неравенства, създаващи нов вид несправедливост – т.нар. „климатична несправедливост“.

През 2012 г. ЕС прие законодателство, с което създаде Европейската гражданска инициатива (ЕГИ), съвременен прочит на Демокрацията на участието, позволяващ на 1 милион европейски граждани от минимум една четвърт от общия брой на държавите членки при определени условия да отправят законодателно предложение към Европейската комисия. ЕГИ е основен инструмент за гражданско сътрудничество по общоевропейски и глобални въпроси и иновативна форма на транснационална демокрация на участието (Conrad, 2011; Csibor, 2023). Сред инициативите, получили широка подкрепа, се откроява „Водата и санитарно-хигиенните условия са човешко право. Водата е обществено благо, а не стока!“ – първата инициатива, получила отговор от Европейската комисия (Right4Water, 2024).

Статията разглежда отношенията между ЕГИ в качеството ѝ на демократичен гарант на социалната справедливост в ЕС и Социално-екологичния преход в Съюза, на фона на растящите социални и икономически неравенства, подхранени от ескалацията на екологичните кризи, породени от промените в климата.

2. Методология

Изследването се позовава на проучвания на общественото мнение, бази данни на международни институции и неправителствени организации, доклади на Европейската агенция за околна среда, както и информация от сайта на Европейската гражданска инициатива (ЕГИ). Използвани са и научни и журналистически анализи по разглежданите теми – икономически и климатични неравенства, екологични рискове, демокрацията в ЕС. Подходът е комплексен и интердисциплинарен, а отправна точка на изследването е Европейската гражданска инициатива *Tax the Rich*.

3. Състояние на проблема

Понастоящем най-богатият 1% от хората в света притежава почти половината от световното богатство, като данъците, които най-заможните хора и компании в света плащат, за да поддържат публичните блага в своите държави, устойчиво са намалявали от 1950 до 2021 г. Същевременно, този 1% произвежда повече емисии на CO₂ отколкото най-бедната половина от световното население (Alstadsæter et al., 2024). Паралелно с това, незаконното, полузаконното и напълно легалното избягване на данъци се разраства (Ibid), пораждайки несправедливост, която се засилва от факта, че именно най-бедните страни и най-уязвимите членове на обществата са първите жертви от последиците от промените в климата.

Редица изследователи предлагат „по-справедлива международна система за данъчно облагане на големите богатства“, която да се основава на сътрудничество и споделена информация между държавите в глобален план (Zucman, 2024); по-конкретно се настоява за облагане с 2% на мултинационалните компании, което би донесло 250 млрд. долара годишно (Alstadsæter et al., 2024). За сравнение, развиващите се страни се нуждаят от 500 млрд. годишно, за да посрещнат климатичните предизвикателства (Ibid). Не е странно, че дори част от най-богатите хора на планета, т.нар. „Патриотични милиардери“, притеснени за социалната стабилност и бъдещето на демокрацията, желаят да бъдат облагани с повече данъци (McCloskey, 2024; Proud to Pay More Report, 2024).

Тази ситуация характеризира и ЕС. Според проучване на Tax Justice Network, базирано на World Inequality Database, 0.5% най-богати граждани и фирми в ЕС притежават почти 20% от богатата. Според същото изследване, въвеждането на умерен прогресивен данък върху най-богатите 0.5% във всяка държава би донесло повече от 213 млрд. евро допълнителен приход в бюджета на държавите (Michel, 2024). В свой доклад за избягването на данъци, Европейската данъчна обсерватория посочва, че данъчните системи в повечето страни позволяват на най-богатите да плащат данъци, „вариращи между 0% и 0.5% от реалното им богатство, така че те често плащат по-малко от обикновените граждани“ (Alstadsæter et al., 2024, p. 12).

От друга страна, от 2004 до 2021 г. броят на живеещите под социалния минимум не спира да расте (McCaughey, 2024). Проучване на ЕС показва, че мнозинството от интервюираните граждани (81%) счита, че разликите в доходите в държавата, в която живеят, са твърде големи (EUROBAROMETER, 2023). 78% смятат, че правителствата трябва да правят повече, за да редуцират тези неравенства; гражданите, споделящи мнението, че ЕС е длъжен да прави повече в тази насока, са 73%, а 78% считат, че това трябва да стане с по-целенасочени социални политики (Ibid).

Паралелно с това, според проучване на Европейската агенция за околна среда, темпът на климатичните промени в Европа е два пъти по-бърз отколкото в други части на света (EEA Report, 2024). В него се посочват 36 различни видове риск, породени пряко или косвено от климатичния хаос, свързани със сигурността на храните, състоянието на екосистемите, инфраструктурата, финансовата стабилност на държавите и човешкото здраве. Според изследването, повечето от тези рискове са достигнали критични нива, които могат да станат необратими и да се превърнат в катастрофа.

Tax the Rich

В отговор на всички тези проблеми се явяват предложенията на гражданската инициатива „Данъчно облагане на големите богатства за финансиране на екологичния и

социалния преход“ (*Tax the Rich*). Инициаторите ѝ изхождат от тезата, че избягването на данъци не е природен закон, а политическо решение и призовават да се въведе европейски данък върху големите богатства за финансиране на предвидените мащабни трансформации в ЕС. Според тях „това ще допринесе за собствените ресурси на Съюза (...) и за сътрудничеството за развитие, съфинансирано от държавите членки. Приносът ще се използва за борба с изменението на климата и с неравенствата и ще спомогне да се гарантира по-равностойно финансово участие на европейските граждани за постигането на тези цели“ (Let’s make wealth tax a reality: urgent call for greater social and climate justice, 2024).

Искането се основава на наблюдението „че данъчните системи в Европа тенденциозно облагодетелстват най-богатите“, като имплицитно ги поставят в привилегировано положение. Нещо повече, според инициаторите, в почти всички държави в ЕС, данъчната тежест върху най-заможните е намаляла, като за последните 30 години таксите върху големите богатства са редуцирани повсеместно (*Tax the Rich*, 2024).

Новият собствен ресурс, който ще бъде натрупан в резултат от това „следва да бъде предназначен за извършването на справедлив екологичен и социален преход, като се финансират политиките на Съюза и на държавите членки, посветени на тази цел“. В заключение, той отговаря на нуждата от „основно пренасочване на Европейския съюз към справедлив и демократичен климатичен преход“ (Ibid). С други думи, освен от „Зелена сделка“, ЕС се нуждае и от Социално-екологичен договор, скрепен със съгласието на всички граждани.

4. Резултати от изследването

Съчетанието между климатични рискове, засягащи най-уязвимите, необходимостта да се финансира преходът към един „по-зелен свят“, избягването на справедливо данъчно облагане спрямо мултинационалните компании („шампиони“ в производството на въглеродни емисии), заедно с усещането за растяща социална и икономическа несправедливост, създават взривоопасен коктейл, който носи рискове за демокрацията : „тези очевадна несправедливост подкопава нормалното функциониране на нашите демокрации; тя задълбочава неравенствата, намалява доверието в институциите и води до ерозия на обществения договор.“ (Alstadsæter et al., 2024).

Засега гражданската инициатива *Tax the Rich* не успява да събере достатъчен брой привърженици, за да принуди Европейската комисия да излезе със законодателно предложение. Тя обаче говори за обществени настроения, споделяни сред широк кръг от граждани в различни страни в ЕС. Тези граждани признават нуждата от Социално-екологичен преход и одобряват целта и посоката му, но не и начините, по които той се осъществява; те настояват преходът да гарантира по-справедлив (пропорционален на въздействието върху климата) начин за участие, като таксува онези, които са най-облагодетелствани и които в най-голяма степен са отговорни за екологичните и социални кризи в нашите общества.

В този смисъл, борбата срещу климатичните промени и тази за намаляване на социалните и икономически неравенства, които са двете страни на една и съща монета, си остават задължение на държавите и на ЕС – те се възприемат като основни гаранتي за защита на човешките права, както и за осигуряване на достъп до публични блага. Постигането на общоевропейски консенсус, позволяващ реално данъчно облагане на свръхбогатите би осигурил приходи, които да облекчат държавните бюджети на

страните членки по отношение на Екологичния преход; той би изпълнявал и ролята на нравствен коректив и морален отдушник във времена на драстични неравенства.

5. Изводи

Европейската гражданска инициатива е общоевропейски граждански форум, но и механизъм за демократичен контрол върху решенията на институциите на ЕС. Както пише Пиер дьо Розанвалон, демокрацията винаги ще се нуждае от „контравласти“, които да упражняват надзор и контрол върху решенията на управляващите (Rosenvallon, 2006). Гражданската инициатива *Tax the Rich* алармира както за реалните опасности пред установяването на един Екологичен ЕС, основан на климатична несправедливост, така и за необходимостта той да се осъществи със *справедливия принос* на всички граждани. Тя може да се тълкува и като призив за разширяване на преразпределящите функции на ЕС и за укрепване на социалната справедливост на трансевропейско ниво като нов етап в надграждане на социалната държава от близкото минало в рамките на един нов „Европейски съюз на благоденствието“. Защото използването на големите богатства от публичен контрол е заплаха не само за Зеления преход в ЕС, но и за оцеляването на самия ЕС като проект на споделеност, солидарност и единство в многообразието.

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ГЪВКАВОСТ НА СОЦИАЛНАТА ПОДКРЕПА В УСЛОВИЯТА НА КРИЗИ (УРОЦИ ВЪЗ ОСНОВА НА ОПИТА В СОЦИАЛНОТО ПОДПОМАГАНЕ ПРЕЗ ПАНДЕМИЯТА COVID-19)

SOCIAL FLEXSECURITY IN CRISIS CONDITIONS (LESSONS BASED ON THE EXPERIENCE OF SOCIAL ASSISTANCE DURING THE COVID-19 PANDEMIC PERIOD)

Резюме: Цел на статията е да представи оценки, изводи и препоръки за създаване на гъвкава система за социална подкрепа на населението при възникване на кризи от различен характер. Изследователски задачи: (1) да се очертае виждане относно предлаганото тук понятие „гъвкавост на системата за социална защита“ (social flexsecurity); (2) да се представят оценки относно гъвкавостта на социалното подпомагане през периода на пандемията COVID-19; (3) да се формулират препоръки. Това е в съзвучие с препоръката на Европейската мрежа за социална политика (ESPN), националните правителства да използват реформите в отговор на кризата COVID-19 за изграждане или укрепване на адекватни, всеобхватни и устойчиви системи за социална закрила, които да включват мерки за задействане и възстановяване в отговор на криза.

Ключови думи: гъвкавост на социалната защита; социална подкрепа; социално подпомагане

Abstract: The purpose of the article is to present assessments, conclusions and recommendations for the creation of a flexible system for social protection of the population in the event of crises of a different nature. Research tasks: (1) to outline a conceptual view on the „social flexsecurity“ term; (2) to present assessments on the flexibility of social assistance during the COVID-19 pandemic period; (3) to suggest recommendations.

Keywords: social flexsecurity; social protection; social support; social assistance

JEL: E61; H55; I30; I38

1. Увод

Настоящата статия е базирана на резултати от колективен научноизследователски проект на ИИИ-БАН „Гъвкавост на социалната подкрепа в условията на кризи (опит и уроци от периода на COVID-19 пандемията 2020-2022 г.)“, с изпълнители проф. д-р Г. Шопов, проф. д-р П. Салчев, доц. д-р Т. Пенева.

Важна част в изследването (в което авторът разработва частите, свързани с 5 програми за социално подпомагане) заема оценката на механизмите и програмите за социална защита, тяхната адаптивност в условията на криза, силни страни, недостатъци и възможности за оптимизиране. На тази база се обобщават изводи, правят се „секторни“ предложения и се разработва концептуално виждане относно провеждането на координирана гъвкава социална подкрепа при кризи.

2. За понятието „гъвкавост на системата за социална защита“

В основата на концептуалното виждане за това понятие е идеята за:

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- предварителна готовност на държавата и обществото за оказване на кризисна социална подкрепа;
- гъвкавост на социалната защита (*social flexsecurity*) – нов термин, който заимства от концепцията за „флексикюрити“ (*flexicurity*) на пазара на труда², но – за пръв път в известната ни литература, видоизменяме и въвеждаме в употреба за целите на посочения проект);
- гъвкава и сигурна кризисна социална подкрепа чрез многообразие³.

В концептуално отношение, в случая, гъвкавостта (в общ план) се разбира като способност на дадена система да реагира на външни фактори, като своевременно променя параметрите си съобразно това влияние. Системата запазва свои основни характеристики, но може да променя структурата си с оглед успешното си функциониране за постигане на своите цели и задачи.

Гъвкавостта, следователно е вътрешно свойство на системата, а не е резултат от нейното функциониране; резултатите обаче дават възможност да се съди за гъвкавостта.

Подходящи критерии за гъвкавост при рязка и/или значителна негативна промяна на външната среда са експертни оценки за: (а) ефективността и ефикасността на системата за социална защита⁴ (ССЗ); (б) адекватността на социалните трансфери; (в) тенденциите в развитието на социалната защита през призмата на добри национални и чуждестранни практики и постигнати резултати при сходни промени на външната среда.

В този контекст, „**гъвкавостта на системата за социална защита**“ (*social flexsecurity*) може да се разбира като: предварителна готовност за промени на системата при промяна на външната среда; навременност на промените; приспособяване на съществуващи програми с цел преориентиране на помощта към по-уязвими групи; тяхната посока на разширяване/промяна – хоризонтална (напр. чрез временна промяна на критериите за допустимост, водещи до увеличаване *обхвата* на съответните социални мерки) или вертикална (напр. чрез временно увеличаване на *величината или продължителността* на подпомагане, за да се посрещнат допълнителните нужди на получателите и по-добра адекватност)⁵.

Пример за хоризонтално разширяване е временното прекратяване от март до декември 2020 г.) на изисквания за достъп до месечни социални помощи. Пример за вертикално разширяване е облекчената от юли 2023 г. процедура за отпускане от фонд „Социална закрила“ на социална помощ до 2500 лв. на хора и семейства, чиито жилища са пострадали при кризисни ситуации.

„Адекватността“ се свързва най-вече с равнището на отпусканите помощи, респ. със съответствието на социалните услуги спрямо неотложните нужди на уязвимите потребители в условията на социална изолация поради въведено извънредно положение или извънредна епидемична обстановка, както и с размера на предвидените и разходвани публични финансови средства. Адекватността може да се разглежда като *фактор за сигурността* на бенефициентите, както и като резултат или *проява* на гъвкавостта.

² В публикувано наскоро изследване е направена синтезирана характеристика на гъвкавостта на пазара на труда, вкл. на концепцията „флексикюрити“ (Loukanova, Houbenova-Delisivkova, 2024).

³ „Security through diversity“ бе наименованието на пенсионната реформа в Полша, започната в началото на 1997 г. Security through diversity е подход, при който се прилагат предварително подготвени мерки за отговор на заплахи, чието настъпване не може да бъде предвидено.

⁴ „Социална защита“ и „социална подкрепа“ тук се използват като синоними.

⁵ Термините „хоризонтално“ и „вертикално разширяване“ са използвани в ESCAP, 2020. Вж. също Cou-douel et al., 2023.

Гъвкавостта на социалното подпомагане и респ. – на ССЗ, допринасяща и водеща до социална гъвкава сигурност, може да се разглежда като специфична част от концепцията за адаптивна социална защита (АСЗ). „АСЗ се появи като гъвкав и динамичен подход към социалната защита през последното десетилетие. Той съчетава и използва синергия между социална защита, управление на риска от бедствия (УРБ) и адаптиране към изменението на климата и позволява социалната защита да бъде използвана като ефективен инструмент за намаляване на уязвимостта на домакинствата към различни шокове, като икономически спадове, природни бедствия, конфликти и насилие, принудително разселване и извънредни ситуации в здравеопазването, включително неотдавнашната пандемия от COVID-19... Подходът АСЗ интегрира базова социална защита с управление на риска от бедствия и адаптиране към изменението на климата“ (Coudouel et al., 2023).⁶

3. Оценки за гъвкавостта на социалното подпомагане през периода на пандемията COVID-19

За социалната закрила на населението чрез социалното подпомагане е характерно следното.

Силни страни:

- Използване на всички икономически форми на подпомагане – в пари и натура, съчетани със социални услуги. Тази диверсификация и комбиниране позволява по-адекватен отговор на потребностите на най-уязвимите групи.
- Надграждане на съществуващи програми с изменения, разширяващи техния обхват – например допълнителната еднократна помощ за отопление в края на 2021 г.; смекчаването на условията за достъп до месечните помощи.
- Въвеждане на нов вид помощ – например месечните целеви помощи за родители за периода, в който в училището/детското заведение няма присъствени занятия поради извънредната епидемична обстановка.

Слаби страни:

- Липса на предварителна готовност („протоколи“, „схеми“, „мерки“, финансови разчети, местни списъци с уязвими лица и семейства, ясно разпределение на отговорностите между институциите и пр.) за бързо адаптиране и спешни адекватни и координирани отговори на социалното подпомагане при настъпването на криза. С някои изключения (напр. осигуряването още през март 2020 г. на по-облекчен достъп до месечните социални помощи) новите, допълнителните или адаптираните мерки за подпомагане се въвеждат с голямо закъснение.
- Пасивен характер на подпомагането – то е насочено най-вече към подкрепа за справяне с текущата кризисна ситуация. Социалното подпомагане не е ориентирано към осигуряване на предварителна *подготвеност* (особен вид „превенция“), както на системата като цяло, така и на самите хора за действия при кризи. То не е ориентирано и към осигуряване на по-продължителна, „*посткризисна подкрепа*“. Пример е забавената подкрепа на хората, пострадали от наводненията в община Карлово през септември 2022 г. – те получават еднократните помощи от 375 лв. две седмици след бедствието; фургони за „временно“ настаняване пристигат след повече от месец; дарените средства в размер на около 1.5 млн. лв. започват да се разпределят от общината след около 2 месеца.

⁶ За повече подробности относно концепцията за АСЗ виж също Bowen et al., 2020.

В обобщение може да се каже, че петте анализирани програми за парично социално подпомагане имат различни видове положително въздействие върху подкрепата на населението и социално-икономическата устойчивост на хората в условията на криза. Повечето от програмите предоставяха на бенефициентите някои възможности за „справяне“ по време на здравно-икономическата криза. По-рядко някои от тях включват белези на изграждане на „предварителна подготовка“ (например помощите за отопление, които се отпускат в началото на зимния сезон) или „приспособяване към кризисната среда“ (например предоставянето на социални помощи за родители за периода, в който в училището/детското заведение няма присъствени занятия поради извънредната епидемична обстановка).

4. Препоръки за оптимизиране на политиките в областта на социалната подкрепа на населението в условията на кризи

4.1. Общи принципи и подходи към оптимизирането

Концепцията за адаптивна социална защита (*adaptive social protection*) – АСЗ, като част от която може да се разглежда предлаганото тук разбиране за гъвкавостта на системата за социална подкрепа, разчита на четири „градивни блока“:

- *„Институционални договорености и партньорства.* Да подпомогне лидерството на правителството при координирането на участниците, основано на ясното формулиране на ролите и отговорностите.
- *Данни и информация.* Да се гарантира, че проектирането и изпълнението на АСЗ програмите се градят върху информация за уязвимостта на домакинствата към шокове и техния капацитет да се справят и възстановяват, включително чрез динамични социални регистри.
- *Програми и системи за предоставяне.* За насърчаване на програми и системи за предоставяне, които реагират на сътресения, тъй като те са предвидили и планирали сътресения.
- *Финанси.* Да се създадат стратегии за финансиране на риска, които насърчават проактивното планиране на реакцията, позволяват наличието на финансиране в случай на шок и ограничават закъсненията в реакцията“ (Coudouel et al., 2023).

След разглеждания тригодишен период на COVID-кризата, през 2023 г. в редица елементи на българската система за социална защита бяха направени положителни промени. Те обаче не бяха предприети в резултат на уроци, извлечени от официални оценки и за да преодолеят проявилите се през пандемията слабости на програмите за социална, а по-скоро под влияние на други фактори и най-вече в изпълнение на ангажименти по НПВУ.

От гледна точка на гъвкавостта на социалната подкрепа в кризисни условия, може да се направят следните предложения, които да се разглеждат като концептуални рамки за нейното оптимизиране:

1. В условията на кризи промените в социалната подкрепа би следвало да почиват на *принципи* като комплексност и взаимна допълняемост, навременност, адекватност, по-широк обхват и насоченост. Тези постулати могат да се комбинират със следните *принципи и мерки* за промяна на съществуващите програми и използването им като инструмент за адекватна реакция при кризи (ESCAP, 2020):

- използване на части от действаща програма, като например списък на бенефициентите, персонал, регистрация или механизъм за плащане;
 - вертикално и хоризонтално разширяване на програмите;
 - пренасочване – приспособяване на съществуващата програма с цел пренасочване на помощта към по-уязвими групи.
2. Въвеждане на предварително нормативно определени правила и механизми за оказване на социална подкрепа в кризисна среда. Предвиждане на възможност за задействане на тези механизми на национално, регионално, местно или локално равнище при настъпване на шокови промени и в зависимост от мащаба на въздействие на факторите.
 3. Подобряване на финансирането и администрирането на програмите чрез:
 - разработване на финансови модели и на предварителни вариантни разчети за оценка на бъдещи разходи за социална подкрепа при кризи;
 - изготвяне и прилагане на разпоредби за временно спиране на оценката на изпълнението на условията за достъп при криза;
 - възстановяване на мястото и ролята на министъра на труда и социалната политика в Националните програми за намаляване на риска от бедствия. За разлика от Националната програма за 2014-2018 г., такава роля не е заложена в програмата за текущия период 2021-2025 г.
 4. Съществуващите, адаптираните и новите програми/мерки/операции за социална подкрепа, въведени или променени и прилагани по време на COVID-19 – пандемията, следва да станат обект на последваща оценка. На тази основа може да се разработи „Национална концепция за реакция в областта на социалната закрила в случай на криза“.
 5. Мерките за кризисна социална защита на населението следва да бъдат част от стратегическите и оперативни документи за защита на населението, разработвани на национално, областно и общински ниво.

4.2. По-конкретни предложения за подобряване на гъвкавостта на социалното подпомагане в кризисна среда:

- Въвеждане на изрични правила за подпомагане в кризисна среда, вкл. за навременно задействане на съответните адаптирани механизми – особено за предоставяне на еднократните, на месечните и на енергийните помощи.
- Временно вертикално разширяване на социалната подкрепа чрез временно увеличаване на величината на месечните, енергийните и семейните помощи, както и на месечната финансова подкрепа за хората с трайни увреждания или временно увеличаване на продължителността на предоставянето на енергийните помощи, а също и преобразуване на еднократните помощи в периодични. Размерът на еднократната помощ (както и размерът и продължителността на предлаганата тук периодична помощ) могат да бъдат предварително диференцирани съобразно спецификата и тежестта на проявление на съответния риск.
- Временно хоризонтално разширяване обхвата на програмите за парично социално подпомагане чрез премахване или смекчаване на стандартно прилаганите критерии за допустимост на подаваните документи (най-вече при месечните, енергийните и семейните помощи за деца), както и ускоряване на процеса на оценка.

- Въвеждане на механизми за пренасочване към по-дългосрочни програми за социална подкрепа – например от еднократни към месечни помощи.
- Въвеждане на възможности за гъвкаво прилагане при възникване на кризи от регионален и местен характер на по-облекчени условия за достъп, но и по-високи по размер еднократни, месечни и енергийни помощи, както и увеличена месечна финансова подкрепа за хора с трайни увреждания.
- Изготвяне на предварителни вариантни разчети за бъдещи разходи за социално подпомагане при кризи, като държавата би следвало да е готова своевременно да задели съответните бюджетни средства.
- При наличието на национален регистър на риска, разработен и поддържан в изпълнение на Националната програма за намаляване на риска от бедствия 2020-2025 г., е целесъобразно да се изготвят списъци на жителите от рисковите райони и на лицата от уязвими групи в тях. Информационните системи на НСИ, НОИ, АСП, АЗ, АХУ, МОН, НАП и пр., дават възможност за това. Особено информативни са данните на АСП от нейната интегрирана информационна система, която във всеки момент може да предоставя актуални данни за бенефициенти на социална подкрепа. Тези данни могат да бъдат структурирани по точното място на местоживееене и да бъдат свързани с регистъра на риска. В този контекст, използването на **изкуствен интелект (ИИ)** в развитието и функционирането на информационната система за целите на ефективна гъвкава система за социална подкрепа е неотложен приоритет. Както се посочва в изследване на ОИСР, засега „в социалната защита ИИ най-често се използва за взаимодействие с клиенти чрез чатботове и за автоматизиране на бекофис процесите. Няколко държави ... използват ИИ за улесняване на откриването на измами. Освен тези примери, използването на ИИ в социалната защита остава ограничено“ (OECD, 2024).

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ASSESSMENT OF THE SOCIAL ASSISTANCE IN KIND IN BULGARIA

Abstract: *The paper analyses the development and opportunities for improving the welfare of Bulgarian society through social benefits in kind. The research objectives are: (1) Analytical review of state social benefits in kind in the country: operational programme „Food“, public canteens and programme „Hot lunch“; (2) Analytical review of the activities of private and non-governmental organizations in this field; (3) Proposing conclusions and recommendations for the development of social assistance in kind in Bulgaria.*

Keywords: *social protection; social economics; government policy*

JEL: *C55; O38; P2; D6*

1. Introduction

Many people in Bulgaria are without or with low incomes as a result of a number of economic, social and structural factors such as the informal economy, long-term unemployment, lack of suitable jobs, especially in poorer regions, and insufficient qualification of a significant part of the population, lack of motivation and connection to the labour market (Zlatinov et al., 2023). Older people with not enough work experience or outside the social security system remain without pensions, becoming dependent on minimum social benefits (MLSP, 2023; World Bank, 2013). People with disabilities and socially vulnerable groups, such as Roma, are also among those who suffer most from a lack of access to sustainable incomes (Shopov, Dimitrov, 2021) or from a deterioration in the effectiveness and efficiency of public policies for people with disabilities (Shopov, 2014).

The low effectiveness of social policy in terms of identifying the poor in society and determining the amount of social payments leads to an exacerbation of the situation, either leaving the needy outside the scope of support or leading to poverty due to low payments of wages, pensions and social assistance (Shopov et al., 2022). Public policies lead to increasing inequalities, also because of the unfavourable tax systems (Stefanova, 2024) or the gender inequalities (Kirova et al., 2005).

Social assistance in kind can have an immediate and direct effect on this particular group of people in need, with no income or with incomes below the poverty line (Nelson, 2012). In addition, it can be a bridge to longer-term solutions, such as promoting social inclusion, increasing educational qualifications, linking to other forms of support and providing information about training or job opportunities (Stein Holden et al., 2004; Armando, B., 2010).

This report attempts to assess changes in social assistance in kind during the COVID-19 pandemic and the refugee crisis of Ukraine, not only from European and national funds but also from the biggest non-governmental organizations (NGO).

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2. State of the Problem

As of 01.01.2023, there are about 60 000 persons receiving hot lunch in Bulgaria, at least 300 thousand persons and their family members supported with food packages and hygiene materials, vulnerable families supported with 1 600 packages for new-born children, and at least 5000 children supported with children's meals for home. In addition, material support is also provided by NGOs, among which the Bulgarian Red Cross (BRC) and the Bulgarian Food Bank (BFB) are more widely represented.

The impact of the measures can only be reported in terms of number of beneficiaries, amount of support, and the variety of products. Beneficiaries are commonly reported as groups of people without income, homeless people, users of social services, elderly people or large families with low income. However, there is no estimate of the size of homeless people or the group in social vulnerability. Their existence can be noted only in the reduction in the average per capita income of households. Often, they may receive social support of the same and different types by several suppliers, without being counted as overlapped.

Poverty reduction and social protection policies are implemented for a group of persons at risk without a clear size or specifics and without a clear trend of development. Collecting data over a longer period of time is challenging, and despite reports of the Agency for Social Assistance (ASA), it is difficult to track how material assistance changes during crises in the country's anti-poverty policies.

3. Methodology / Methodological Approaches

This report analyses only the services provided free of charge to consumers with low or no income. It does not include services such as home patronage care, where users pay a fee to cover part or all of the costs. The social assistance in kind in this report includes the provision of individual food parcels to recipients of social benefits, the hot lunch service and 'public canteens' funded by European or national public resources. Services financed by municipalities are not included.

The study uses a multidisciplinary approach, drawing on the analysis of national data and information on the development and implementation of the food programme under the Fund for European Aid to the Most Deprived (FEAD), national hot lunch initiatives and NGOs. Programme reports, NGO annual reports, academic articles and analyses were used in the analysis.

An assessment is made of the coverage of the programmes, its changes during the two major crises, the coronavirus and the refugee crisis, and the changes in the cost of the service per person per day between 2022 and 2023 due also to the living cost crisis and high inflation during this period.

4. Results of the Study

Food and basic material assistance programme of the FEAD

In Bulgaria, the European Structural and Investment Funds have invested nearly €11.05 bn of the EU budget for the 2014-2020 period (according to the preliminary plan). The FEAD

programme has provided hot lunches to over 50,000 people per month, with an average of 520,000 people² and their family members receiving nearly 300,000 food parcels each year.

The target group is defined by Ordinance No. RD-07-1 was adopted in 2016 for the respective type of support – for individual food packages and for the provision of hot lunch. The target group includes recipients of different types of social assistance with applied income tests and other vulnerability criteria. An additional target group has also been identified for the distribution of food purchased but not received or distributed. The latter group has expanded sharply since 2022, with an additional 40 thousand vulnerable citizens from Ukraine assisted with individual food parcels by the FEAD.

The share of assisted persons in 2018 reached 36.6% of the population living below the poverty line, according to a report by the ASA. The assessment in the ASA reports shows that the provision of food items to persons at high risk of poverty, or the provision of hot lunch, contributes to expanding the effective reach of social assistance programs in the country.

Table 1. Financing plan for OP Food (mn euro)

	Total	2014	2015	2016	2017	2018	2019	2020
FEAD Fund	104,82	14,10	14,38	14,67	14,96	15,26	15,57	15,88
National co-financing	18,50	2,49	2,54	2,59	2,64	2,69	2,75	2,80
Public expenditure	123,31	16,59	16,92	17,26	17,60	17,95	18,31	18,68

Source: OP Food Plan under FEAD 2014-2020.

Additional funding in the COVID-19 crisis was allocated from the national budget by decisions of the Council of Ministers for a hot lunch, with two new programmes complementing and extending the programme, increasing the number of beneficiaries from an average of 50,000 to 53-54,000.

Table 2. Additional pandemic funding from COVID-19

Period	Programme	Funding	Number of users	Number of accompanying measures
01.03.2020 - 30.12.2020	Hot lunch at home in an emergency situation	BGN 14 mn (additional)	29,000	201,500
01.01.2021 – 10.12.2021	Hot lunch in pandemic conditions from COVID-19	BGN 37.5 mn	54,269	-
07.12.2021 – 30.06.2022	Continuation of the programme	BGN 25.4 mn	53,014	260,543

Source: Author's summary.

Main changes in the programme during the crisis

The scope of the Food Programme increased significantly during the refugee crisis with an additional 40,000 food parcels for Ukrainian citizens, and during the coronavirus pandemic crisis with around 3-4 thousand for the Hot Lunch service.

The programme budget increased in the new programming period. The total amount of funding in 2014-2020 reached 305.6 mn BGN, according to the reports of the ASA. In the new programming period 2021-2027, the country will receive funding of BGN 411.7 mn. The annual number of packages increases to 350,000 in the new programming period. The hot lunch service is extended to 57 thousand people in need.

² 540 thousand in 2018, 466 thousand in 2019, 494 thousand in 2020, 553 thousand in 2021.

There is an expansion of the products and services provided under the programme in the new programming period. In addition to food, hygiene materials are also included in the packages, 10 thousand newborn children in families identified as being at risk will be assisted with packages. Also included is a free children's meal for home service for 10 thousand children aged 10 months to three years from families on social assistance.

Alongside material assistance, people receive accompanying support that helps them to overcome their long-term social isolation and poverty.

Public canteens of the Social Protection Fund (SPF)

In Bulgaria, in 2020, 35 public canteens funded by the SPF operate throughout the country, with BGN 3 mn in funding, providing meals at BGN 2.90 per person per day (MLSP, 2019).

Table 3. Public canteens financed by the SPF

Indicators	2018		2019	2020			2021	2022		
	I-II	III-XII	I-XII	I-XII	IV-V	V-VI	I-XII	I-II	III-IX	X-XII
No of persons receiving the service	3893	4251	4081	4141	1589	1391	3035	3045	3045	3045
No of public canteens funded	30	36	35	35	18	15	28	28	28	28
Total cost	474,167	2,401,667	2,877,405	2,942,195	100,346	68,576	2,368,848	2,589,906		

Source: Inquiry under the Access to Public Information Act with ref. №ДЮИ01-3/26.08.2024 to MLSP.

The amount of funding for the service per person per day is as follows:

- Jan 2018 – Mar 2020 – BGN 2.50 food, BGN 0.40 overhead cost/day
- Apr 2020 – 2020-end – BGN 2.70 food, BGN 0.50 overhead/day
- Jan 2021 – Dec 2021 – BGN 2.90 food, BGN 0.60 overhead/day
- Jan 2022 – Dec 2022 – BGN 3.20 food, BGN 0.70 overhead/day

Main changes in the service

The coverage of public canteens funded by the SPF dropped in 2021 and 2022 compared to 2019 by about a quarter, or nearly 1,000 people. The coverage in general is limited, and the Fund's role in poverty reduction through material assistance is minimal. It is evident that in times of crises, despite donations made to the fund, the number of people supported is declining, which is correlated with a reduction in the number of funded canteens, from 35 in 2018-2019 to 28 in 2021-2022, halving in end-2020. The change in the amount of funding for the one-person-per-day meal is also negligible.

NGO hot lunch service

In 2022, the Bulgarian Red Cross (BRC) operates six free public canteens providing free lunch to 421 people in six cities and is actively involved in the distribution of food parcels through its network of points across the country under the Food Programme of FEAD. This number of people assisted is half the number of the organization's activities just 3 years earlier, in 2019, when 12 pantries were listed on the site supporting over 900 people.

Main changes in the service

BRC has registered to change its activities in the context of the pandemic crisis, by reducing the hot lunch service at the expense of an increase in the provision of products by 2022. The BRC also operated a „Buy and Give“ product campaign with BILLA Bulgaria to support 1,991 vulnerable citizens, 3,247 persons in social institutions and 2,250 Ukrainian refugees and their families.

Food donation activity of the Bulgarian Food Bank

The BFB managed to support 60 thousand people in 2022 and 2023, also welcoming the migrant wave from Ukraine after March 2022, managing to significantly increase donations and support for the new number of people in need. It is important to note the increase in the average cost per kilogram of food, which nearly doubled in 2022 compared to 2021. Not only was the range of people served increased, but also the value of the products offered.

Table 4. Material support activity of the BFB

	2016	2017	2018	2019	2020	2021	2022	2023
Regular	7100	8500	10,020	810	13,585	8700	27,112	-
Total number assisted	35,957	22,134	16,000	14,450	17,834	12,011	64,350	60,945
Average cost per kg of food, BGN	2	3,58	3,59	4,39	5,11	4,79	8,73	10,36
Kilograms of food served	251,000	235,000	220,000	22,000	183,556	128,933	152,394	169,135
Amount of food served	520,000	740,000	525,000	700,000	938,803	618,000	1,368,352	1,703,502

Source: Annual reports of BFB

5. Conclusions

The following conclusions can be drawn from reports on material assistance programmes and NGOs:

- NGOs show high flexibility in addressing crises, with significant changes in the scope, size, and value of food and service packages. BRC increased the package provision financed by its own resource network by cutting public canteens' scope, while BFB quadrupled the number of serviced people during the crisis. The BFB notably expanded its activities in 2022 due to reduced administrative burdens, enabling broader action.
- State-financed social assistance in kind marked minimal increases in the scope and particularly in the amount of support provided:
 - The FEAD Food Programme managed to increase the number of food packages by some 20,000 to 30,000 for Bulgarians (5% of the total) and 40,000 for Ukrainians since 2022.
 - The FEAD Hot Lunch Services increased its scope of recipients by 3-4 thousand (7% of the total) during the crisis. The government maintained continuity during crises, shifting from 'public canteens' to 'hot lunch boxes' during the pandemic to reduce contamination risks.
 - The SPF public canteens reported 25% fewer assisted individuals and a minimal increase in the daily service amount.
- Despite the expansion of the scope, even NGOs often work with beneficiaries, who have undergone an assessment of the local social services. The lack of a unified information system for vulnerable group identification risks duplications.

- The possibility for material assistance to include people outside the scope of the assistance lists is an important element in extending coverage, but the principles under which this happens need to be clarified. There may still be elements of subjectivism.
- The amount of support per day per person lacks a unified measurable standard, as for example what part of the living cost for food is shared. Given the existence of internationally accepted and spread standards, the program lacks reference to these standards.

The most important recommendation on this basis is to increase the program's efficiency and transparency in terms of standards supplied, as well as to further develop long-term measures to lift vulnerable groups out of poverty. This can be done by refocusing accompanying services, introducing more engaging and longer-term forms of employment support, and expanding outreach by diversifying funding and service sources. Accompanying services provided by the Food Programme are an important element for working with vulnerable groups towards moving out of poverty. Currently, this element has not been fully exploited. Roma communities are mainly targeted by education programmes, and it is important to have employment programmes as well. People with disabilities are mainly referred to employment services such as transitional housing, which generally has very limited capacity. Older persons are also supported in cases of need with placement in 24-hour services. Each element has the potential to expand towards longer-term sustainability and a wider range of services. Also, to increase the scope of the services, work with vulnerable groups should be possibly reported in the ESG requirements for corporate organisations.

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**REGIONAL CONVERGENCE AND
SECTORAL DEVELOPMENT**

***РЕГИОНАЛНА КОНВЕРГЕНЦИЯ И
СЕКТОРНО РАЗВИТИЕ***

ВЗАИМОЗАВИСИМОСТ МЕЖДУ ИКОНОМИЧЕСКИ И ДЕМОГРАФСКИ РЕГИОНАЛНИ ПОКАЗАТЕЛИ В БЪЛГАРИЯ – ОЧАКВАНО РАЗВИТИЕ, РЕГИОНАЛНА ПОЛИТИКА

INTERDEPENDENCE BETWEEN ECONOMIC AND DEMOGRAPHIC REGIONAL INDICATORS IN BULGARIA – EXPECTED DEVELOPMENT, REGIONAL POLICY

Резюме: Изследвано е формирането на регионалните различия на основни икономически и демографски показатели в България. Акцентът се поставя на установяване и оценка на взаимозависимостите в изменението им. Проучването в тази насока очертава перспективите на развитие на регионалните различия и визира възможностите за смекчаване на неблагоприятните регионални тенденции.

Ключови думи: регионални различия; регионална политика

Abstract: The formation of regional differences in main economic and demographic indicators in Bulgaria has been studied. The emphasis is placed on finding out and evaluating the interdependencies in their development. The study in this direction outlines the prospects for the development of regional differences and refers to the possibilities for mitigating unfavourable regional tendencies.

Keywords: regional differences; regional policy

JEL: R58; J11

1. Увод

Регионалните икономически различия, дотолкова, доколкото позволяват да се използват сравнителните регионални преимущества, не могат да се интерпретират непременно като негативно явление. Целта на всяка регионална политика (регионална стратегия за икономическо развитие) е в търсенето на балансирано регионално развитие. Развитие, което може да се определи като такова, е това, при което регионалните икономически различия могат да играят положителна роля, като същевременно това не поражда остри социално-икономически проблеми в регионален аспект. Съществуването на регионални различия в този смисъл може да е стимулиращ фактор за икономическо развитие, стига те да не породят сериозни социални неравенства (Ivanov, 1999).

Така нареченото „приобщаващо развитие“ е свързано с две изисквания – да има приемлив темп на икономически растеж, като същевременно да намалява регионалните неравенства, които породят нежелани социални различия. Постигането му невинаги е възможно, което поставя някои страни пред избора – да водят регионална политика в опит да намалят регионалните социално-икономически различия, което може да е свързано с намаляване на икономическата ефективност като цяло, или да оставят пазарните механизми да определят регионалното развитие. Изправени пред тази алтернатива, страните с по-слаби икономики в рамките на ЕС се ориентират към опцията за постигане на по-висока икономическа ефективност като цяло. По правило, при тези страни се наблюдават по-големи регионални различия – съществува ясно изразена

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обратна зависимост между достигнато икономическо равнище и вътрешно регионалното разсейване (Bradley, Untiedt, 2008).

Трябва да се подчертае, че взимането на обосновано решение за провеждане на една или друга политика, целяща постигането на регионална конвергенция, не е лесна задача – трудно е да се прецени какви биха били последствията в средносрочна и дългосрочна перспектива от нарастването на социално-икономическите регионални различия и доколко провеждането на дадена регионална политика с цел намаляване на различията ще доведе до желаните резултати.²

2. Регионални различия

Kuznets (1955) и Capello (2007) дават една формула за връзката между регионално икономическо неравенство и икономическото развитие, представяйки я графично като обърната U крива – $\cap$, показваща, че на един начален етап, когато икономическото развитие расте, регионалните неравенства също нарастват, след което се очаква да се премине един пик (върхът на кривата $\cap$) и по-нататъшното икономическо развитие да води до намаляване на неравенството. Тази логическа постановка за очаквано развитие с достигането на определен пик (развитие съобразно кривата $\cap$) има място като такава, но емпиричните данни поне за един кратък времеви период в рамките на страните от ЕС не потвърждават подобни зависимости. Това може да не отхвърля валидността ѝ за един значително по дълъг период, което е в унисон с разбирането, че икономическото развитие води до конвергенция според неокласическата теория (постигането на конвергенция в резултат на развитието е основополагащо виждане на неокласическия модел).³ Все пак по-високата степен на икономическо развитие, ако не се свързва във всички случаи с намаляване на регионалните различия, винаги тушира негативните социални проблеми, породени от тях.

Миграцията е най-точният показател за това как се развива даден регион и дали е атрактивен. Ако хората не желаят да живеят в този регион, те го напускат, което води до отрицателен прираст на населението по области. За 2022 г. по данни на НСИ в почти всички области при вътрешната миграция се наблюдава броят на изселилите се да надвишава този на заселилите се.⁴ Изключение правят София-град, Пловдив, Варна, Перник и Габрово, като по значителен е броят на заселилите се в София-град, Пловдив и Варна. Миграцията и естественият прираст са довели до намаляване на гъстотата на населението, както за страната, така и по отделни области, като изключение прави само София-град.

Общо гъстотата на населението на един кв. километър пред 2001 г. е 72 души, а през 2022 г. е само 58 души. Трябва да се отбележи, че България е с най-лоши показатели за гъстота на населението от всички страни на ЕС, включително Северна Македония,

² Пример за това е инициативата Странджа–Сакар в началото на 80-те години на миналия век. Чрез нея се търсеше решение за преодоляване на обезлюдяването на този регион, като се даваше сериозен финансов стимул на младите семейства, за да се преместят да живеят там. Имаше такъв процес на заселване благодарение на тази инициатива, но след 1-2 г. повечето млади хора напуснаха региона. Това е пример, че с подобни финансовите стимули трудно се стига до реални резултати.

³ Трябва да се подчертае, че и другите познати теоретически постановки в това отношение не определят общовалидна зависимост между регионално икономическо неравенство и икономическо развитие (Totev, 2020).

⁴ Регионалните различия в изследването се наблюдават на равнище области. За оценката им са използвани статистически методи и показатели. Информация е изцяло по данни на НСИ, като само за показателя гъстота на населението по отделни страни са използвани данни на Евростат.

Сърбия, Албания и Турция (изключение правят Скандинавските страни и Балтийските републики поради климатични особености). Темпът на спадане на този показател за периода 2001-2022 г. е по-висок само в Румъния.

Коефициентът на вариация за показателя гъстота на населението нараства от 169% на 216% за наблюдавания период 2001-2022 г. Същевременно съществува ясно изразена зависимост между гъстотата на населението през 2022 г. и спада на този показател (отношението за гъстота на населението през 2022 спрямо 2001 г.). Коефициентът на линейна корелация между тези два показателя е 0.66.⁵ Това говори за по-висока динамика на намаляване на гъстота на населението в областите с по-ниски показатели за гъстота – например най-голям спад е реализиран в област Видин, която е с най-малка гъстота за 2022 г. – едва 24 души на кв.км., като тя почти двойно е намаляла, (отношението за 2022 г. спрямо 2001 г. е 0.568). Като се вземе предвид и нарастването на относителния дял на хората в нетрудоспособна възраст, се стига до липсата на така наречената „критична маса от население“ за много области, което би представлявало сериозно предизвикателство пред всяка регионална политика, насочена към икономическа конвергенция.

3. Зависимости между регионалните показатели

Има много фактори, които са определящи за атрактивността на даден регион, и като правило те са взаимосвързани. Високият БВП на глава от населението и високите доходи се свързват с показателите, характеризиращи по-високоразвита инфраструктура, което е и определящо за атрактивността на регионите. Коефициентът на вариация за БВП е 27.2% през 2000 г., 47.5% за 2010 г., след което се запазва на постоянно равнище от 44-46% до 2022 г. Той спада с около 20 пр.п., ако изключим София-град. Този за доходите е съответно: за 2008 г. – 16%, през 2015 г. нараства на 19%, а през 2023 г. е 14%, при изключване на София-град този коефициент спада с около 4 пр.п. Очевидно е, че наблюдаваното разсейване по тези показатели, особено при БВП, се формира от различията в равнищата за София-град.

Очаквано е да има зависимост между гъстота на населението и БВП на човек от населението, но това, което е донякъде неочаквано, е тя да е толкова висока. Така коефициентът на корелация през 2001 г. е бил 0.84, 2010 г. – 0.94; 2020 г. – 0.92 и 2022 г. – 0.83 (за малко по-ниския коефициент през 2022 спрямо 2020 г. е възможно да е дала отражение и COVID-19 кризата и увеличаването на възможностите за работа от дома). Така, факторът гъстота на населението се оказва съществен за регионалните различия по отношение на БВП на глава от населението.⁶ Съществува зависимост между доходите средно на лице от населението и гъстотата на населението, която не е толкова силно изразена както при БВП на глава от населението и гъстота на населението; коефициентът на корелация през 2010 г. е 0.46, а през 2023 г. става 0.56.

След като има много тясна зависимост между БВП на глава от населението и гъстотата на населението, се получава нещо като „омагьосан кръг“. Заселването в урбанизираните

⁵ Коефициентите на корелация се определят между вариационните редове за 28-те области на България. При анализа те се интерпретират дотолкова, доколкото да се определи дали съществува връзка между наблюдаваните показатели и получаването на приблизителна оценка за нейната сила.

⁶ В случая, анализът не се опитва да определи до каква степен факторът гъстота на населението е причина или следствие, по-важно е това, че БВП на глава от населението корелира тясно с гъстотата на населението – респ. трудно може да се очаква повишаване на БВП на глава от населението в областите с малка гъстота на населението.

региони където възможностите за получаване на по-високи доходи и най-вече достъп до социални придобивки води до намаляване на населението в малките градове и селища и те остават с намаляващо, предимно възрастно население (относителният дял на населението на възраст 65 години плюс е по-висок в регионите с ниска гъстота на населението). Това води до засилване на различията и продължаване на наблюдаваната миграция.

Коефициентът на корелация на БВП на глава от населението и заселилите се по области е 0.40, а между доходите и заселилите се е също 0.40. Тези коефициенти не са високи, но определено говорят за наличие на такива зависимости. Наблюдаваната миграция между регионите в България очевидно зависи от БВП на глава от населението и доходите, но те не са определящи за нея. По-добрата инфраструктура и социалните услуги и придобивки в урбанизираните региони играе съществена роля за формирането на миграционните потоци. В този смисъл, на преден план като определящ регионалните различия, излиза показателят за механично движение на населението. На практика той може да бъде приет като основен (обобщаващ) показател за оценка на ефекта от регионалните различия. Същевременно, той може да е много ясен и смислен обобщаващ показател за оценка и на резултатите от прилагането на една или друга политика, насочена към преодоляване на регионалните различия.

4. Развитие на регионалните различия – регионални политики

Какви могат да бъдат очакванията за промяната в регионалните различия за страната ни. Имайки предвид голямата инерционност на демографските и в частност на миграционните процеси, то регионалните различия, както в краткосрочна, така и в средносрочна перспектива ще нарастват. При всеки опит да се решат тези въпроси, трябва да се имат предвид специфичните за страната ни остри демографски проблеми. Това означава, че една и съща политика за преодоляване на различията, която може да е ефективна при гъстота на населението от 109 души, може да не сработи при гъстота от 60 души на кв. км., която намалява с течение на времето. Друг фактор, който е съществен, е този, че при миграцията на населението наред с икономическите придобивки, много съществени са социалните придобивки, които предлагат по-високоурбанизираните региони. С други думи, регионална политика, акцентираща само върху икономически стимули, трудно би била успешна за намаляване на миграционните процеси.

Регионалната политика, в това число и тази за регионално устойчиво развитие, не може да се очаква да е основен приоритет, поне на тази етап, когато страната ни среща сериозни икономически трудности. Икономическите проблеми понастоящем са такива, че големи компромиси с икономическата ефективност за сметка на постигане на регионална конвергенция или устойчиво регионално развитие не са реалистични. Независимо, че икономическата ефективност вероятно ще е приоритет на страната ни пред регионалната политика, то е възможно тя да се съчетава с някои форми на регионална политика, която да не влиза в голямо противоречие с икономическата ефективност. Такъв приоритет може да има единствено решаването на социално-икономическите проблеми на определени общини, където демографските и икономическите показатели са наистина критични. В тези случаи трябва да се търсят

различни, вкл. и нетрадиционни решения⁷, независимо от това, че може да не са напълно икономически оправдани.

Една форма на съчетаване на икономическата ефективност с целенасочена регионална политика е развитието на трансгранично сътрудничество, нещо, което би подпомогнало граничните изоставащи региони. Друга такава е подобряването на пътната инфраструктура, което е предпоставка, благоприятстваща икономическото развитие. Същевременно не трябва да се забравя, че жителите на изоставащите региони не би трябвало да са лишени напълно от социалните придобивки, които съществуват в другите региони. Построяването на пътната мрежа ще позволи да се постигне благоприятен социален ефект в това отношение. Възрастното население ще има по-лесен достъп до медицински услуги и други социални придобивки – регионалната политика трябва да има и социален ефект.

Много важно е освен магистралите да се развие и другата пътна инфраструктура. Трябва да бъде осъществена добра връзка между малките населени места и областните центрове. Това ще доведе до т.нар. „spill over” (преливащ) ефект. Така миграцията ще се намали. Ако човек живее в селище, отдалечено на 15 км от областния център, а пътят е лош, той рано или късно вероятно ще се премести в по-големия град. Ако обаче пътят е добър, той може да живее в малкото градче или селище и да работи в областния център, децата му да ходят на училище, медицинската помощ да е своевременна и т.н. Един такъв ефект при подобряване на пътната инфраструктурата между малките селища и по-големите градове дава положително отражение и на естествения прираст на населението. Например, когато едно младо семейство не може да намери поминък в своето селище, то се мести в близкия урбанизиран център. Там обаче това семейство възприема модела на урбанизираните райони, а той традиционно е за семейство с по-малко деца. В Италия това е доказано и изпитано вече във времето. Там естественият прираст нараства при свързването на малките населени места с областните центрове.

Като правило, изоставащите икономически региони са с висок дял на участие на аграрния сектор. Една възможност за тях е в диверсификация на дейностите. Само около 1-2% от заетите в селското стопанство в България упражняват някаква допълнителна дейност. Те разчитат основно на земеделието. Трябва да има диверсификация на активностите. Ако обаче няма пътната инфраструктура, това не може да се получи. Ако произвеждам нещо и искам да изляза на пазара, за да го предложа, няма да мога да го изнеса, защото пътищата са лоши, следователно аз съм ограничен в това отношение.

Подобряването на инфраструктурата и по-специално тази на пътищата определено отговаря на изискванията за регионална политика, която е съчетана с икономическа ефективност и намалява негативния ефект за нарастване на регионалните различия. Когато започнах да се занимавам с регионална икономика, на първия форум по тематиката, на които присъствах, едно от общоприетите заключения бе: „Ако искате да провеждате регионална политика и не знаете какво да направите, строите пътища“. Да не забравяме, че Римската империя е била велика сила и една от причините за това е, че е строила пътища.

⁷ Например за улесняване на миграция от чужбина към изоставащите общини в България. Не трябва да се забравя, че страната ни, рано или късно, с нарастване на стандарта на живот, ще бъде подложена на миграционен натиск и той ще бъде по-приемлив, ако се улесни мигрирането на хора, които са с близка до нашата култура.

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A WAY OUT OF THE EU PERIPHERY: ECONOMIC SECTORS AND REGIONAL ECONOMIC PERFORMANCE

Abstract: *A quantitative analysis of the economic convergence among the second-level statistical regions of the European Union examines the relative values of the regional per capita Gross Domestic Product expressed in purchasing power standard terms. The findings show that the list of the regions with the lowest purchasing power per capita – the „deep periphery“ of the European Union – has seen significant rearrangement over the last 15 years, except for the most backward regions. To analyze the drivers of convergence and divergence within the European Union, a linear regression model that assesses the role of the changing relative weights of major economic sectors between 2007 and 2021 was used. An important finding is the negative association between the relative growth of the regional Gross Value Added and the share of finance and real estate. The Eurozone membership is also negatively associated with convergence. The growing manufacturing sector positively affects economic performance – but only in the wealthier regions, emphasizing the importance of knowledge- and innovation-based industry.*

Keywords: *economic convergence; periphery regions; financialization; manufacturing; Eurozone*

JEL: *R11; R15; O47; O14*

1. Introduction

The European Union has been dubbed a „convergence machine“ because of its record of successful economic integration of new member states (Ridao-Kano, Bodewig, 2018). However, legitimate concerns have been raised that the design of the common market may hinder convergence, with some regions turning into a constant periphery (Reinert, 2017). This perspective is partially supported by some mainstream researchers, who acknowledge that while national-level convergence may occur, peripheral regions characterized by low income or slow growth still exist or emerge (Borsi, Metiu, 2013; Farole et al., 2018).

This article first tests the hypothesis of a constant periphery within the EU. Next, a linear regression model explains ongoing regional convergence in the EU via the relative share of four key economic sectors within regional gross value added (GVA). This structural approach helps identify areas that warrant special attention in prospective regional industrial policies.

2. Methodology

The sample consists of 227 NUTS 2 regions of the EU. Although there are a total of 244 EU regions, overseas territories and small island regions have been excluded from this analysis due to their territorial specifics. For the typical EU regions, Eurostat data on the Gross Domestic Product (GDP) per capita in purchasing power standards for the years 2007 and 2022 have been compiled. While the purchasing power standard (EU27 = 100) has certain weaknesses, it provides a reasonable estimate of both regional production and living standards. Additionally, it is the preferred method for calculating absolute, or β -convergence (Dvorkova, 2014).

A straightforward test was performed within this sample: the list of the 30 regions with the lowest GDP per capita in 2007 was compared to the list of the 30 regions with the lowest GDP

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per capita in 2022. The 15-year period is sufficiently large and turbulent to allow for assessing whether a region that was initially part of the economic periphery is likely to remain there.

Descriptive statistics were analyzed for the sample, comparing values for standard deviation, skewness, mean, and median in 2007 and 2022, as well as the values in the 10th and 90th percentiles of the GDP per capita distribution.

The next research phase introduces a structural analysis of the regional convergence process, exploring which economic sectors contribute positively to regional economic performance and which sectors hinder it. The measure of convergence is advancing towards the benchmark of the average GDP per capita. The regional weight of economic sectors was estimated using Eurostat data by calculating the GVA of each sector as a percentage of the total regional GVA. The percentage change of these shares over the years was then computed, indicating whether a sector's role in the regional economy is diminishing or growing. Here, an adjustment to the initial sample was necessary since, as of October 2024, some member states have not published regional sectoral data for 2022. Therefore, the full dataset for 2021 was utilized.

The list of economic sectors considered for explaining convergence was narrowed down to four: 1) agriculture, forestry, and fishery (variable *agri*); 2) manufacturing (*manu*); 3) trade, transportation, and tourism (*serv*); 4) finance, insurance, and real estate (*fire*). This selection relies on the assumption that manufacturing is crucial for catch-up development, while services and finance tend to dominate in wealthier regions.

Three key variables were incorporated into this sectoral model. The binary variable *euro2007* indicates Eurozone membership as of 2007. The nominal value (in million euros) of regional GVA in 2007 was included to evaluate whether the size of a region influences convergence; this variable was used in logarithmic form. Lastly, the effect of the initial base was tested by including the logarithm of regional purchasing power per capita in 2007 relative to the EU average (*PPS*). These considerations result in the following regression model:

$$\text{Convergence} = \beta_1.\text{agri} + \beta_2.\text{manu} + \beta_3.\text{serv} + \beta_4.\text{fire} + \beta_5.\text{euro2007} + \beta_6.\log\text{GVA} + \beta_7.\log\text{PPS} + \varepsilon.$$

3. The thirty Poorest EU Regions in 2007 and 2022

Table 1 lists the thirty NUTS 2 regions of the EU with the lowest value of GDP per capita in 2007 (columns 1, 2, 5 and 6) and in 2022 (columns 3, 4, 7 and 8). The table highlights that in 2007, the threshold for a region to be classified among the poorest in the EU was 48% of the average GDP per capita. By 2022, this threshold increased to 60%. During this period, ten regions managed to move off the list: four in Romania and six in Poland. This suggests that peripheral regions have about a one-third chance of advancing to higher production and income levels. However, this opportunity does not extend to four out of six Bulgarian regions, which consistently remain among the EU's poorest. Notably, Bulgaria's Southeastern region, while still lagging, improved to 56% of the average EU level, adding 23 percentage points.

When examining regional convergence and divergence on a national level, Greece emerges as the biggest loser, with its regions experiencing a decline of 15 to 35 ppt. in GDP per capita, landing seven of them among the 30 most backward regions of the EU. In contrast, the top performers – aside from the unique case of Ireland – are Poland's regions, which reached 70-90% of the EU average by 2022, followed by Romania's regions, which achieved 60 to 80% of the average. Among the regions classified as „backward“ in 2007, Romania's Vest region saw the most significant improvement. Bulgaria's Southwestern region also made notable gains, adding 30 ppt. over 15 years and reaching 97% of the EU average.

Table 1. EU regions with the lowest value of GDP per capita in 2007 and 2022

NUTS2, 2007	EU = 100	NUTS2, 2022	EU = 100	NUTS 2, 2007	EU = 100	NUTS2, 2022	EU = 100
Severozapaden (BG)	27	Severozapaden (BG)	40	Dél-Dunántúl (HU)	41	Lubelskie (PL)	54
Nord-Est (RO)	27	Severen tsentralen (BG)	42	Dél-Alföld (HU)	41	Podkarpackie (PL)	54
Severen tsentralen (BG)	29	Yuzhen tsentralen (BG)	43	Nord-Vest (RO)	41	Dél-Alföld (HU)	55
Yuzhen tsentralen (BG)	29	Panonska Hrvatska (HR)	46	Świętokrzyskie (PL)	43	Warmińsko-mazurskie (PL)	55
Sud-Vest Oltenia (RO)	32	Nord-Est (RO)	46	Centru (RO)	43	Świętokrzyskie (PL)	55
Yugoiztochen (BG)	33	(EL)Anatoliki Makedonia, Thraki	47	Mazowiecki regionalny (PL)	44	Yugoiztochen (BG)	56
Severoiztochen (BG)	35	Ipeiros (EL)	47	Panonska Hrvatska (HR)	45	Kriti (EL)	56
Sud-Est (RO)	35	Severoiztochen (BG)	48	Opolskie (PL)	45	Calabria (IT)	57
Sud-Muntenia (RO)	35	Dytiki Elláda (EL)	49	Východné Slovensko (SK)	46	Sud-Muntenia (RO)	57
(HU)Észak-Magyarország	38	(HU)Észak-Magyarország	50	Kujawsko-pomorskie (PL)	47	Sud-Vest Oltenia (RO)	57
Észak-Alföld (HU)	38	Észak-Alföld (HU)	50	Vest (RO)	47	Peloponnisos (EL)	59
Lubelskie (PL)	38	Thessalia (EL)	52	Sjeverna Hrvatska (HR)	48	Sjeverna Hrvatska (HR)	59
Podkarpackie (PL)	38	Dél-Dunántúl (HU)	52	Małopolskie (PL)	48	Sicilia (IT)	59
Warmińsko-mazurskie (PL)	40	Východné Slovensko (SK)	52	Zachodniopomorskie (PL)	48	Podlaskie (PL)	59
Podlaskie (PL)	40	Kentriki Makedonia (EL)	53	Lubuskie (PL)	48	Severozápad (CZ)	60

Source: Eurostat. Regions that were among the bottom 30 in 2007 but left the list by 2022 are shown in bold.

Several key findings emerge from the table: 1) Convergence is genuine, as backward regions steadily progress toward EU average values. 2) Four of the six Bulgarian regions have become permanent fixtures of the EU periphery. 3) Poland and Romania exemplify EU convergence, rapidly moving away from peripheral status. 4) Greece has become a peripheral state in the aftermath of its debt crisis. 5) An increasing number of regions in older member states, particularly in the South, are slipping below the levels achieved by many newer EU members.

Descriptive statistics of the regional sample reveal that the standard deviation of GDP per capita (EU=100) decreased from 38.75 in 2007 to 37.53 in 2022. This decline indicates that the regions are converging (σ – convergence), although it does not specify how „fast“ or „slow“. The poorest EU regions scored the biggest improvements: those in the 10th percentile grew their GDP per capita from 45% to 57% of the EU average. This convergence from below coincided with further advances in the richest regions. In 2007, the regions in the 90th percentile had 141% of the average GDP per capita, which increased to 144% by 2022.

However, between 2007 and 2022, skewness rose from 0.75 to 1.60, indicating a more pronounced right-skewed distribution. This suggests that an increasing number of EU regions are positioned below the mean values of GDP per capita. Supporting this observation, the median regional GDP per capita in 2007 was 96% of the average, dropping to 90% in 2022. In

summary, while the regions of the EU are generally converging in terms of purchasing power – evidenced by the declining standard deviation – this convergence primarily occurs through the compression of regions below the mean value. The few „alpha“ regions at the top of the GDP per capita distribution continue to stand out.

4. Economic Sectors and Regional Convergence

The next step in the research is to identify patterns in the regional economic structure that promote convergence. As previously explained, a linear regression model is being utilized², with the percentage change of GDP per capita between 2007 and 2021 serving as the dependent variable. The results are presented in Table 2. The model has three versions: Model1 includes the entire sample of EU regions, Model2 focuses on regions with a GDP per capita above the EU average in 2021, and Model3 examines regions with a GDP per capita below the EU average.

All three models are statistically significant, with Model 1 explaining 69% of the GDP per capita growth from 2007 to 2021. The estimated coefficients reveal important and somewhat counterintuitive associations. For starters, the „gross“ indicators – the logs of GVA and GDP (PPS) per capita as of 2007 – are both significant for the entire sample but have opposing signs. This indicates that economically larger regions tend to have advantages that promote convergence, while wealthier regions experience much slower growth.

The negative association between the regional weight of the FIRE (Finance, Insurance, and Real Estate) sectors and the convergence process is significant and easily interpretable: an oversized financial sector hampers regional growth by diverting resources to service increasing debt. While this explanation holds merit, it does not exclude the effects of „convergence from above.“ The rapid development of poorer regions elevates the EU average, causing wealthier regions to experience a decline in their relative advantages. Since FIRE sectors are more prevalent in regions with above-average GDP per capita, the corresponding coefficient β_4 is negative.

The positive association between GDP per capita growth and the increasing share of the manufacturing sector in wealthier regions – while it is strictly negative in below-average regions – merits attention. This finding aligns with Rodrik’s (2015) conclusion that manufacturing maintains its positive impact only when operating on the technological frontier. In contrast, the growth of low-productivity manufacturing appears to hinder the development of poorer regions.

The effect of Eurozone membership is consistently negative for the convergence process across all three models. The estimated coefficients indicate that Eurozone membership negated 15-20 percentage points of the relative GDP per capita advancement in the period of 14 years. This result is statistically significant at the 1% level and remains robust across various model specifications. However, this finding does not imply that the common currency inhibits EU convergence. Countries that adopted the euro by 2007 were generally wealthier than the EU average and subsequently experienced slower growth rates. In contrast, new member states

² When testing the regression assumptions, the Breusch-Pagan and Ramsey tests indicated that the model may be prone to heteroscedasticity, which arises from the significant socioeconomic variance among EU regions, a well-known research issue. Although with more sophisticated model specifications – including quadratic terms of logarithmic variables and interaction variables, and purging a dozen „outlier“ regions – the conditions for homoscedasticity could be satisfied, the author chose to retain the entire sample of regions and stick to the basic model. As a result, the focus is not on interpreting the magnitude of the associations but rather on their significance and direction.

starting from lower economic bases experienced higher growth but did not qualify for Eurozone membership in 2007. Therefore, the euro is more of an attribute of wealthier regions rather than a constraint of growth. Nonetheless, the implications of Eurozone membership for long-term growth warrant policy attention and further research.

Table 2. Factors for EU regional economic convergence: regression results

VARIABLES	Whole Sample Model1	GDP >100 Model2	GDP ≤100 Model3
<i>agri</i> (2021/07, %)	-3.475*** (0.960)	6.651 (5.205)	-3.433*** (0.813)
<i>manu</i> (2021/07, %)	0.103 (0.251)	1.339*** (0.350)	-1.035*** (0.297)
<i>serv</i> (2021/07, %)	-1.884*** (0.421)	-2.076*** (0.607)	-1.209** (0.484)
<i>fire</i> (2021/07, %)	-3.754*** (0.427)	-2.375*** (0.755)	-3.597*** (0.454)
<i>euro2007</i>	-20.399*** (2.388)	-16.072*** (3.600)	-17.716*** (3.066)
<i>GVA</i> (Gross Value Added)	2.955** (1.163)	-0.229 (1.769)	4.911*** (1.270)
<i>PPS2007</i> (EU=100)	-18.312*** (2.886)	-21.383*** (7.395)	-34.799*** (4.357)
Constant	67.583*** (11.482)	119.743*** (36.759)	113.920*** (17.125)
Observations	227	90	137
R-squared	0.688	0.479	0.851

Source: Author's calculations. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Regarding other sectors, the growing weight of services is negatively associated with regional convergence. The agricultural sector shows an ambiguous effect on convergence dynamics: even when its share in the regional GVA is growing, this may not foster wealth creation unless regional value-added chains are established (Boyukliev, 2016).

5. Conclusion

This article has demonstrated that regional economic convergence within the EU is primarily driven by the progress of previously underdeveloped regions of Poland and Romania, alongside a notable decline in the regions of Greece. Convergence is occurring at both the lower and upper ends of the economic spectrum: 14 regions that had a GDP per capita above the EU average in 2007 dropped below this benchmark by 2022.

Within the EU, four distinct types of regions can be identified. Some latecomers are rapidly advancing toward the average EU purchasing power. Other regions – both in older and newer member states – are trapped in socioeconomic depression with no clear path to recovery. A third group of regions is rediscovering the importance of knowledge and innovation-based manufacturing. Finally, a fourth type, located in once-wealthier countries, continues to rely heavily on finance and services. However, the long-term effects of this consumption-based strategy are undermining their previous advantages, even as they paradoxically contribute to the EU's regional convergence.

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REGIONAL ASPECT OF THE SPREAD OF CONVERGENCE PROCESSES

Abstract: This study defines the role and importance of convergence processes at the national and international levels. The article systemises the existing factors that influence the process of convergence of regional development. It is established that the most influential on the level of convergence are socio-economic factors. The features of the development of regional policy in Europe are described. The main instruments for achieving the convergence of regional development are identified. The main directions of formation of the regional development policy in Ukraine are analysed and priority tasks in this direction are determined.

Keywords: convergence; socio-economic development; regional development; international experience; territorial restoration.

JEL: F02; O18; R12

1. Introduction

Ukraine's modern regional policy and economy are currently facing a difficult task of renewal, restoration and development of the socio-economic sphere, as the new great war that began in early 2022 with Russia undermined the country's modern economy and pushed it back several steps, affecting all components of the state's domestic policy in general, including the state's regional policy. Thus, a new challenge was added to the challenges facing Ukraine – the war, which required the participation of all economic entities.

Today, combining the country's regional development opportunities should become an important priority not only to fight the aggressor country, but also to quickly restore the country's socio-economic development. An important step in this transformation should be the development of effective state and territorial governance that takes into account the realities of today and adapts to the effective redistribution of resources between the country's regions.

Therefore, the issue of territorial convergence in Ukraine is important and needs to be addressed. It is also necessary to pay attention to the adaptation of regional development to European regulatory conditions for Ukraine's rapid integration into the EU (Revenko, Romanenkov, Hatylo, Lebedchenko, Titarenko, 2023).

2. Statement of the Problem

Global experience shows that convergence is one of the main instruments of modern international integration. Convergence in the economy is interpreted as a process of convergence, interpenetration and assimilation of elements against the background of heterogeneity and diversity. This process blurs the boundaries between different economic systems through common goals, problems and common development models. (Revenko et al., 2024) Convergence in the economic sense should be understood as the convergence and similarity of national and regional economic systems in order to create optimal conditions for further economic integration. Numerous examples of the formation of modern interstate integration associations prove the advantages of the evolutionary path of interstate integration, but this is impossible without creating the necessary preconditions for the convergence of

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national and regional economic systems. Convergence as a process of creating preconditions for interethnic economic integration leads to the phenomenon of convergence of various sectors, industries and types of economic activity that are the subject of the European integration process.

Today, Ukraine faces new challenges in the field of regional development and regional development policy mechanisms. After the full-scale invasion, the state faced the problem of ensuring security and identifying vectors that would further regulate the convergence of regional development. The National Economic Strategy until 2030 presents European vectors in all spheres of public life. European priorities also apply to regional development. Recovery from the war in Ukraine should be based on new principles and approaches that take into account the potential of the region and are in line with sustainable development.

Differences in regional socio-economic development occur in almost every country in the world, regardless of the scale and intensity of development, as well as economic potential, state and political system. The structural nature of these disparities is due to the poles of competence, the respective climatic conditions, insufficient infrastructure development and the peculiarities of the political system. Regional imbalances in countries are stable in time and content, and their elimination requires a long time and a coordinated system of actions by both national and regional authorities. Rapid transformations in the world define new conditions for the existence of the spatial economy and require a deeper study of the specifics of convergent relations between countries and regions.

In order to develop appropriate recommendations based on the global experience of regional policy-making, it is necessary to analyse government initiatives to shape regional development in developed countries. The main principles and instruments of regional policy formation are those designed to address urgent problems and coordinate the convergence of regional development.

3. Methodology / Methodological Approaches

In the period of post-war reconstruction, Ukraine faced the problem of identifying priority areas for regional development, taking into account the potential of the territory. The need to strengthen regional development is driven, on the one hand, by the intensification of competition for resources between regions, and, on the other hand, by the increasing role of regions in implementing socio-economic reforms and creating growth points. To solve these problems, it is necessary to create modern mechanisms for coordinating the convergence of regional development, which requires an analysis of the experience of other countries that have solved similar problems.

The current spatial development of Ukraine is characterised by the following main transformational trends: increasing socio-economic differentiation between regions, a combination of national interregional integration and the transition from economic decline to economic growth with significant regional specificity (Storonyanska, 2008).

Researchers (Borshchevsky et al., 2015) argue that the process of divergence is inevitable and leads to a reverse process of convergence between regions, creating an attractive effect for underdeveloped regions. Public authorities are beginning to look for factors that will ensure the integration of developed regions with lagging behind, increase interdependence between regions and promote mutual economic growth. Synchronised economic growth of regional development is a priority for all countries today.

The European Union (EU) has considerable experience in achieving regional convergence and spends about 30% of its budget on the implementation of regional convergence policy. (Pisarenko, 2014). Since the development of the Europe 2020 strategy, the EU countries have made a significant shift towards joint cooperation in the field of industrial policy by providing additional financial resources.

Regional development depends on the context and is influenced by a number of factors and determinants. Some scholars identify a single factor for balanced regional economic development, while others identify a number of factors that can influence convergence. Having systematised the explanations of scientists (Chuzhikov, 2016), it was possible to create a systematic vision of the factors that influence the degree of convergence of regional development.

Institutional and legal factors form the basis of regional policy, which should be the starting point of the convergence process and establish clear rules and programmes for further actions of regional and local authorities towards convergent development.

Logistical, informational and organisational factors functionally facilitate convergence processes in the regional sphere in order to enhance interpenetration and convergence.

Informational, cultural and psychological factors represent mental and communication readiness and take into account the social behaviour and attitudes of the inhabitants of a particular region to the expediency of making efforts to achieve convergence factors.

Environmental factors are related to the existence of environmental problems that unite each region and that need to be addressed jointly by each region, which requires mutual understanding and mobilisation of the potential of each region, as well as the establishment and observance of uniform environmental standards for all regions of the country.

In modern conditions, the European Union has several instruments for implementing regional policy (the European Regional Development Fund (ERDF), the Cohesion Fund and the European Social Fund (ESF)) (European Social Fund Plus, 2024). The main tools for ensuring the convergence of regional development include: tools aimed at restraining the development of new enterprises in overpopulated regions; spatial distribution of state activities in the field of economic stimulation of regional development; financial support for enterprises; development of infrastructure support; 'soft' measures to stimulate regional development (Armstrong, Taylor, 2000).

It should be noted that, despite the implementation of the EU's common regional policy, regional governance at the national level is carried out by each country individually in accordance with its own potential. The common development vector for all countries is to create conditions for realising the potential of individual regions in order to increase their contribution to the economic development of the country as a whole. Special attention is paid to ensuring regional equality. Despite the different levels of development, the main vector is to create the necessary preconditions for the balanced development of all regions and minimise the impact of negative environmental factors.

4. Research Results

In the regional space, a fairly large number of factors and drivers influence the development of convergence. Given the priority of socio-economic factors influencing the spread of convergence signs between regions, it is advisable to focus on the issue of socio-economic convergence. This process is characterised by the convergence of the parameters of socio-

economic development, which triggers all stages of balancing modern drivers of economic development.

The priority of convergence in the world and in the global context is also effectively demonstrated by the 2030 Agenda for Sustainable Development adopted by the UN General Assembly in 2015 (United Nations. Ukraine). One of the key principles of this agenda, which is binding on all UN member states, is the principle of 'leaving no one behind', i.e. focusing on reducing differences and conflicts between different social groups, nations and regions.

Comparing Ukraine's experience in the field of regional development, it can be concluded that the country's policy in this area has historically been much more superficial and is still in its infancy. The general vector of Ukraine's European integration requires the Government to take certain measures to implement European norms in its regional development policy. In 2020, the Cabinet of Ministers of Ukraine adopted the Resolution 'On Approval of the State Strategy for Regional Development for the Period 2021-2027, Taking into Account the European Integration of Ukraine', which outlined the main directions for overcoming regional convergence while ensuring sustainable regional development (Postanova Kabinetu Ministriv Ukrainy "Pro zatverdzhennia Derzhavnoi stratehii rehionalnoho rozvytku na 2021-2027 roky").

The EU's common regional development policy is aimed at economic stimulation at the regional level. This indicates the growing relevance and importance of unification, integration and convergence both at the international, global level and at the regional level of each country.

5. Conclusions

Taking into account the European experience of regional convergence allows for more efficient use of regional resource potential, establishing interregional cooperation and promoting regional economic and social development. Thus, the global economic space raises the issue of unification and integration, and emphasises the need to improve key indicators of the social, cultural, economic, information and security spheres through the spread of a culture of convergent relations at the level of spatial development and consolidation of regional potential at both the global and local levels. However, the priority for the Government of Ukraine today is the post-war reconstruction of the regions affected by Russian armed aggression, preservation of the integrity of the state's territory, de-occupation of the territories and restoration of their vital activity.

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IS A NEW MODEL FOR FINANCING MUNICIPAL INVESTMENTS NEEDED IN BULGARIA

Abstract: European Union grants have been the major source for local government investment financing in the two programming periods after Bulgaria's accession, and they aim at achieving cohesion and EU policy objectives. However, municipal investment needs go beyond and the traditional investment sources are the local budgets mostly through municipal own source revenues and borrowed funds. About one-fifth of the municipalities in Bulgaria have strong enough revenue basis to invest directly and service investment loans. Considering the significant municipal investment needs, reforms to ensure a stronger municipal revenue basis should be undertaken.

Keywords: Municipal budgets; municipal investments; municipal creditworthiness; decentralization

JEL: H72

1. Introduction

The municipal investments are part of public investments and are directly related to public infrastructure construction and maintenance, and public service provision. They play a key role in economic development, the local community development and improving the population's quality of life.

The specificity of local public services is defined by the allocation of powers among the different government tiers for setting the policies and standards, the financing and the physical provision of these services. All these features influence the costs for the local public services including the investments.

Municipal investment financing is usually a blend of traditional methods such as central budget subsidies, municipal own source revenues, grants, bank loans, municipal bond issues and public-private partnerships. Bulgaria's accession to the EU and the need to transpose EU policies into the provision of certain local public services to achieve cohesion, brought on stage the EU funds as a key source for municipal investment financing. The financial instruments – another innovative financing source, became very popular among Bulgarian municipalities too.

2. Status

The municipal financing provided through EU funds and state subsidies is significant in size compared to the scale of municipal budgets in Bulgaria. Although grants are regarded as „safe“ and „cheap“ and local governments display a strong propensity to use them, they aim at the achievement of agreed objectives and policies, while the investment needs to go beyond. To meet these needs the municipalities will have to develop and maintain a strong local revenue basis and thus be able to finance local capital investment needs.

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3. Methodology

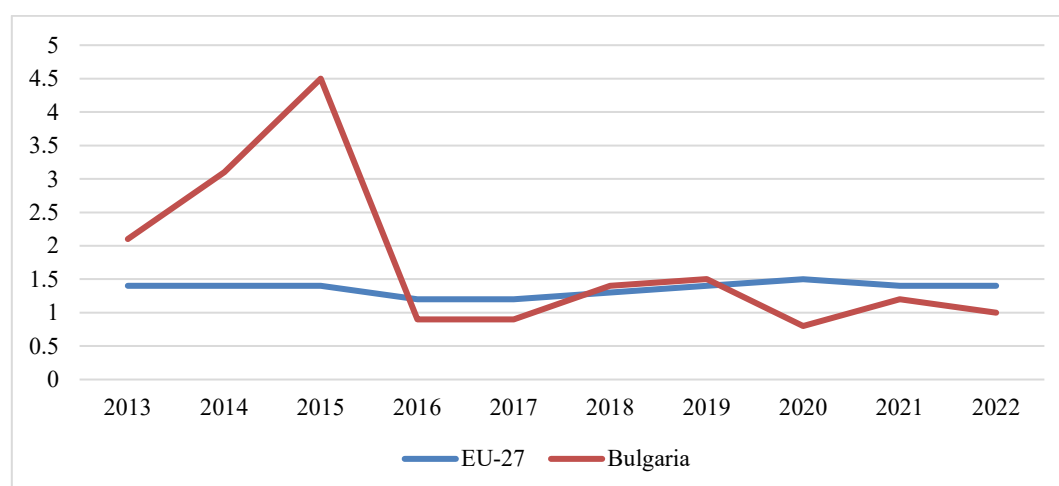
A diverse set of approaches and methods have been applied to study the complex nature of municipal investment financing. These include systematic and comparative analysis, quantitative statistical methods and desk research of results of scientific and applied research projects. The creditworthiness assessment of Bulgarian municipalities is based on a methodology for the calculation of integral credit potential scores (Kirilova, Velkova, 2023). The study is based on data from Eurostat, central government ministries, the National Association of Municipalities in the Republic of Bulgaria (NAMRB), the Information System for Management and Monitoring of EU Funds in Bulgaria 2020, municipal strategic documents, etc.

The analysis covers the period after Bulgaria's accession to the EU, i.e. after 2007 and until 2022.

4. Results

At the end of the first programming period since Bulgaria's accession to the EU, the share of municipal investments in the country's GDP exceeds significantly the EU-27 average. The indicator reaches its highest values in 2015 – 4.5%, at an EU average of 1.4%. During that period Bulgarian municipalities implemented significant investment projects funded by the Operational Programmes Environment and Regions in Growth and the Rural Regions Development Programme. These projects were related to setting in place of regional waste management systems, construction of water supply and sewerage systems and wastewater treatment plants and rehabilitation of urban and rural infrastructure. During the 2007-2013 programming period, Bulgarian municipalities received EU funding of about BGN 7 billion, as the funds utilisation peaked in 2014 and 2015. During the second planning period until 2022, the share of municipal investments in GDP is about and below the EU average. This is largely due to the lower EU investment funding to the Bulgarian municipalities – about BGN 2.8 billion.

Figure 1. Dynamics of local government investments in EU and Bulgaria (% of GDP)



Source: Eurostat.

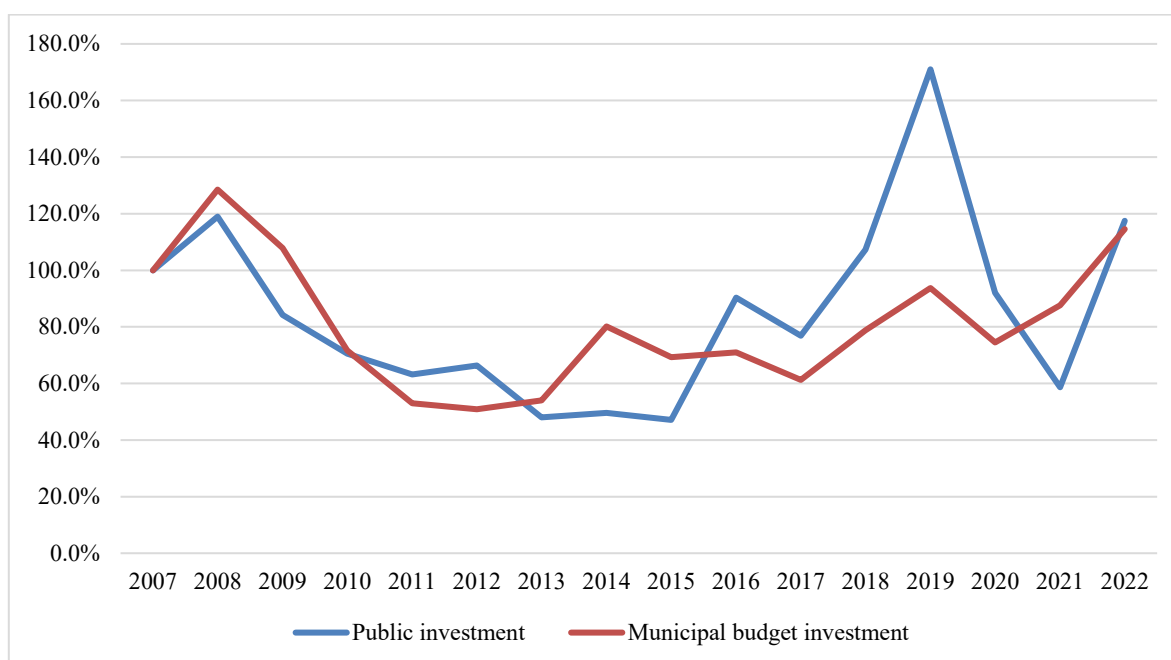
EU funds have key importance for municipal investments in Bulgaria making up on average 50.6% of them during the period 2013-2022. In years of larger project financing uptake, EU funding reaches up to 80.8% of municipal investment (2015). On the other hand, the EU

funding share is low in years of less active project implementation, usually the initial years of the programming periods (i.e. 12.4% in 2016). The EU financing of municipal investment projects is reported in off-budget accounts.

On average, 49.4% of municipal investments in Bulgaria are funded through the local budgets during the period 2013-2022. The dynamics of these expenditures in the period 2007-2022 and the structure of their financing sources disclose the actual capacity of Bulgarian municipalities to invest.

In the period 2007-2022, municipal investments represent on average 33% of public investments in Bulgaria, as in certain years this share is about 50% – 2014, 2015 and 2021. These are the final years of both programming periods when the majority of EU-funded infrastructure projects are implemented and the absorption is the most intensive respectively. Besides, the local governments have to ensure the respective co-financing of the investment projects. The municipal budget investment dynamics in the analysed period follow the public investment dynamics. The municipal investments kept falling in the period 2007-2013, which is a negative consequence of the world financial crisis of 2008-2009 influencing the public finances with a time lag of several years. The growth in 2014-2015 is due to the completion of the first programming period and the need to ensure co-financing. After that, the municipal investments are relatively low, as the sporadic increases in 2019-2022 are similar to the ones at the end of the first programming period. Bulgaria is not the only country with unsatisfactory public investment. Similar observations are also made for the entire EU, where public investments can still not be restored from the negative effect of the 2009 financial crisis (Draghi, 2024).

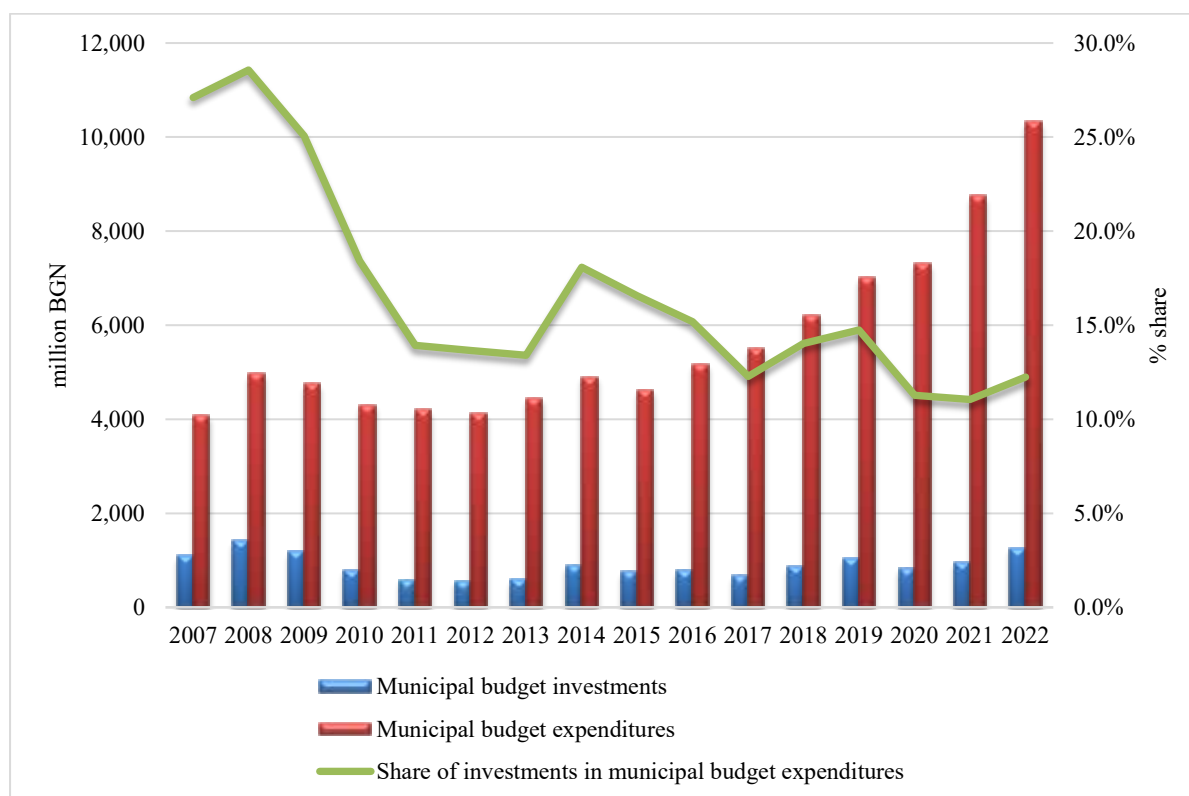
Figure 2. Dynamics of public budget investments and municipal budget investments in Bulgaria, 2007-2022 (2007=100) (%)



Source: Reports on the implementation of the Consolidated Fiscal Program of the Republic of Bulgaria, Ministry of Finance, authors' calculations.

The limited growth of municipal investment goes along with significant growth of municipal budget expenditures, which is due to the annual update of the costing standards for the delegated public services, thus resulting in a declining share of municipal investment.

Figure 3. Dynamics of municipal budget expenditures and investments in Bulgaria, 2007-2022



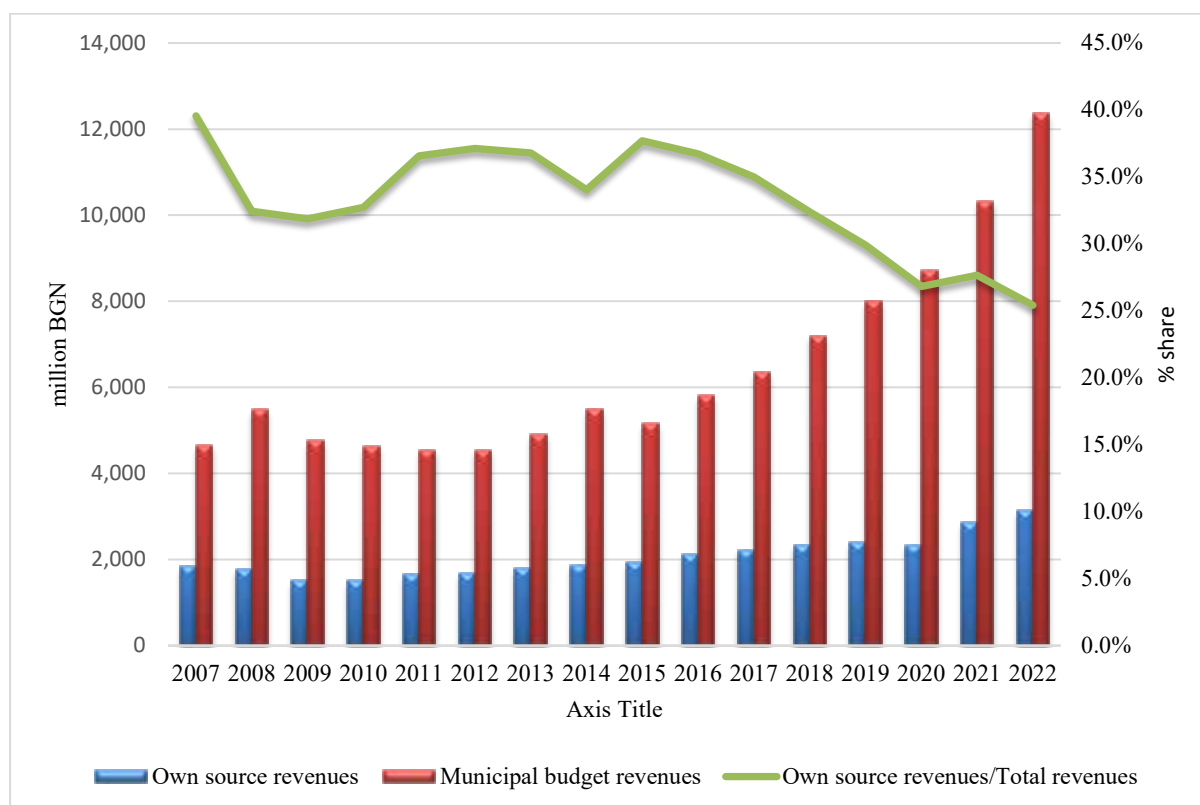
Source: NAMRB, authors' calculations.

Bulgarian municipalities finance their budget investments by two large revenue sources: earmarked central government subsidies and borrowed funds. Average for the period 2007-2022 the earmarked subsidy funded 26% of municipal investments, while the own source and borrowed funds financed 74% of municipal investments.

The own source funds are formed by revenues from: local taxes and fees, municipal property rent, concessions and sales of municipal property, fines, sanctions, etc. After 2007 the amount of own source revenues in absolute terms is constantly declining as a result of the financial crisis, as in 2013 it is at the 2007 level. After 2013 it started to increase gradually compared to the significant growth of municipal budget revenues leading to a decline in their relative share from 39.6% in 2007 to 25.4% in 2022. The reasons are related mostly to the insufficient revenue basis of the municipalities in terms of local taxes – the property tax valuations haven't been changed since 1997, the patent tax amount is fixed despite the turnover of the taxed entities, etc. In addition, the municipalities avoid raising property tax rates. According to a Council of Europe survey (COE, 2023), only 77 municipalities in the country have property tax rates above the average country level.

The average decline in the municipal own source revenues reveals just one aspect of the insufficient capacity of municipalities to finance investments. Two indicators – share of own-source revenues in total municipal revenues and per capita own-source revenues reveal large disparities among the municipalities in terms of revenue basis. The distribution of municipalities indicates that the strong revenue basis is in fact concentrated in a small number of municipalities which strongly affects the country's averages – 36 municipalities have values above the country average for share of own source revenues in total municipal revenues, and 64 municipalities are above the country average for per capita own source revenues.

Figure 4. Dynamics of municipal budget revenues and own source revenues in Bulgaria, 2007-2022



Source: NAMRB, authors' calculations.

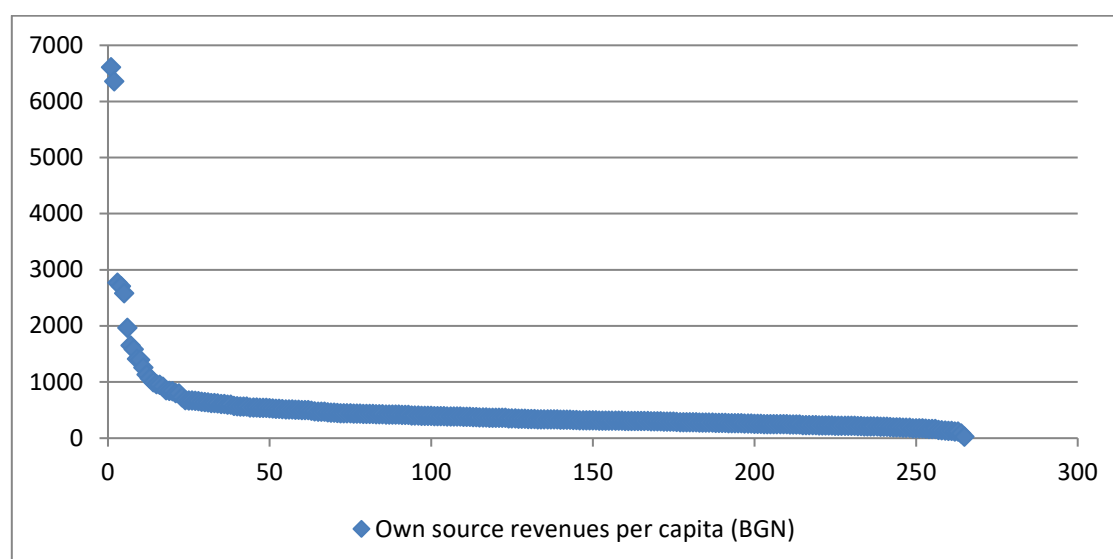
Table 1. Disparities among the municipalities in Bulgaria in own source revenues, 2022

	Share of own source revenues in budget revenues (%)	Own source revenues per capita (BGN)
Average – Bulgaria	24.4	474,06
Maximum value	67.5	6608,17
Minimum value	3.4	26,21
Variation coefficient	53.33	133.1%

Source: NAMRB, authors' calculations.

The values of the credit potential integral score indicate how many and which municipalities can generate net savings to directly fund investments and service investment credits. During the period of the financial crisis 2007-2011 there are about 40-50 municipalities out of a total 265 municipalities in Bulgaria. In the period 2012-2022, their number varies as it is about 60-70 municipalities each year (26% of the municipalities in the country). The integral score values again confirm the above conclusion regarding the small number of municipalities with strong revenue basis in the country. These municipalities include the following specific groups that each year are present among the leaders: (1) Sofia Municipality and the largest municipalities-regional centres – Varna, Plovdiv and Burgas; (2) medium and small-size municipalities with strong local economy – Chelopech, Kozloduy, Mirkovo, Devnya and Dimitrovgrad; (3) small resort municipalities such as Bansko, Nessebar, Tsarevo, Pomorie, Primorsko, etc.

Figure 5. Disparities among the municipalities in Bulgaria in per capita own source revenues, 2022 (BGN)



Source: NAMRB.

The data for municipal borrowing and municipal bond issuance in Bulgaria, presented in the next table are another indication for the fact that actually 50-60 municipalities in the country can finance investments from their own sources. Only the long-term loans have been analysed because they are investment-oriented.

Data indicate that long-term loans from banks and other funds (mostly FLAG) are the major borrowing instruments. However, even creditworthy municipalities cannot have unlimited use of loans considering the municipal debt limitations and the long repayment periods.

Only Sofia Municipality and a few largest municipalities use loans from international banks (mostly EIB) due to the large amounts and the specific provisions. Municipal bond issuances are not a preferred investment financing source due to the complicated procedures and the associated fees.

The Bulgarian municipalities' needs for investment financing can be determined based on the analysis of different strategic and planning documents.

The 2021-2027 Integrated Municipal Development Plans (IMDP) provide information about the overall municipal investment needs. The authors have summarized the information from IMDPs for all municipalities in Bulgaria², and the calculations indicate that the investment needs are about BGN 44,5 billion. The comparison of these needs with the indicative amount of the financing available for the municipalities from ESIF, the European Agricultural Fund for Rural Development and the Resilience and Sustainability Facility for the period 2021-2027 indicates (2024, NAMRB), that the municipalities will have to provide with own efforts financial resources amounting to BGN 40 billion.

While IMDP have strategic nature and include all investment aspirations, the other two documents – the State Budget Act 2024 and the Integrated Territorial Investment Concepts include only the projects with a higher degree of preparedness.

² All municipalities that have developed and published PIMD – or about 95% of all municipalities in Bulgaria. These 5% of municipalities that do not have PIMD are small ones and the envisaged investment resource is small and will not affect the conclusions and recommendations made.

Table 2. Municipal loans and bond issuances in Bulgaria in the period 2007-2022

	Long-term loans from international banks		Long-term loans from domestic banks		Long-term loans from other domestic funds		Municipal bond issuances	
	Financing (M BGN)	Number of municipalities	Financing (M BGN)	Number of municipalities	Financing (M BGN)	Number of municipalities	Financing (M BGN)	Number of municipalities
2007	26 857	1	110 090	50	0	0	22 292	1
2008	64 795	2	42 316	24	0	0	10 128	1
2009	152 864	2	48 633	22	0	0	23 239	4
2010	118 924	2	119 531	69	382	2	22 662	3
2011	19 858	1	73 037	29	42 180	43	15 935	2
2012	50 527	1	35 964	27	57 844	57	9 250	1
2013	16 333	2	32 281	39	69 787	55	0	0
2014	102 376	3	37 820	30	118 551	59	3 423	1
2015	44 414	2	35 946	31	158 886	66	25 000	1
2016	90 303	3	65 844	29	33 526	17	53 257	6
2017	28 156	3	61 742	28	37 785	20	18 000	1
2018	133 790	3	99 720	36	33 688	27	0	0
2019	51 684	3	81 785	47	40 402	28	6 000	1
2020	0	0	57 629	29	76 954	33	0	0
2021	0	0	34 830	34	98 312	57	0	0
2022	0	0	91 088	49	91 716	48	8 500	1
Total	900 881		1 028 256		860 013		209 186	

Source: NAMRB, authors' calculations.

The State Budget Act 2024 established a special fund for local government investments in Bulgaria that would finance municipal investment projects with advanced project readiness. After the last 2024 update of the project pipeline, the total amount of planned investment under this fund for the period until 2026 reaches BGN 7,3 billion. The central government shall finance these projects with state transfers. By 31 Aug 2024, BGN 87 million are transferred for the implementation of 183 agreements signed between the Ministry of Regional Development and Public Works and the municipalities (2024, NAMRB Bulletin).

The Regional Development Program (RDP) adopts an integrated territorial approach for the 2021-2027 period implying that the municipalities will have to develop integrated territorial investment concepts that would be funded from different EU funds for shared management. The first call for proposals was implemented in 2023. The submitted concepts include 50 municipalities, in which lives 70% of the country's population. The municipalities, participating in the concepts, have applied for BGN 2.02 billion of investment financing or 55.8% of the overall financing requested by all entities in the integrated concepts. Meanwhile, the RDP has BGN 1,5 billion to finance this call.

5. Conclusions

No matter which documentary source is used to assess the municipal investment needs, local governments should allocate large amounts of funds to ensure their co-financing either directly or through credit resources.

Changes in the local revenue basis are urgently needed to increase the municipal own source revenues. These may include: revision of the real estate valuations, which have not been changed since 1997, changes in the patent tax and linking it to the taxpayers' actual turnover, possible introduction of agricultural land tax, etc. The latter would enable the rural

municipalities to improve their revenue basis because the first two proposals would affect mostly the urban municipalities.

Considering the present format of the fiscal relations among the central and the local government tiers in Bulgaria, these proposals would increase the municipal own source revenues but this would not ensure enough funds to even partially secure their investment programs. Overall revision of the framework of fiscal relations is needed in terms of the transfer of greater revenue powers to the local governments like tax sharing for the personal income tax, which until 2003 was the practice in Bulgaria. Besides this, the revenue disparities among the municipalities in Bulgaria are significant and the differentiation mechanism for the local revenue basis formation can be justified.

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ФИНАНСОВА УСТОЙЧИВОСТ И ПРИХОДЕН КАПАЦИТЕТ НА МЕСТНОТО САМОУПРАВЛЕНИЕ В БЪЛГАРИЯ

FINANCIAL SUSTAINABILITY AND REVENUE CAPACITY OF LOCAL SELF-GOVERNMENT IN BULGARIA

Резюме: Приходният капацитет на местното управление е от съществено значение за нормалното функциониране на публичната система в България. Целта на статията е да се дефинират надеждни изводи относно способността на общините да генерират устойчиви приходи. Резултатите показват, че липсва хомогенност в приходния потенциал на общините у нас, което определя нуждата от вземане на нови управленски решения.

Ключови думи: общини; приходи; данъци; държавни трансфери

Abstract: The revenue capacity of the local government is essential for the normal functioning of the public system in Bulgaria. The purpose of the article is to define reliable conclusions regarding the ability of municipalities to generate sustainable income. The results show that there is a lack of homogeneity in the revenue potential of the municipalities in our country, which determines the need for new management decisions.

Keywords: municipalities; revenues; taxes; state transfers

JEL: H71

1. Увод

Целта на изследването е да се открият някои основни изводи относно набора от фактори, които влияят върху приходния капацитет на общините (респективно върху тяхната фискална автономност) и на тази база да се дефинират конкретни решения. Получените резултати потвърждават вече дефинирани изводи. Има зависимост между социално-икономическото състояние и големината на общините (Ivanov, 2018). Приносът на изследването е, че се разнообразява обяснителната стойност на взаимовръзката между демографските процеси и приходния капацитет и се дават нови предложения за повишаване на приходния капацитет. Използваните методи са традиционни – сравнителен анализ, статистически методи, метод на експертната оценка и т.н.

2. Състояние на проблема

Самостоятелността на местната власт е важна част от идентичността на общините и възможностите за тяхното развитие (Mutafov, 2024). Финансовата устойчивост и автономност са от ключово значение при развитието на децентрализационните процеси в България. По-високите собствени приходи на общините и засилените компетенции на местното управление за прилагане на референтни показатели и измерване на изпълнението биха били някои от решенията за засилена финансова автономност на местно равнище (Peteri, 2023). Общините в България са изключително различни в своя комплексен социално-икономически профил. Това затруднява анализа относно това, какво е нивото на финансова автономност и устойчивост на местното самоуправление.

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Успоредно с това не могат да се изведат унифицирани решения относно повишаването на приходния капацитет. Проблемът, който отново се отчита, е изключителното разнообразие в социалните и демографските характеристики на общините, което оказва влияние и върху техните финансови показатели.

3. Методология / методологични подходи

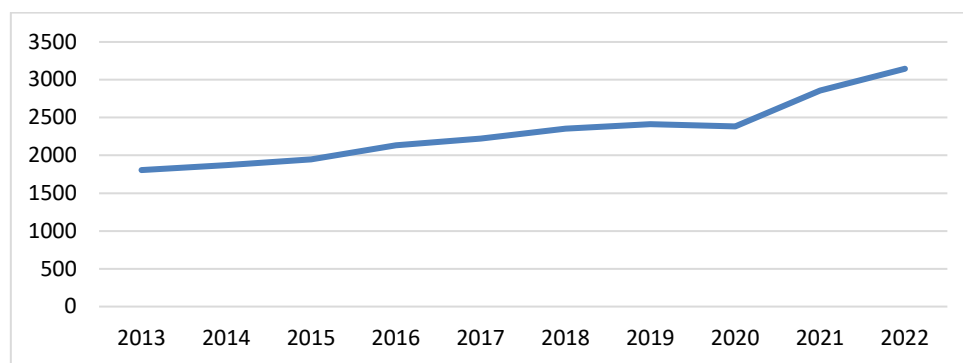
Използваните методи в изследването са традиционни за подобен тип анализ. Един такъв метод е статистическият метод и по-конкретно регресионният анализ. Основната задача на този вид статистически анализ е да предостави измерители за степента на зависимостта между изследваните променливи (Goev et al., 2019). От съставения регресионен модел се очаква да се изчисли коефициент на детерминация, който да има обяснителна стойност относно това в каква степен изменението на фактора население оказва влияние върху величината на собствените приходи. Коефициентите на регресионния модел се изчисляват чрез МНМК, като заложената статистическа грешка е 5%. Величината на собствените приходи предопределя в основна степен финансовата автономност и самостоятелност на местните бюджети. Населението участва по два основни начина в определянето на степента на финансовата автономност на общините у нас. От една страна, местната общност извършва данъчни и неданъчни плащания към общинския бюджет, а от друга страна, тя е консуматор на услуги от общините, които се финансират чрез общинските разходи. За местните публични блага е налице пространствена ограниченост при тяхното потребление (Brown, 1998). Поради тази причина се извеждат на преден план две основни зависимости за измерване на фискалната автономност и приходния капацитет. Първата показва какъв е делът на собствените приходи в съвкупните приходи на общината, а втората показва, каква част от общинските разходи се покрива с приходи. Чрез тази зависимост се търси определение за балансираността на общински бюджет и по-конкретно в частта му, която е фокусирана към местните дейности.

4. Резултати от изследването

4.1. Динамика на общинските собствени приходи

Собствените приходи на общините в България отчитат трайна тенденция към увеличение. На Фигура 1 е представена информация за динамиката на общинските приходи.

Фигура 1. Динамика в собствените приходи на общините в България (2013-2022 г.) (млн. лв.)



Източник: Обобщени данни на Министерството на финансите.

От фигурата е видно, че се очертава трайна тенденция към увеличение в собствените приходи. Линейното нарастване на приходите е ясно и видимо (с едно задържане през 2021 г.). Тази тенденция се проявява и в периоди на икономически и друг тип ограничения. Здравната ситуация в страната не попречи на тенденцията за линеино нарастване на приходите. В Таблица 1 е изведена информация за броя на населението за период от десет години.

Таблица 1. Население на България за периода 2013-2022 г. (млн.)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Население	7.25	7.20	7.15	7.10	7.05	7.00	6.95	6.92	6.84	6.45

Източник: Национален статистически институт, Раздел „Демографска статистика“.

4.2. Изследване на демографските тенденции върху размера на общите приходи

Представената по-горе информация илюстрира по-скоро парадокс, тъй като собствените приходи на общините пряко се детерминират от вложенията на домакинствата в движимо и недвижимо имущество, както и от други приходоизточници, които са пряко следствие от икономическите дейности на местните общности. Тази взаимовръзка е валидна, но се задава въпросът как от една страна населението в общините намалява, а собствените приходи се увеличават и то при условие, че държавата не е предоставила нови приходни правомощия на местното самоуправление. По-конкретно ситуацията е следната – за 10 изследвани години населението намалява с 11%, а собствените приходи нарастват с внушителните 74%. В тази връзка се проведе статистически тест, който има за цел да отговори съществува ли линейна връзка между промяната в броя на населението и промяната в собствените приходи. В Таблица 2 са представени някои от основните изводи.

Таблица 3. Групиране на общините според степента на детерминация на броя на населението върху размера на собствените приходи

Степен на детерминация	Брой общини
Висока	67
Значително	110
Умерена	31
Слаба	57
Общ брой	265

Източник: Собствени изчисления.

Интригуващо е обстоятелството, че липсва ясно изразен профил на общините, при които се наблюдават отделните степени на определеност. В Таблица 4 е дадено разпределението на общините според степента на детерминация.

Въпреки, че липсва ясна и отчетлива взаимовръзка, могат да се направят някои изводи според информацията в Таблица 4. Първият извод е, че връзката „**население-собствени приходи**“ е по-скоро валидна за най-малките общини с население до 40 000 души и по-конкретно при 161 общини, което съставлява 60% от всички общини в България. Най-големите общини в България по-скоро отчитат умерена и значителна определеност. В Таблица 5 са представени, някои от общините с най-отчетливи стойности.

Таблица 4. Разпределение на общините по степен на определеност и население.

Категория община по население	Висока	Значителна	Умерена	Слаба
1	39	85	24	53
2	11	15	4	3
3	8	3	0	0
4	4	4	0	1
5	2	0	0	0
6	2	0	0	0
7	1	1	0	0
8	0	1	0	0
9	0	1	0	0
10	0	0	1	0
11	0	0	1	0

Легенда: Категория 1 с население – до 20 000 души, 2 – до 40 000 души, 3 – до 60 000 души, 4 – до 80 000 души, 5 – до 100 000 души, 6 – до 120 000 души, 7 – до 160 000 души, 8 – до 200 000 души, 9 – до 320 000, 10 – до 340 000 души, 11 – над 340 000 души. Групиранката на общините е авторска и има за цел да открий някои специфични характеристики на общините от конкретна група.

Източник: Собствени изчисления.

Таблица 5. Регресионни стойности по видове въздействие и група общини

	Община	Категория (население)	R2	Коеф.	Sig. F
Силна	Елена	1	0.98	-1033.26	0.000
	Троян	2	0.97	-760.02	0.000
	Габрово	3	0.96	-719.41	0.000
	Враца	4	0.93	-1395.93	0.000
	Перник	5	0.91	-1821.41	0.000
	Плевен	6	0.89	-1028.25	0.000
	Русе	7	0.88	-755.58	0.000
Значителна	Черноочене	1	0.79	-452.99	0.000
	Ботевград	2	0.78	-2448.26	0.000
	Карлово	3	0.77	-1448.10	0.000
	Шумен	4	0.79	-1099.28	0.000
	-	5,6	-	-	-
	Стара Загора	7	0.79	-954.97	
	Бургас	8	0.71	-2562.02	0.002
	Варна	9	0.52	-2336.35	0.018
	-	10,11	-	-	-
Умерена	Момчилград	1	0.37	-631.55	0.060
	Лом	2	0.34	-528.91	0.080
	-	3,4,5,6,7,8,9	-	-	-
	Пловдив	10	0.25	-1635.63	0.132
	Столична	11	0.23	-4150.01	0.163
Слаба	Долни Дъбник	1	0.16	-425.61	0.254
	Кирково	2	0.02	89.05	0.672
	-	3	-	-	-
	Кърджали	4	0.04	-366.31	0.542
	-	5,6,7,8,9,10,11	-	-	-

Източник: Собствени изчисления.

Интерес представлява последната зона от общини, при които не се отчитат значимо въздействие на населението върху местния приходен капацитет. Там се наблюдават значими флуктуации върху анализирания показател. Например, в община Правец се наблюдава изключение от общата тенденция за намаляване на населението и в определени години то нараства значимо, след което отново се отчита спад.

И при останалите общини от тази изследвана зона се наблюдават подобни събития, в т.ч. и в собствените приходи.

4.3. Оценка на въздействието на демографските процеси върху агрегирани показатели за финансова автономност

Представява изследователски интерес, доколко тази информация кореспондира с данните за фискална автономност на общините. Тези данни са представени в Таблица 6.

Таблица 6. Избрани показатели за финансова автономност

	Община	Дял на приходите от общите приходи		Покритие на разходите за местни дейности с приходи	
		2022	2023	2022	2023
Силна	Елена	13.98	13.88	43.38	44.96
	Троян	25.08	21.98	79.98	58.91
	Габрово	26.42	25.09	66.98	82.88
	Враца	24.25	22.43	97.07	78.31
	Перник	29.51	29.23	84.93	72.49
	Плевен	28.04	23.60	109.62	111.52
	Русе	28.80	27.52	113.46	91.50
Значителна	Черноочене	9.83	8.33	37.22	24.13
	Ботевград	22.88	20.54	59.13	50.19
	Карлово	17.18	16.82	68.48	41.23
	Шумен	27.01	23.92	97.11	64.17
	-				
	Стара Загора	27.59	24.92	82.56	84.82
	Бургас	36.71	33.49	113.91	94.54
	Варна	41.28	37.56	122.31	95.02
	-				
Умерена	Момчилград	19.30	15.34	50.44	43.23
	Лом	17.91	15.70	65.82	62.71
	-				
	Пловдив	36.84	32.80	101.04	86.51
	Столична	44.69	42.23	108.65	111.59
Слаба	Долни Дъбник	14.69	11.78	57.33	49.45
	Кирково	9.27	8.26	32.27	25.45
	-				
	Кърджали	23.43	19.15	69.84	76.22
	-				

Източник: Министерство на финансите.

От Таблица 6 е видимо, че нивото на детерминацията на демографския показател „брой на населението“ не влияе видимо върху избраните показатели за финансова автономност. По-скоро отражение има населението на общината, отколкото определеността на регресора върху резултата.

5. Изводи

Парадоксът „население-приходи“ – намалението в населението на общините, което е съпроводено с линейно нарастване на собствените общински приходи, е обяснимо донякъде с това, че в резултат на нарастване на покупателната способност се увеличават вложенията в движимо и недвижимо имущество от страна на останалото по-малобройно население. Факт е, че за изследвания период на общините не е прехвърлен нов данъчен или неданъчен приходоизточник, който може да е в основата на тренда за нарастване на общинските приходи. Може да се търси и обяснение в повишаването на данъчните ставки, но законодателството (Закон за местните данъци и такси) все още си остава

консервативно в тази област, а и общинските администрации не се възползват от това да повишават своите данъци. Може да се търси и причина в това, че е нараснала събираемостта на местните приходи.

Различно ниво на определеност – интригуващо е различното ниво на определеност в собствените приходи в резултат на въздействието на демографските процеси. Логично би било тази връзка да е валидна за всички общини. При 20% такава връзка не се открива, като една от причините може да е ненадежността на първичната статистическа информация, но могат да се търсят и други обяснения, като например това е, че тези общини са с толкова влошени фискални показатели, че едва ли може да се говори за финансова автономност и устойчивост.

Размерът на общините – едва ли е изненада, но по отношение на избрани показатели, общините от по-високите групи население имат по-добри стойности по отношение балансирането на местни разходи със собствени приходи (вж. Таблица 6). Това отново води до извода, че е необходимо да се възстанови дискусията относно някои реформи в структурата и системата на местното самоуправление и по-конкретно окрупняването на общините в такива размери, че да няма общини под 25 000 – 40 000 души. Така се очаква, че ще се балансира съотношението между местните разходи и собствените приходи, което не трябва да пада под 60-65%, за да може дадена община да има претенцията, че поддържа устойчиво ниво на фискална автономност.

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ТЕРИТОРИАЛНИ И СЕКТОРНИ ПОТРЕБНОСТИ КАТО ФАКТОРИ ЗА РЕАЛИЗИРАНЕ НА ПЛАНОВЕТЕ ЗА ИНТЕГРИРАНО РАЗВИТИЕ НА ОБЩИНИ

TERRITORIAL AND SECTORAL NEEDS AS FACTORS FOR REALIZING PLANS FOR INTEGRATED DEVELOPMENT OF MUNICIPALITIES

Резюме: От гледна точка на целите на това изследване, ще визуираме териториалните потребности като ги съпоставим с т.нар. секторни потребности. На една територия живеят различни хора, работещи в реалния сектор. Всеки един от тях полага усилия за задоволяването на своите потребности, което на практика създава разнообразие, но също така и различия, доколкото предпочитанията на отделните представители са различни, а ресурсите за тяхното задоволяване са дефицитни. В рамките на текущото изследване се прави връзка между потребностите и възможността на заинтересованите граждани да участват в процеса на изпълнение и мониторинг на местни политики. Анализирани са нагласите на гражданите от община Симитли и тяхната възможност за участие в процеса на изпълнение и мониторинг чрез изпълнението на „Плана за интегрирано развитие на община Симитли“ за удовлетворяване на собствените си потребности и тези, отнасящи се за територията на общината.

Ключови думи: потребност; интегрирано развитие; общински съвет; заинтересовани страни

Abstract: From the point of view of the objectives of this study, we will look at the territorial needs by comparing them with the so-called sectoral needs. Different people live in one territory – working in the real sector. Each one of them makes efforts to satisfy their needs, which in practice creates diversity, but also differences, insofar as the preferences of individual representatives are different, and the resources for their satisfaction are scarce. Within the framework of the current research, a connection is made between needs and the possibility of interested citizens to participate in the process of implementation and monitoring of local policies. The attitudes of the citizens of the municipality of Simitli have been analyzed regarding their opportunity to participate in the process of implementation and monitoring through the implementation of the „Plan for Integrated Development of the Municipality of Simitli“ in order to satisfy their own needs and those related to the territory of the municipality.

Keywords: need; integrated development; municipal council; interested parties

JEL: P5; R

1. Увод

Ефективното управление в нашето съвремие изисква децентрализирано разпределение на основните държавни функции, разпределени на по-ниско общинско ниво. В своето ежедневие гражданите се нуждаят от задоволяването на многобройни и непрекъснато възпроизвеждащи се потребности. Организацията на дейности за предоставяне на разнообразни услуги за гражданите може да бъде възложена както на държавата, така и на общините или частния сектор. Тъй като става дума за разпределяне на обществени ресурси и блага, които представляват ценност за всички граждани или за отделни групи, отговорността за справедливостта в този процес е изцяло политическа². Разпределянето на ценностите между групите граждани на местно ниво е отговорност на общинските власти. При демокрацията местната власт е политическа институция на гражданите. За

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² Министерството на регионалното развитие и благоустройството. (2008). Местно самоуправление, предпоставки и тенденции (доклад). Достъпно на <https://www.mrrb.bg/bg/mestno-samoupravlenie/>.

гарантиране правото на гражданите на местно самоуправление и развитие на местната демокрация се създават правила и процедури. Тяхното познаване и правилно приложение е допълнително условие за съблюдаване на демократичните принципи за упражняване на властта и гражданския контрол върху нея.

2. Състояние на проблема

Формирането и задоволяването на потребностите осигурява и поддържа живота на хората. Всъщност, потребностите се образуват от осъзнаването на изискванията на съществуването на човека, които определят и качествената им характеристика. Тя се свързва с необходимостите на човешката природа и живот, които са безкрайно много и се увеличават, усложняват и усъвършенстват заедно с развитието на самия човек. Затова се формира количествено неограничена съвкупност, или система от потребности. На всеки отделен човек са присъщи едновременно разнообразни потребности, които се променят и допълват непрекъснато. Докато едни потребности се задоволяват, многообразието създава предпоставка за възникване на други потребности. Някои потребности изискват едно или ограничен брой удовлетворявания и е възможно по-късно да не се образуват, имат временен характер или обхващат определен период от човешкия живот. Но има и такива потребности, които не отпадат изобщо, а се насищат постоянно и се появяват отново. Следователно, системата от потребности се характеризира с непрекъснато свиване или разширяване, променя своята структура и състав. Потребностите се задоволяват количествено и качествено. Степента на задоволеност, на насищане, определя интензивността (напрегнатостта) на всяка потребност. При това колкото по-висока степен на задоволяване на дадена потребност е постигната, толкова по-малка е интензивността ѝ. Многообразието от различни хора, позиционирани на територията на дадена община, създава предпоставка за задоволяването на различни потребности. На практика, това създава разнообразие, но е и повод за различия, доколкото предпочитанията на отделните представители са различни, а ресурсите за тяхното задоволяване са дефицитни. Тези хора обаче живеят на една територия и имат общи интереси от нейното развитие. Към каквото и да се стремят отделните индивиди, те се обединяват по повод решаването на своите потребности, свързани с общото обитаване на територията. Примери за териториални потребности са:

- опазване на културно-историческо наследство, образование;
- околна среда и екология (зелени площи, вик и пречистване на води, въздух, управление на отпадъци и др.);
- социални услуги (интеграция на хората в неравностойно положение, безработица, подобряване на демографските показатели и др.);
- инфраструктура: транспортна свързаност, улична и тротоарна мрежа, обществен транспорт, енергийна мрежа, телекомуникация и др.;
- икономическо развитие;
- здравеопазване и медицински грижи;
- подобряване на градската среда на живот;
- услуги, свързани с осигуряване на сигурността на хората.

За разлика от териториалните потребности, секторните потребности са вертикални, зависещи изцяло от политиките за развитие на национално ниво. Те имат отражение

върху общностите, намиращи се на териториите на общините, но решенията се търсят на национално ниво. Примери за подобен вид потребности могат да бъдат:

- констатирани проблеми в сектор образование;
- изграждането на големи инфраструктурни обекти с регионално предназначение;
- проблеми отнасящи се до околната среда и водите.

На практика, задоволяването на териториалните потребности на хората изисква обединяване и взимане на решения на местно ниво чрез утвърдени механизми и прилагане на добри практики, заимствани от международния опит. При секторните потребности адекватните обединения са синдикати, съюзи на лекари, архитекти, писатели, спортни федерации, екологични организации и други подобни, които търсят не спецификата на територията, а унифицирани подходи, общи решения, поставят си единни цели.

В рамките на текущото изследване се прави връзка между потребности и възможността на гражданите да участват в процеса на изпълнение и мониторинг на местни политики. Анализирани са нагласите на жителите на община Симитли и тяхната възможност за участие в процеса на изпълнение и мониторинг на „Плана за интегрирано развитие на община Симитли“ с цел удовлетворяване своите собствени потребности и тези, отнасящи се до територията на общината.

3. Използвани изследователски методи / методология

За целите на проучването са използвани следните методи и подходи: провеждане на фокус групи; анкетно проучване; кабинетно проучване; провеждане на структурирано интервю.

4. Резултати от изследването

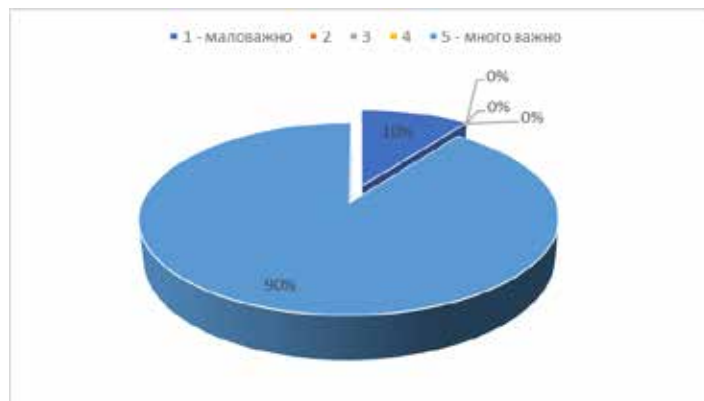
За осъществяване на изследването бе разработена Анкетна карта, включваща множество въпроси, насочени към субективното усещане на респондентите относно тяхната възможност за участие в процеса на изпълнение и мониторинг на „Плана за интегрирано развитие на община Симитли“. В резултат от анализа на проведеното Анкетно проучване се очерта разбиране за пречките и бариерите пред гражданите в процеса по изпълнение и мониторинг на ПИРО Симитли.

На въпроса *„доколко е важно процесът за планиране на политиките за местно развитие да се осъществява с максимално широкото участие на заинтересованите страни“* – представителни организации на бизнес сектора, граждански организации, граждански групи, – мнозинството от респондентите (Фигура 1) бе категорично, че е много важно процесът на планиране на политиките за регионално развитие да се осъществява с максимално широкото участие на заинтересованите страни. Останалите 10% от анкетирания бяха по-сдържани в оценката си. Според тях е маловажно участието на широк кръг от заинтересовани страни.

На въпроса *„мислите ли, че е важно/има смисъл, заинтересованите страни да участват както на етапа на формулиране на политики, така и на етапа на тяхната реализация“*, 90% от респондентите посочиха, че е много важно заинтересованите страни да участват както на етапа на формулиране на политики, така и на етапа на тяхната реализация. По този начин, всяка заинтересована страна може да проследи напредъка в изпълнението на

заложените политики и цели за развитие и да упражни мониторинг при необходимост. Останалите 10% от анкетираните бяха съдържани в оценката си, но отговорът им са доближи до този на мнозинството.

Фигура 1. Участие на заинтересованите страни в процеса на планиране на политики за местно развитие



Източник: Анкетно проучване.

Фигура 2. Участие на етапа на формулиране на политики, така и на етапа на тяхната реализация

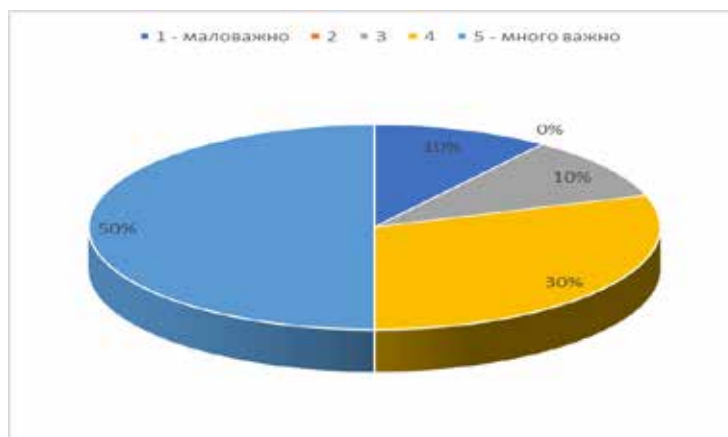


Източник: Анкетно проучване.

На въпроса „каква е вашата оценка за степента на осигуряване на възможност/достъп от отговорните власти за участие на заинтересовани страни в процеса на формиране на политики на местно и регионално ниво“, респондентите (Фигура 3) са дали разнородни отговори. Почти 50% от анкетираните дават най-висока оценка, докато други 40% са по-съдържани в отговора си. Около 10% от анкетираните дават ниска оценка. Безспорен факт е, че няма единодушие по поставения въпрос, но това се дължи на субективните очаквания на респондентите за тяхното участие в бъдещи събития.

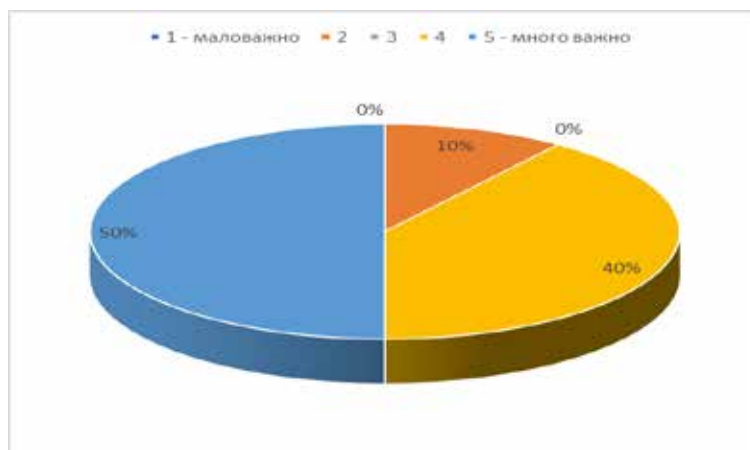
На въпроса „как оценявате интереса, активността на заинтересованите страни от участие в процесите за планиране на регионалното развитие“, половината от респондентите – 50% (Фигура 4) дават най-високата оценка. В случая това са лица, които защитават своите виждания и като представители на гражданското общество имат отговорност към територията в която живеят и се развиват. Както се вижда на Фигурата, 10% от анкетираните дават ниска оценка за участието и активността на заинтересованите лица в процесите на планиране. За тях участието в тези процеси няма особено значение и то е по-скоро формално, отколкото определящо. Около 10% от анкетираните заемат неутрално положение и по-скоро нямат мнение по този въпрос.

Фигура 3. Оценка за степента на осигуряване на възможност за участие на заинтересовани страни в процеса на формиране на политики



Източник: Анкетно проучване.

Фигура 4. Оценка на активността за участие в процесите на планиране на местно развитие

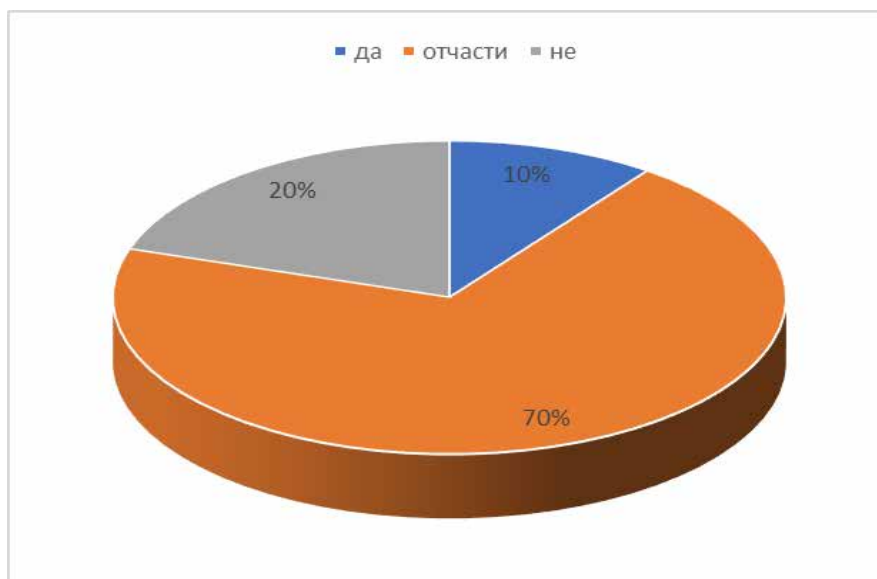


Източник: Анкетно проучване.

На въпроса „според вас, съществуват ли пречки, които ограничават степента на гражданската активност в процесите на планиране“, видно от Фигура 5, 80% от анкетираните са на мнение, че съществуват пречки, които ограничават степента на гражданска активност в процесите на планиране. От тях 10% са категорични в отговора си, докато останалите 70% са на мнение, че има конкретни причини, които ограничават участието на заинтересованите в процесите на формиране на политики. Около 20% от анкетираните са на мнение, че няма пречки пред всеки заинтересован, който има желание да бъде част от процесите по взимане на решение и паниране на местно ниво.

Респондентите бяха помолени да посочат основните пречки, ограничаващи тяхното участие в процеса и те дадоха разнообразни отговори. Видно от Фигура 6, по-голямата част от респондентите са на мнение, че основната пречка, ограничаваща гражданската активност в процесите по планиране на местно ниво, е „Липсата на ресурси – финанси и/или свободно време“, следвано от „Недостатъчни знания“ относно функционирането на процесите и механизмите по създаване и реализиране на политиките. Като причини респондентите изтъкват и „Недостатъчен интерес от страна на заинтересованите страни“, „Неефективни механизми за включването им в тези процеси“ и „Неефективна комуникация“ между заинтересованите страни и местната власт.

Фигура 5. Пречки, ограничаващи степента на гражданска активност



Източник: Анкетно проучване.

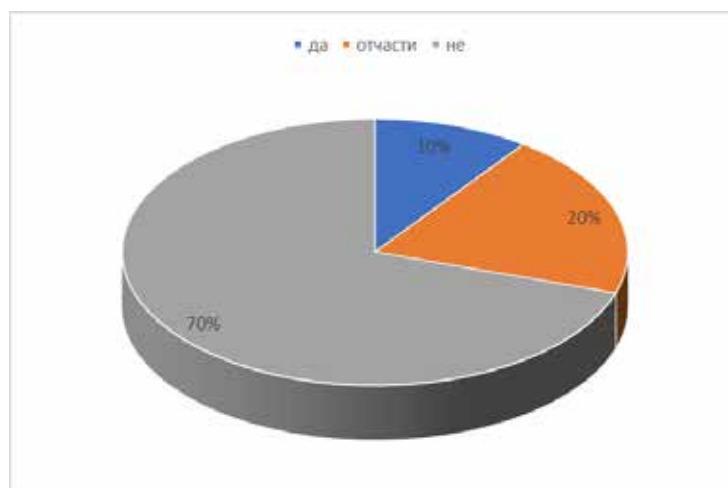
Фигура 6. Пречките ограничаващи участието на заинтересованите страни



Източник: Анкетно проучване.

На въпроса „мислите ли, че съществуващата нормативна уредба на местно ниво пречи/възпрепятства по някакъв начин на възможността за по-широко участие на заинтересованите страни, в частност гражданите, в процесите на планиране“, видно от Фигура 7, 70% от анкетираните са на мнение, че съществуващата нормативна уредба на местно ниво НЕ пречи по някакъв начин на възможността за по-широко участие на заинтересованите страни, в частност гражданите, в процесите на планиране. Едва 10% от анкетираните са на мнение, че нормативната база има пропуски и следва да се подобри. Останалите 20% от анкетираните са на мнение, че има пропуски в нормативната уредба и това се отразява на възможността за по-широко участие на заинтересованите страни и в частност на гражданите в процесите на планиране.

Фигура 7. Пропуски в нормативната уредба



Източник: Анкетно проучване.

5. Заключение

За постигането на качествен и пълноценен процес на стратегическо планиране и устойчиво интегрирано регионално и местно развитие, изключително важно е гражданското общество да бъде привлечено за участие на всички нива и етапи – и в отделните етапи на планирането, и в етапите на изпълнение, наблюдение и оценка на резултатите. Във връзка с постигнатите резултати, можем да предложим следните изводи и препоръки за гражданско участие в процеса на изпълнение и мониторинг на „Плана за интегрирано развитие на община Симитли“.

- Организиране на подходящи събития и публикуване на информация на сайта на общината и чрез информационното табло в центъра на гр. Симитли.
- Изграждане на публично-частни партньорства и реализация на проекти, насочени към подобряване на услугите, предоставяни на гражданите, бизнеса и заинтересованите лица;
- Разясняване на конкретните задачи, които стоят пред кмета, общинския съвет, общинската администрация, социалните и икономическите партньори, неправителствените организации и гражданското общество за осигуряване на висока ефективност при изпълнението на плана;
- Провеждане на информационни кампании относно необходимостта и значението на стратегическото планиране на местното развитие за повишаване на ефикасността и осигуряване на по-голяма добавена стойност за общината;
- Ангажиране на заинтересованите страни за формиране на позитивни обществени нагласи и активна гражданска позиция относно участието в процеса на планиране и осигуряване на обществена подкрепа за реализацията на плана.

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КРЪГОВА И ЗЕЛЕНА ИКОНОМИКА ЗА УСТОЙЧИВО РАЗВИТИЕ

CIRCULAR AND GREEN ECONOMY FOR SUSTAINABLE DEVELOPMENT

Резюме: Статията разглежда кръговата и зелената икономика като пътища за постигане на устойчиво развитие в ЕС и в България. Анализира се състоянието на разходите за опазване на околната среда като важен показател на зелената икономика. Оценяват се резултатите от прилаганите в страната дейности за въвеждане на кръгови подходи в икономиката и връзката им със зелените инициативи.

Ключови думи: кръгова икономика; зелена икономика; устойчиво развитие; мониторинг; разходи за опазване на околната среда

Abstract: The paper examines circular and green economies as pathways to sustainable development in the EU and Bulgaria. It analyses the indicator of environmental protection expenditures as an important one for the state of the green economy. It assesses the results of the activities implemented in the country to introduce circular approaches in the economy and their relationship with green initiatives.

Keywords: circular economy; green economy; sustainable development; monitoring, environmental protection expenditures

JEL: O20; Q01; Q50; Q59

1. Увод

През 80-те години на XX век се налага идеята за взаимовръзка между икономическите, социалните и екологичните проблеми, която намира израз в концепцията за устойчиво развитие (УР), формулирана най-ясно в Доклада Брунтланд от 1987 г. – устойчиво е развитието, което „удовлетворява нуждите на настоящето, без да подлага на риск способността на бъдещите поколения да задоволяват своите нужди“ (Brundtland, 1987). Концепцията за УР се конкретизира в 17 глобални цели за УР на ООН. Те обхващат различни аспекти и проблеми, целящи постигане на синергия в изпълнението на различни задачи. Дебатират се различни пътища за постигане на УР, различни политики и инструменти. Статията разглежда зелената и кръговата икономика като възможности за реализиране на УР чрез оценка на показатели за разходи за екологични и кръгови дейности.

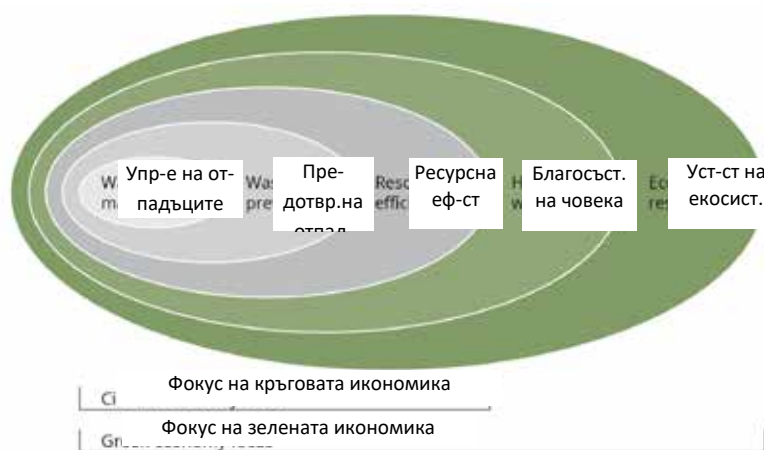
2. Състояние на проблема

Според доклада на Европейската агенция за околна среда (European Environmental Agency (EEA)) зелената икономика обхваща следните сфери: енергетика, емисии на парникови газове и озон-разрушаващи вещества, качество на атмосферния въздух, замърсяване на въздуха, емисии от транспортния сектор, отпадъци, вода, устойчиво

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потребление и производство, химикали, биоразнообразие и земеползване. Зелената икономика е по-широко понятие от кръговата икономика (ЕЕА, 2014) (Фигура 1). Европейският зелен пакт надгражда общите цели за УР и си поставя амбициозната задача да допринесе за превръщането на ЕС в модерна, ресурсно ефективна и конкурентоспособна икономика. Постигането на амбицията, определена в Европейския зелен пакт, ще изисква значителни инвестиции (ЕС, 2019). Този поток от инвестиции ще трябва да остане постоянен с течение на времето. Мащабът на инвестиционното предизвикателство изисква да се мобилизират както публичният, така и частният сектор. Индикаторът разходи за опазване на околната среда е включен в базите данни на Евростат както за мониторинг на УР, така и на Зеления пакт.

Фигура 1. Връзка: опазване на околната среда, кръгова икономика и зелената икономика



Източник: ЕЕА, 2014.

След увеличаване на негативните климатични явления вследствие на нараснали антропогенни емисии на парникови газове, в световен мащаб се разработват политики и инструменти за овладяване на климатичните промени, като се акцентира върху зелените инвестиции, но така също върху изоставяне на линейните подходи в използване на производствените ресурси. Кръговата икономика поставя акцент върху намиране на подходящите методи за удължаване използването на ресурсите в различните производствени и потребителски практики. Дейности като ремонтване и удължаване живота на готовия продукт до преработка на отпадъците с цел повторно връщане на ресурсите в производствения процес и минимизиране на депонирането им се превръщат в приоритети в съвременните подходи за икономическо развитие.

Планът за действие за кръгова икономика на ЕС от 2020 г. си поставя за цел да обхване всички етапи от производствените процеси на различните продукти, включително началните етапи по създаване на идейния дизайн и потреблението, които да допринасят за по-голяма устойчивост в използването. Фокусира се върху необходимостта от кръгови процеси при продукти като електроника, батерии, транспортни средства, опаковки, пластмаса, текстил, строителни материали, храни и води. Оценяването на напредъка към по-висока степен на кръговост е важен етап от придвижването към постигане на целта, поради което Европейската комисия (ЕК) създава и през 2023 г. ревизира рамка за мониторинг на кръговата икономика (Фигура 2).

Рамката включва показатели, чрез които се търси достигане на цели в няколко направления. Потреблението на материали и генерирането на отпадъци дава оценка за състоянието на производството и потреблението. За доброто управление на отпадъците

се прилагат коефициенти, изследващи практиките по рециклиране. Завършването на кръговия подход се постига с оценката на рециклираните материали, които са върнати обратно в производството. Степента на реализиране на кръговия процес зависи от частните инвестиции и иновациите, а положителните практики се отразяват върху постигането на по-висока устойчивост чрез намаляване на потребителския отпечатък, на зависимостта от вносни ресурси и на емисиите на парникови газове.

Фигура 2. Рамка за мониторинг на кръговата икономика



Източник: ЕК. (2023). Съобщение на Комисията до Европейския парламент, Съвета, Европейския икономически и социален комитет и комитета на регионите относно преработената рамка за наблюдение на кръговата икономика, COM(2023) 306 final.

3. Методология / методологични подходи

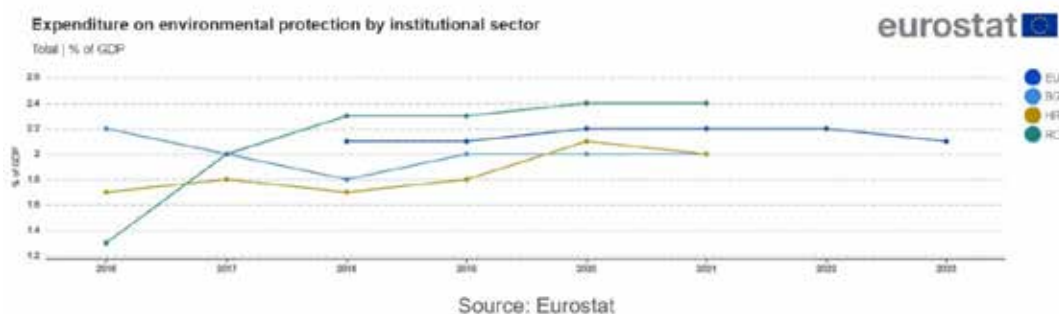
За провеждане на изследването в статията са избрани различни индикатори, включени в програмите за мониторинг на Евростат. Предимството на този подход е, че осигурява съпоставими данни както на ниво ЕС, така и за отделни страни. Проблем е, че данните по страни, свързани с околната среда, поради естеството им на събиране и обобщаване, се публикуват с две години закъснение, за разлика например от данните за заетост, инфлация и др. Разходите за опазване на околната среда в България се отчитат на равнище предприятие съгласно Национален счетоводен стандарт 6 „Отчитане на разходите за опазване на околната среда”. Делът на разходите за опазване и възстановяване на околната среда от произведения БВП е основен измерител на предприетите от обществото и държавата мерки за намаляване на натиска върху околната среда.

В статията се оценява зелената икономика на база на разходите за околна среда и се допълва с оценка на кръговостта на икономиката чрез показателите за мониторинг на ЕС. Оценява се тенденцията, а така също и позиционирането на България спрямо останалите държави членки на ЕС. Зелената и кръговата икономика се доближават в търсенията им на възможности за ресурсна ефективност и за намаляване генерирането на отпадъци, като зелената икономика надхвърля идеята на кръговата по отношение търсенето на екологични инициативи в секторите, в които се генерират съществени емисии на парникови газове, а кръговата икономика набляга на иновативността чрез нови начини на проектиране на продуктите с оглед безотпадност на производството, дългосрочност в използването и връщане на материалите повторно в производствения цикъл.

4. Резултати от изследването

Разходите за опазване на околната среда в ЕС като дял от БВП се движат в тесни граници около 2%. През последната наблюдавана година (2021 г.), тези разходи са съответно приблизително 2.4% в Румъния, 2% в България и Хърватия и 2.2% в ЕС (Фигура 3).

Фигура 3. Общи разходи за опазване на околната среда (% от БВП)



Източник:

https://ec.europa.eu/eurostat/databrowser/view/env_ac_epneis1__custom_13444819/default/line?lang=en.

В България в периода 2002-2012 г. дялът на екологичните разходи от БВП е между 1.4% (2005 г.) и 2.4% (2008 г.), а най-високият дял е достигнат през 2014 г. – 4%. След това се отбелязва тенденция към намаление и през 2017-2021 г. екологичните разходи спадат до 1.9% от БВП (текущи цени). Текущите разходи са с преобладаващ дял в общите екологични разходи – между 76.2% (2017 г.) и 73.3% (2021 г.). Разходите за научно-изследователска дейност са незначителен дял от общите екологични разходи – под 0.01% (NSI, 2024). Основен източник за финансиране на екологичните инвестиции са оперативните програми на ЕС.

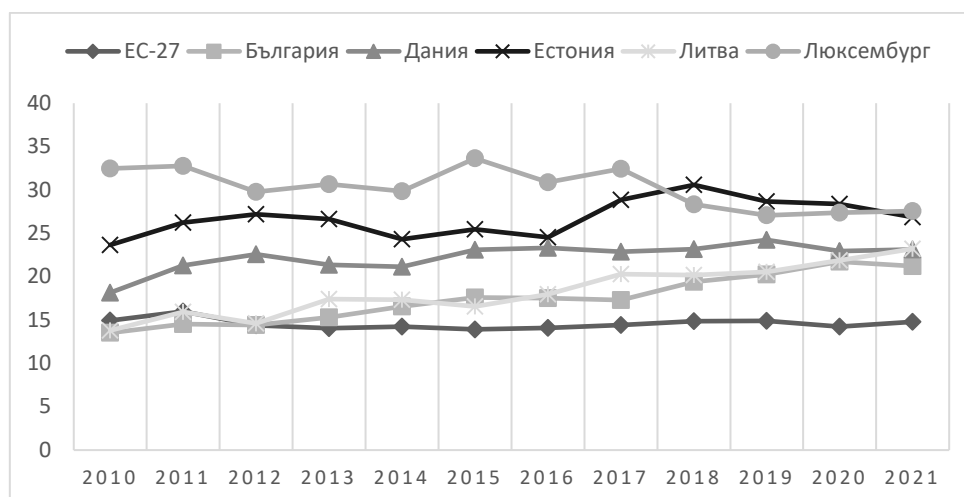
Още при създаване на методологията за оценка на кръговата икономика ЕК оценява, че ЕС е постигнала самодостатъчност при неметалните материали (строителни и индустриални), но при критичните суровини в значителна степен разчита на внос, регистрират се и положителни тенденции в редица от измерваните направления (ЕК, 2018). Тази оценъчна рамка включва „основните елементи на кръговата икономика, включително жизнения цикъл на продуктите и материалите, приоритетните области и сектори, и въздействието върху конкурентоспособността, иновациите и заетостта“ (ЕК, 2018). Допълването ѝ през 2023 г. цели да засили „взаимовръзките между кръговата икономика, неутралността по отношение на климата и амбицията за нулево замърсяване“ (ЕК, 2023). Препоръките на Европейската сметна палата (ЕСП) са за подобряване на критериите с акцент върху кръговото проектиране на продуктите (Evropeyska smetna palata, 2023). ЕСП изразява дълбоко съмнение, че темповете на рециклиране ще позволят постигане на целевите нива – удвояване до 2030 г. Ефективността на инвестициите е ниска, тъй като финансирането от ЕС се насочва приоритетно към дейности с по-нисък потенциал за намалено екологично влияние, каквито са управлението на отпадъците.

На база на включените в рамката за мониторинг показатели, оценката за кръговостта на ЕС през 2020 и 2021 г. показва подобрене спрямо 2010 г. при повечето наблюдавани величини. Намалява материалният отпечатък, повишава се ресурсната ефективност, нарастват инвестициите, заетостта и добавената стойност от секторите на кръговата икономика. В същото време се увеличават отпадъците от опаковки и от пластмаса. На

този фон резултатите за България за 2021 г. показват по-слаби позитивни промени, които в повечето случаи изостават от средните стойности на ЕС.

Потреблението на суровини, измерено чрез показателя материален отпечатък, в България нараства с над 50% за периода 2010-2021 г., което показва високата материалоемкост на производството в страната за разлика от средните стойности за ЕС, които са относително стабилни през разглеждания период (Фигура 4).

Фигура 4. Материален отпечатък (т/човек от населението)

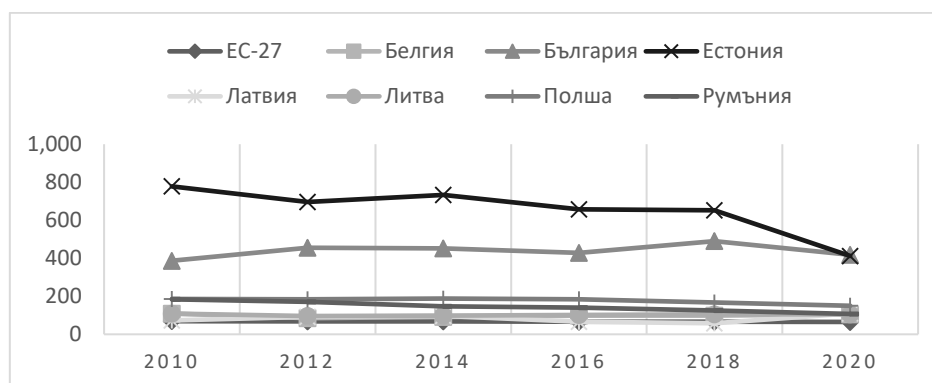


Източник: собствени изчисления по данни от Евростат, <https://ec.europa.eu/eurostat/web/circular-economy/monitoring-framework>.

Стойността на този показател за България се доближава до държави като Дания, Литва, Австрия и Швеция. В същото време производителността на ресурсите намалява и е най-ниската в ЕС, отдалечавайки се от икономически развитите западни държави и е по-близо до равнището в Румъния.

Генерирането на отпадъци се характеризира с намаляване с 20% на абсолютния им обем за разглеждания период в контраст с увеличението в ЕС и е на равнището на отпадъка в Хърватска, като там тенденцията е към увеличаване. Количеството отпадък спрямо БВП поставя България на челна позиция през 2020 г. Въпреки че тенденцията е към подобряване на този показател, той е над 6 пъти по-висок спрямо средноевропейския (Фигура 5).

Фигура 5. Генериран отпадък спрямо БВП – кг/хил. евро БВП (верижни стойности = 2010)



Източник: собствени изчисления по данни от Евростат, <https://ec.europa.eu/eurostat/web/circular-economy/monitoring-framework>.

При общия отпадък, измерен на глава от населението, се наблюдава сходна тенденция в България с някои подобрения. Той намалява до 2020 г., но е 4 пъти по-висок от средноевропейския и само Финландия е с по-висок размер. За разлика от общия отпадък, през 2021 г. хранителните отпадъци на човек от населението в страната са на едно от най-ниските равнища и са под средните стойности на ЕС, което демонстрира добра степен на оползотворяване на храната. Отпадъците от опаковки на човек от населението нарастват до 2019 г. и са около 2 пъти по-ниски от средните в ЕС, като само Хърватска постига подобри равнища. Подобно е състоянието и при пластмасовите отпадъци на човек от населението – те нарастват до 2019 г. и са под средната европейска стойност. С по-добър резултат са Гърция, Хърватска, Кипър и Латвия.

Управлението на отпадъка дава нови възможности за извличане на използвани материали и връщането им в производството. Делът на рециклирания общински отпадък се увеличава с 4 пр.п. от 2010 до 2021 г., когато достига равнище от 28.2% и е 57% от средния за ЕС. Няколко държави членки се справят по-слабо в сравнение с България при управлението на отпадъка. Делът на рециклирания общ отпадък, обаче, е най-нисък при сравнение с останалите държави членки и над два пъти по-малък от средната стойност за ЕС през 2018 г. Делът на рециклираните опаковки намалява и България се нарежда сред 7-те държави с най-нисък дял. България не успява да постигне високи нива на рециклиране, което я лишава и от възможности за увеличаване на производителността. При рециклирането на електрически и електронни уреди България постига високо равнище – 89% дял и се нарежда сред най-добрите 5 страни. Успешното рециклирането на електроника и електротехника може да се използва като подход за справяне и с другите видове отпадъци и повишаване дела на рециклирането им.

Връщането на отпадъка в производствените дейности дава възможност за намаляване на ресурсоемкостта на икономиката и оптимизиране на разходите. Над 2 пъти е по-нисък коефициентът на кръгово използване на материалите в страната спрямо средното в ЕС. През 2021 г. България се позиционира сред 9-те членки с ниска степен на повторно използване на материалите. Регистрира се нарастване на търговията с рециклируеми материали, особено през 2022 и 2023 г.

Показателите, оценяващи постигането на кръговост в икономиката на България, показват слабо използване на различните възможности, които предоставя кръговата икономика. Въпреки че се регистрира нарастване на частните инвестиции в кръгови дейности, те не са достатъчни и тези дейности имат брутна добавена стойност с дял от 1.5% от БВП през 2021 г. Лицата, наети в отраслите на кръговата икономика, се увеличават слабо – с 3% през 2021 г. спрямо 2012 г. и достигат до малко над 52 хил. души, което не представлява съществен дял от заетостта в страната – 1.8%. Слабите резултати по отношение развитие на предпоставките за повече кръгова икономика се дължат и на липсата на патенти за управление на отпадъка и рециклирането.

5. Изводи

ЕС си е поставил амбициозни цели за устойчиво развитие, за опазване на компонентите на околната среда, за неутрализиране емисиите на парникови газове. Изпълнението им изисква значителни финансови ресурси. Делът на тези разходи в БВП се задържа на едно равнище, като в България се очаква дори да намалява, предвид забавеното изпълнение на Плана за възстановяване и устойчивост. Нисък е делът на зелените инвестиционни разходи, разходите за НИРД са незначителни.

Резултатът от дейностите, които са предприети за развитие на кръговата икономика, са увеличаване на потребителския отпечатък, годишно измерение на парниковите газове на човек от населението между 7.5 хил. и 8.3 хил. кг/човек от населението, задържане на зависимостта от вноса на материали на около 42%. Въпреки забелязаните тенденции към увеличаване на повторното използване и рециклиране, България е със слабо представяне при пестенето на ресурси и тяхното повторно и дългосрочно използване. Страната няма да успее да отговори на европейските цели, което ще води до намалена конкурентоспособност. Липсата на иновации и инвестиции в тези направления допълнително ограничават бъдещия потенциал за извличане на ефективност. Липсата на данни за планиране на жизнения цикъл на различните производствени дейности също затрудняват оценката на придвижването към по-висока степен на кръговост, като усложнява и планирането и насърчаването на подобни дейности, а не само обичайното разделно събиране. Опростяването на мерките към кръгова икономика до дейности по третиране на отпадъка, без инвестиции в превантивни и осигуряващи ресурсна ефективност производства, ограничава възможността за разгръщане на потенциала за ресурсна ефективност и иновации.

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EU COHESION AND WASTE MANAGEMENT: ANALYSING MUNICIPAL WASTE PERFORMANCE THROUGH ECONOMIC AND POLICY LENSES

Abstract: This article studies Bulgaria's performance in municipal waste management within the broader EU framework. EU Cohesion Policy has provided substantial funding for waste management projects, but it is difficult to fully assess their impact. Drawing on Eurostat data, Bulgaria's progress is compared with EU averages and selected member states, analysing the degree of cohesion between them. A combination of data analysis and descriptive methods is used to consider the performance of municipal waste management in Bulgaria within the EU framework. The period under review is from 2012 to 2021. A regression analysis assesses the influence of GDP and other factors on recycling rates, based on the assumption that economic development is applied in driving improvements in waste management outcomes. The disparities among member states in terms of recycling rates and waste generation trends highlight that economic development, does not always correlate with better recycling performance. Countries with higher GDPs sometimes show lower recycling rates, including compared to Bulgaria, underscoring that factors beyond economic indicators play a crucial role.

Keywords: municipal waste management; cohesion; Bulgaria; European Union

JEL: C31; H54; H72; Q53

1. Introduction

The EU's waste management policies play a fundamental role in shaping the environmental sustainability and economic integration of its member states. Since the adoption of the Waste Framework Directive (Directive 2008/98/EC), the EU has set increasingly ambitious targets for waste reduction, recycling, and landfill diversion as part of its commitment to achieving a circular economy. Central to these efforts is the Circular Economy Action Plan (2020), which underpins the EU's broader environmental goals of decoupling economic growth from resource use and minimizing environmental impacts. Within this regulatory framework, member states are expected to align their national policies and practices with the EU's objectives. However, variations in economic development, infrastructure, and waste management practices among member states create disparities in performance. Bulgaria, a member state since 2007, illustrates these challenges. Despite EU funding and regulatory support, the country struggles to meet the ambitious waste targets set by EU directives.

2. State of the Problem

The Waste Framework Directive establishes the waste hierarchy, promoting prevention, reuse, recycling, and recovery over disposal. Key instruments after the 2018 amendments include a 55% recycling rate for municipal waste by 2025, increasing to 60% by 2030 and 65% by 2035.

The transition to these targets has been uneven across the EU, with significant disparities in performance between member states. Countries such as Germany and Austria have surpassed 65%, while Bulgaria's municipal waste management has still a heavy reliance on landfilling largely due to inadequate waste collection and insufficient pre-treatment. Although Bulgaria

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does not face a shortage of recycling infrastructure, much of its capacity remains underutilised for domestic municipal waste.

Effective waste management policies rely not only on infrastructure but also on strong public participation. Public education and incentives are essential to improving recycling participation, suggesting that behavioural factors often have as much impact as economic ones (Berglund, 2006). Similarly, economic instruments play a critical role. “Pay-as-you-throw” schemes, where households are taxed based on the volume of generated waste, can significantly encourage higher recycling rates (Kinnaman, Fullerton, 2002). The implementation of this key economic policy instrument continues to face challenges in Bulgaria, as of 2024. However, the success of such schemes depends on their design and public acceptance, as demonstrated by variations in waste recycling rates across countries.

EU cohesion policy aims to reduce regional disparities by directing investments toward less developed regions, such as Bulgaria. Nonetheless, their effectiveness depends on complementary national policies, regulatory enforcement and institutional capacity. The EU has provided substantial funding to Bulgaria through the Cohesion Fund and the European Regional Development Fund under the Operational Programme „Environment“ (OPE). The total allocation for Bulgaria’s environmental infrastructure amounted to approximately €1.7 billion between 2014 and 2020, a large portion of which was directly related to municipal waste management. As many projects from that period are still underway, it is difficult to fully measure the programme's overall impact.

The performance gap between Bulgaria and the EU average in municipal waste management can be attributed to several factors, including economic constraints, institutional weaknesses, and public engagement challenges. Bulgaria’s recycling rate for municipal waste, which stood at 28.2% in 2021, is significantly below the EU’s target of 55% by 2025 and the average EU rate of almost 50%. In contrast, countries like Germany, Austria and the Netherlands which have well-established waste management systems and higher GDP levels, have already surpassed the target.

Academic research widely supports the argument that GDP per capita is a significant predictor of waste management outcomes. However, a recent analysis of Eurostat data on municipal waste highlights that this relationship is not always straightforward. In 2021 there are 10 EU member states apart from Bulgaria with recycling rates still below 40%. Among these Romania, Malta, Greece, and Cyprus reported rates significantly lower than Bulgaria, while Estonia, Croatia, and Portugal average at 30%, all of them ranking higher in GDP per capita. This discrepancy highlights that while economic development tends to correlate with better waste management performance, it is not the sole determinant. Institutional capacity, public awareness, and the efficiency of waste collection systems are also crucial for recycling outcomes.

3. Methodology

The following key indicators are used:

- Municipal waste generated and recycled (in thousand tonnes and per capita); recycling rates derived from them;
- GDP per capita, adjusted for inflation (chain linked volumes, 2015 prices);
- Government expenditure (in million euros and percentage of GDP) and investments in waste management;

- Private sector investments in waste management (in million euros);
- Municipal waste handed over for pre-treatment in Bulgaria (in thousand tonnes).

All data were sourced from Eurostat except for pre-treated municipal waste (National Statistics Institute (NSI), Bulgaria).

The approach comprises of descriptive analysis of time series and a regression analysis. The data on municipal waste generation, recycling, and pre-treatment were carefully examined over the ten-year period. Eurostat data provided insight into the overall trends for Bulgaria and other EU countries. Data from Bulgaria's NSI was used to analyse the trend in handed-over municipal waste for pre-treatment, to assess the impact of infrastructure development linked to the completion of EU-funded projects.

The second stage of the analysis involved a linear regression model for Bulgaria, where the municipal recycling rate was used as the dependent variable. The independent variables in the model included real GDP per capita, total government expenditure, and government and private investment in waste management. The goal was to explore the potential relationship between economic factors and recycling performance, testing the hypothesis that increasing GDP per capita and greater investments contribute to improved recycling outcomes in Bulgaria.

The analysis does not yet include a formal multicollinearity check, which is a future step to ensure the robustness of the regression model. The ongoing construction of waste facilities means that the full impact of EU funds cannot yet be fully evaluated for Bulgaria. At the EU level, further years of data will be required to fully assess the long-term impacts of both the pandemic and the legislative changes of 2018.

4. Research Results

Generated and recycled municipal waste

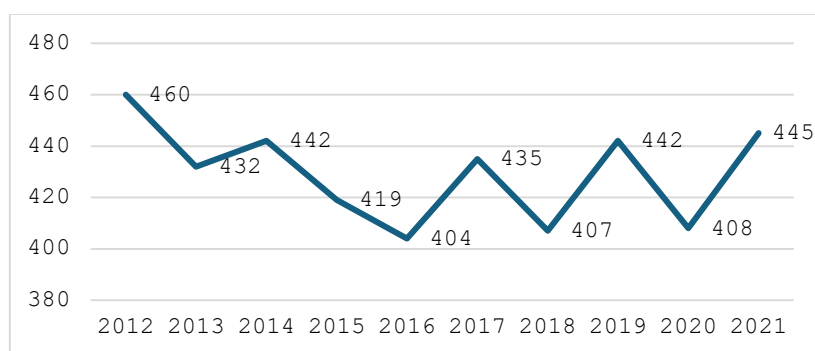
Overall, the total waste generated at the EU level has been gradually increasing. However, country-specific fluctuations present a more complex picture. In Belgium, waste generation steadily declined until 2016, followed by a significant rise – over 40% from 2019 to 2020. Such fluctuations are mirrored across the EU, with 12 states seeing a decrease in municipal waste during the pandemic in 2020. Austria, Belgium, and Germany saw sharp increases in waste generation, whereas Italy, the Netherlands, and France experienced marked declines.

The kg per capita indicator is crucial in the analysis as it accounts not only for the volume of waste generated but also for any demographic and consumption shifts. It varies significantly, especially between states with comparable economic development, from Romania (302), through Sweden (418) and France (564) to Austria (835), against the EU average of 535.

Accurate statistical reporting is another critical factor in understanding waste trends, especially in Bulgaria. Throughout the analysis period, Bulgaria exhibited significant fluctuations in municipal waste generation. Despite a consistent rise in GDP per capita and a steady population decline, there is no clear trend in waste generation, either in total or per capita terms (Figure 1).

This lack of clarity complicates any attempt to establish baseline hypotheses for a potential correlation between economic performance and waste generation, which in turn, being its denominator is essential for recycling rate evaluation.

Figure 1. Generated municipal waste per capita in Bulgaria



Source: Eurostat.

Waste recycling is a function of multiple factors that are difficult to study unequivocally. The quantities in thousand tonnes are more indicative of the development of the waste management systems, as the recycling rate depends both on the efficiency of the collection and recycling systems and on the level of waste generation. Large countries (Germany, Spain, France, Italy and the Netherlands) accounted for 77% of the total amount of waste recycled in the EU in 2012, with this share decreasing to 71% in 2021, where Belgium, Austria and Poland have contributed with a significant increase in recycled quantities. Most of the countries show a smooth increase for the period. Interestingly, Sweden has exhibited a notable decrease in recycling over the last two years.

At the EU level, the recycling rate has risen from 40.9% to 49.8% in ten years. Comparing this indicator, several countries have achieved substantial changes. Increases of more than 15 p.p. in 2021 compared to 2012 are mostly observed in Czechia, Slovakia, Slovenia, Croatia, Denmark, Lithuania, Latvia and Poland. After 2018, the increase is much smaller, with only Czechia, Slovakia and Latvia showing an increase of more than 10 p.p. Seven countries, including Bulgaria, have a lower recycling rate in 2021 compared to 2018. The development of recycling systems is obviously premised on the overall policy in the long term, and the 2018 amendments do not suggest an influence towards a sharper jump in rates. Regarding the previously set EU recycling target, only seven countries achieved the required 50% rate for 2020.

For Bulgaria, a particular fluctuation again stands out, both in tonnes and in recycling rates. In 2021, 861 thousand tonnes were recycled (after a three-year decrease) compared to 841 in 2012, while 2017 shows over 1,000 thousand tonnes. In terms of rate, 28.2% in 2021 is well below 35.2% in 2020, which after three years of gradual increases was the highest result for the whole period.

An increasing trend in the volume of waste handed over for pre-treatment in Bulgaria was observed from 2014 to 2021, in line with the completion of EU-funded projects. However, there were significant fluctuations, such as a decrease in 2015 compared to 2014, and a similar drop in 2019. These fluctuations did not correspond to changes in the recycling rate, suggesting that other factors – potentially related to changes in reporting practices – may have influenced recycling outcomes. In addition, Eurostat shows separately data on composted bio-waste targeted by a significant number of OPE projects. The highest figure of over 300 thousand tonnes was in 2015, before most of the composting plants were launched. In 2020 and 2021 they are 89 and 66 thousand tonnes respectively. This again makes difficult the evaluation of any impact of the EU funds as an element of the European cohesion policy.

Waste management expenditure and investment costs

The waste management investment provides a further basis for the analysis demonstrating different approaches by individual countries. In France, public investment is almost 11 times higher than in Germany, which has been steadily declining in recent years (€428 million in 2012 compared to €126 in 2021). Austria, Belgium and Sweden show different fluctuations over the period and hardly comparable levels (18,215 and 785 million respectively in 2021), for comparable quantities of generated and recycled waste. The Netherlands has shown a steady increase over the last 3 years, reaching €1030 million in 2021.

Private investment should be also considered, although this can hardly be directly attributed to the recycling of municipal waste alone. Investment in Germany shows the most sustained upward trend, reaching €2,324.2 million in 2021. This compares with €790.7 million in France and €725.1 million in Belgium. Austria, the Netherlands and Sweden are €407.4, €738.1 and €199.7 million respectively. In Bulgaria, the figures for public investment are more than double those for private investment, averaging around €70.5 million to €27 million.

Government expenditure on waste management shows again significant differences between countries, considering the levels of generated and recycled waste. Fluctuations are still observed, but the smooth upward trends stand out in all countries. As a share of GDP, this indicator is 0.6% for Bulgaria against the EU average of 0.4, with only Greece at 0.8.

Regression analysis

The regression analysis examines the relationship between Bulgaria's recycling rate and the four independent variables stated before. The results indicate a Multiple R of 0.751, suggesting a moderately strong positive correlation between the independent variables and the recycling rate. The R-squared shows that only about 56.4% of the variation in the recycling rate is explained by the model, while the Adjusted R-squared of 0.215 suggests that it may not be a strong predictor of recycling performance.

In terms of individual variables, GDP per capita has a positive but statistically insignificant effect on the recycling rate (p-value = 0.129), while total government expenditure shows a negative coefficient, indicating a potential inverse relationship, though this too is not significant (p-value = 0.231). Both government and corporate investments have positive but insignificant coefficients (p-values of 0.694 and 0.468, respectively). The overall model is not statistically significant (F = 1.617, p-value = 0.302), implying that the selected independent variables do not collectively provide a robust explanation of Bulgaria's recycling rate.

These results suggest that additional variables or further refinement may be needed to fully capture the factors influencing recycling performance. However, the recycling rate itself raises several concerns regarding the accuracy and consistency of its calculation.

5. Conclusion

This study sheds light on the challenges and complexities of municipal waste management in Bulgaria within the broader EU context. While the EU Cohesion Policy has provided substantial funding for waste management projects, it is difficult to fully assess their impact. Moreover, the disparities among member states in terms of recycling rates and waste generation trends highlight that economic development, does not always correlate with better recycling performance. Countries with higher GDPs sometimes show lower recycling rates, including compared to Bulgaria, underscoring that factors beyond economic indicators play a crucial role.

Accurate data reporting is critical to understanding these trends, particularly in Bulgaria, where fluctuations raise questions about reliability. The regression analysis indicates that GDP per capita and waste management investments do not robustly explain Bulgaria's recycling rate. Given the complexity of factors impacting waste management, including recent legislative changes, a longer time horizon will be necessary to observe meaningful trends and evaluate the true effectiveness of implemented policies and performance.

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MOTIVATION AND ATTITUDES OF BULGARIAN AGRICULTURAL PRODUCERS IN THE CONTEXT OF THE GREEN DEAL

Abstract: *The article aims to investigate to what extent the ideas in the Green Deal policy align with the activities and understandings of agricultural producers in Bulgaria. The research used data from two nationally representative surveys conducted in 2012 and 2024. The analysis results in both periods show a correspondence between the Green Deal ideas and the practices of farmers. At the same time, in both periods, the respondents highlighted some bottlenecks in the administrative processes related to implementing the policies and access to technologies. Communication between the producers and administrative authorities must be reevaluated to overcome these bottlenecks.*

Keywords: *Green Deal; Farmers' Perceptions*

JEL: Q01; Q18; Z13

1. Introduction

The Green Deal is the EU's strategic plan to make Europe a climate-neutral continent by 2050. The EU „Biodiversity Strategy 2030“ and the „Farm to Fork“ strategies are crucial elements for agriculture. Both strategies aim at a reduction in pesticide use (50%), chemical fertilisers (20%), and an increase in areas with organic production (25%) until 2030. Special attention is paid to the agricultural land preservation and restoration of soil ecosystems.

The new CAP (2023-2027) aims to achieve the Green Deal goals. It seeks Social, Environmental, and Economic sustainability and sets ten specific goals. The EC members develop their national strategic plans considering the local conditions. The Bulgarian Strategic Plan (2023-2027) sets three general objectives that correspond to the new CAP: (1) development of an intelligent, sustainable and diversified agricultural sector guaranteeing food security; (2) emphasis on environmental care and climate action; (3) strengthen the socio-economic structure of rural areas. Ninety-two interventions are developed to achieve the specific and the general goals.

The Green Deal policy seems plausible, aiming to improve the quality of life, improve production practices, reduce pollution, etc. Substantial financial resources are also provided in the EU and National budgets. However, the farmers are protesting in Bulgaria and Europe, expressing their disagreement with the Green Deal (Berlin, 15.01.2024; Brussel, 04.07.2024).

This article aims to analyse the attitude of Bulgarian farmers towards implementing sustainable practices described in the Green Deal documents and propose possible solutions that could mitigate the conflicts between politicians and farmers.

2. Previous Studies

Many previous studies have addressed farmers' perceptions of the CAP greening process. Several of the most recent ones that used data collected through questionnaires and included a sufficiently large number of respondents are presented. McCormack et al. (2024) study the

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evolution of Irish farmers' attitudes toward combining direct payments with cross-compliance requirements. The authors find a positive trend in changing the farmers' perceptions in favour of introducing more environmentally friendly practices. Bethge & Lakner (2023) separated the German farmers into three groups: independents – favouring competition; conservatives – favouring income support through direct payments; and environmentalists-favouring environmentally based approach. These authors call for a more differential approach to policy design and a more extended period for farmers to become a part of the process.

Yovchevska (2021) investigates the level of Bulgarian farmers' awareness of the natural resources used in agriculture. She concludes that although farmers seem to be sceptical, the changes in current farming practices to more environmentally friendly could be an opportunity to increase the socio-economic situation in rural areas and improve the human living environment. According to Shukadarova (2022, 2023), the competitiveness of Bulgarian grain production would decrease due to the Green Deal strategy. Therefore, the increase in the environmental standard should be smoother, and the interventions should be reconsidered. Kabadzhova et al. (2024) find that most farmers believe ecological practices would positively affect the environment. However, farmers are concerned with the bureaucratic burden associated with the application process. Nevertheless, most indicated they plan to participate in eco-schemes, but the payments, not ecology, are the main driving factor in their decision.

Bujdei-Tebeica (2024) conducts a comparative analysis of the European farmers' protests during 2023-2024. The research focuses on the relationship between anti-environmental movements and Euroscepticism. They conclude that anti-environmental attitudes do not necessarily imply Euroscepticism, although they co-exist within all investigated cases. Therefore, this author suggests that while addressing environmental goals, policymakers should better consider European farmers' socio-economic realities.

3. Research Methodology

Data from two surveys are used in the present study. The first one was carried out in 2012 as a part of a project supported by the fund „Scientific Research“ contract ДО 02-339/22.12.2008. The survey was conducted face-to-face and included 890 farms. The second one was carried out in 2024 as a part of a project also supported by the Fund „Scientific Research“, contract КП-06-Н35/2/18.12. 2019. This survey was conducted using the Google platform and includes 846 farms.

Both surveys are representative and were carried out in collaboration with the Agrostistics department at the Bulgarian Ministry of Agriculture. The specialists from the statistical department determined the number of farms that needed to be included in the samples. The questionnaires were developed by the scientists involved.

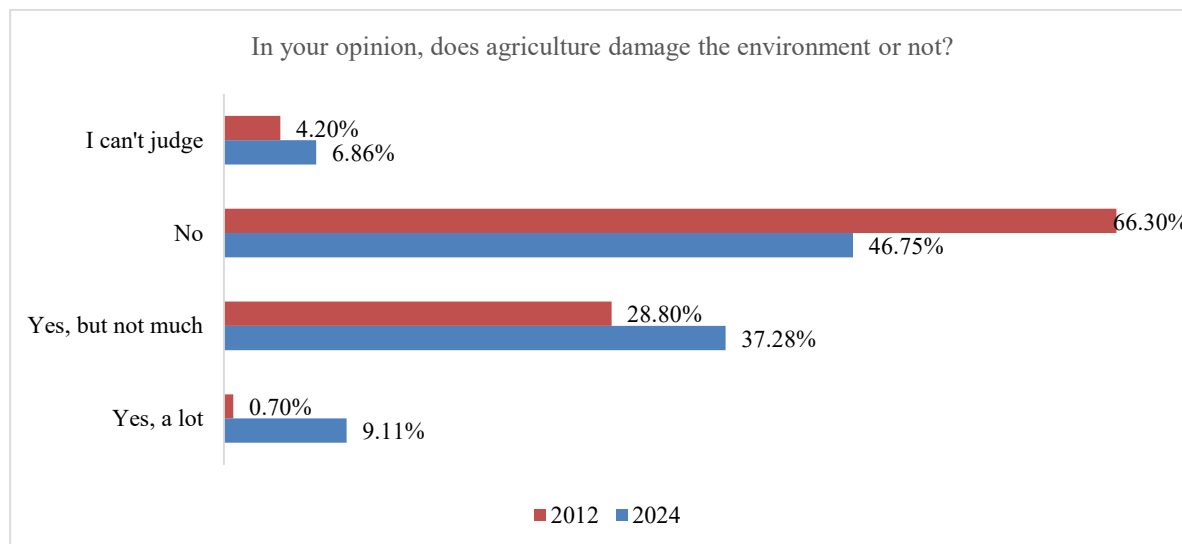
4. Results of the Study

There are several prerequisites for any policy to be successful. First, the actors should understand the challenges that this policy attempts to address. Second, the proposed actions should not contradict the actors' beliefs. Third, the actors should have the opportunities and capacity to face the various impediments during the implementation of policy instruments and to propose solutions.

Several questions were included in the survey to investigate the farmers' perceptions and beliefs about the effects of the current farming practices on the environment. These questions

concerned the extent to which farmers considered the natural components when deciding their crops. The overall farmer's perceptions reveal the following results (Figure 1). In 2012, 95% of the farmers thought agriculture did not hurt or hurt but not much the environment. In 2024, this percentage declines to 84%. Therefore, a change in farmers' understanding has begun. We observe a decrease in the percentage of farmers who think agriculture does not affect the environment.

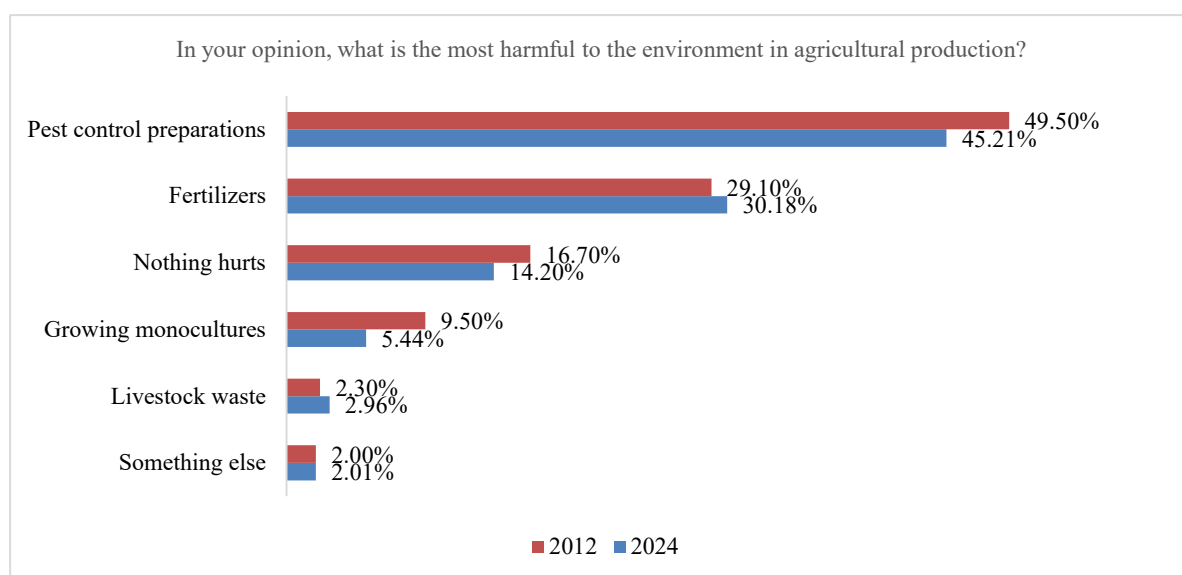
Figure 1. Overall farmers' perceptions of the impact of agriculture on the environment



Source: Own presentation with data from the surveys conducted in 2012, 2024.

The farmer's perception of the most damaging practices they apply seems comparatively stable (Figure 2). Farmers identify using pesticides, chemical fertilisers, and growing monoculture as the most harmful practices in both periods. These results show that farmers can recognise the danger related to their cultivation practices. In addition, the percentage of the ones that think the used practices do not hurt the environment declines. However, it is still comparatively high: 17% in 2012 and 14% in 2022.

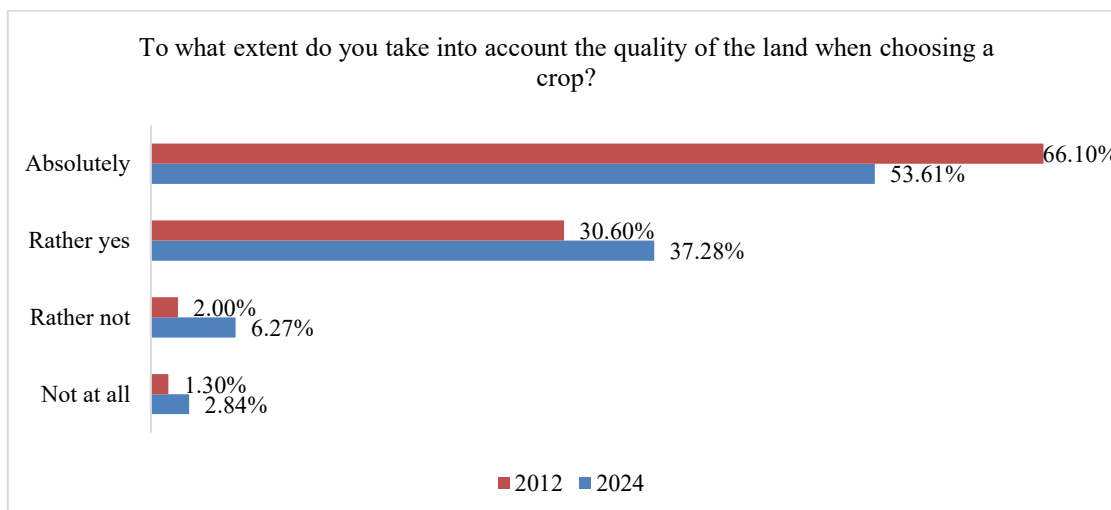
Figure 2. Most harmful agricultural practices



Source: Own presentation with data from the surveys conducted in 2012, 2024.

Most of the interviewed farmers consider the land quality when choosing a crop (Figure 3). The figures for the choice of technology and crop rotation are similar to those for the crop choice. The tendency is that the percentage of the ones that consider these three factors „absolutely“ declines, but the percentage of the ones that answered „rather yes“ increases in 2024 compared to 2012. Still, more than 90% in both periods consider the land quality when choosing what to grow and how to grow it. Although the percentage of the ones that answered with „rather not“ and „not at all“ is small, there is a slight increase in both answers in 2012 compared to 2024.

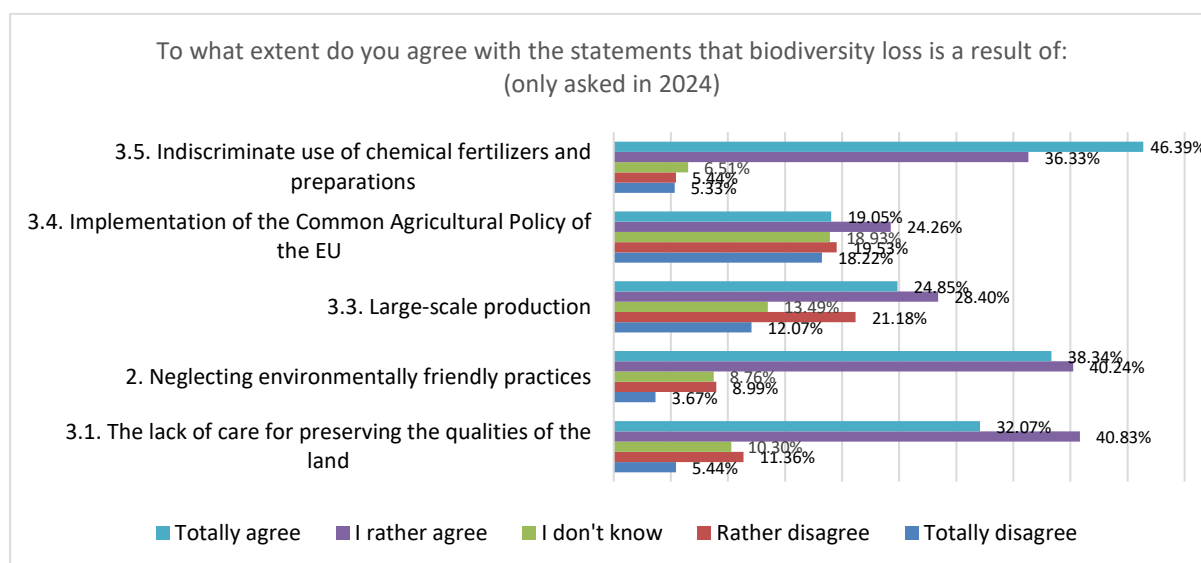
Figure 3. Choice of crop to cultivate



Source: Own presentation with data from the surveys conducted in 2012, 2024.

Most farmers think that the main reasons for the loss of biodiversity are (Figure 4): (1) indiscriminate use of chemical fertilisers, pesticides and herbicides; (2) neglecting environmentally friendly practices; (3) insufficient care for preserving the land quality. More than 70% answered „agree“ or „rather agree“ to these questions. Slightly more than 50% think large-scale production contributes to biodiversity loss. Regarding the role of the CAP, the results are not as clear; 43% totally agree or rather agree. However, 57% do not know, rather disagree or totally disagree.

Figure 4. Factors for biodiversity loss

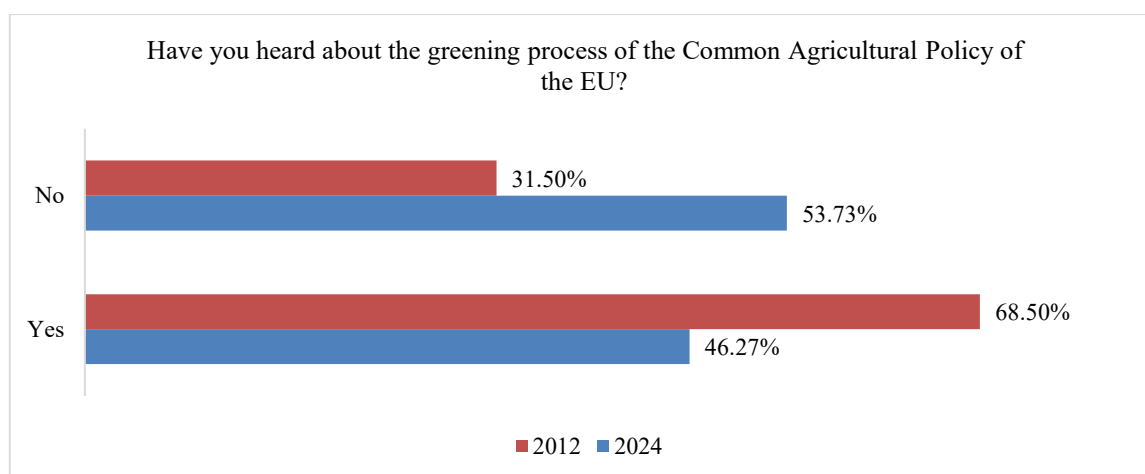


Source: Own presentation with data from the survey conducted in 2024.

Several questions were included in the survey to investigate the challenges farmers face during the implementation process. These questions concerned farmers' understanding of the EU green policy, access to information, and their vision about the impediments and solutions.

In 2012, 32% of intervened farmers answered that they had not heard about the greening process of the Common Agricultural Policy, while in 2024, their share increased to 54% (Figure 5). This result is surprising since one can expect that, in 2024, the farmers will be better informed on this issue. Although this result is difficult to interpret, one possible explanation could be the COVID-19 epidemic that affected many people's lives, including farmers. The death rate in Bulgaria was high, and people were more likely to concentrate on their everyday problems. In addition, all public meetings, including information campaigns, were cancelled.

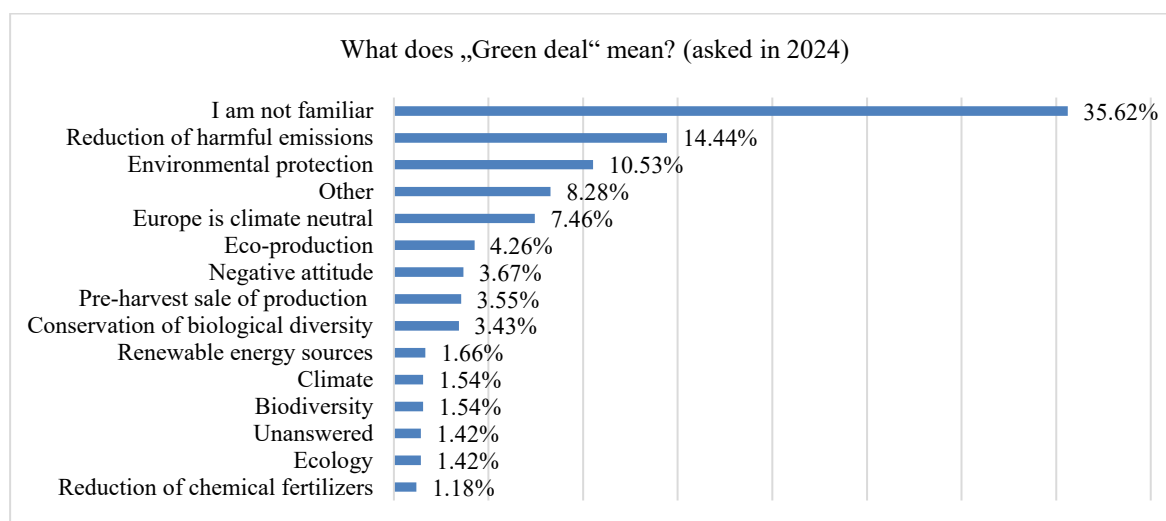
Figure 5. Greening process of the CAP for farmers



Source: Own presentation with data from the surveys conducted in 2012, 2024.

In 2024, 36 % of the interviewed farmers stated that they were not familiar with the Green Deal strategy of EC (Figure 6). The rest highlighted various Green Deal elements, but only a few recognised it as a strategy. The most common farmers associate the Green Deal with reducing harmful emissions – 14%, environmental protection – 11%, and Europe climate neutrality – 7%. Only 5% refer to the preservation of biodiversity.

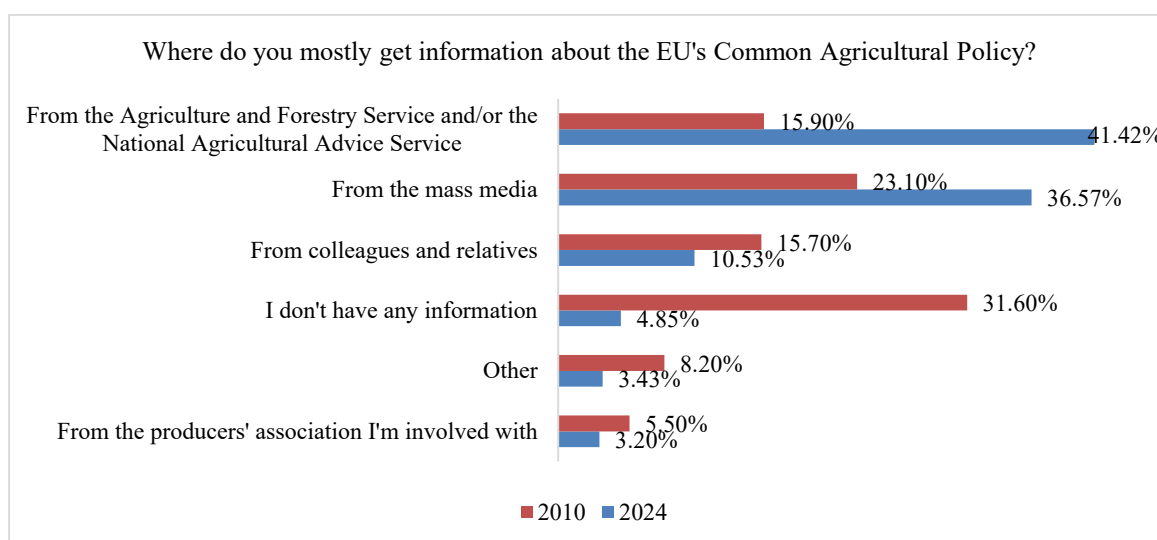
Figure 6. The meaning of Green Deal for farmers



Source: Own presentation with data from the survey conducted in 2024.

In 2012, 31% of the farmers stated that they did not have information about CAP (Figure 7). During that period, the essential sources of information were mass media 23%, colleagues and friends 16%, and the Regional Agricultural offices 16%. In 2024, only 5 % stated that they do not have information. The essential sources of information were the Regional Agricultural offices 41%, followed by mass media – 37%. The role of colleagues and friends as an information source declined to 11%. It is evident from the survey results that more farmers have access to information in 2024 compared to 2012, and the role of official sources increased significantly. In the 2024 survey, farmers were also asked about where they wanted to receive information from. The results are similar to those, reported by local Agricultural ministry offices and mass media offices. Therefore, the farmers' wishes and the information channels in place coincide.

Figure 7. Information sources about the CAP



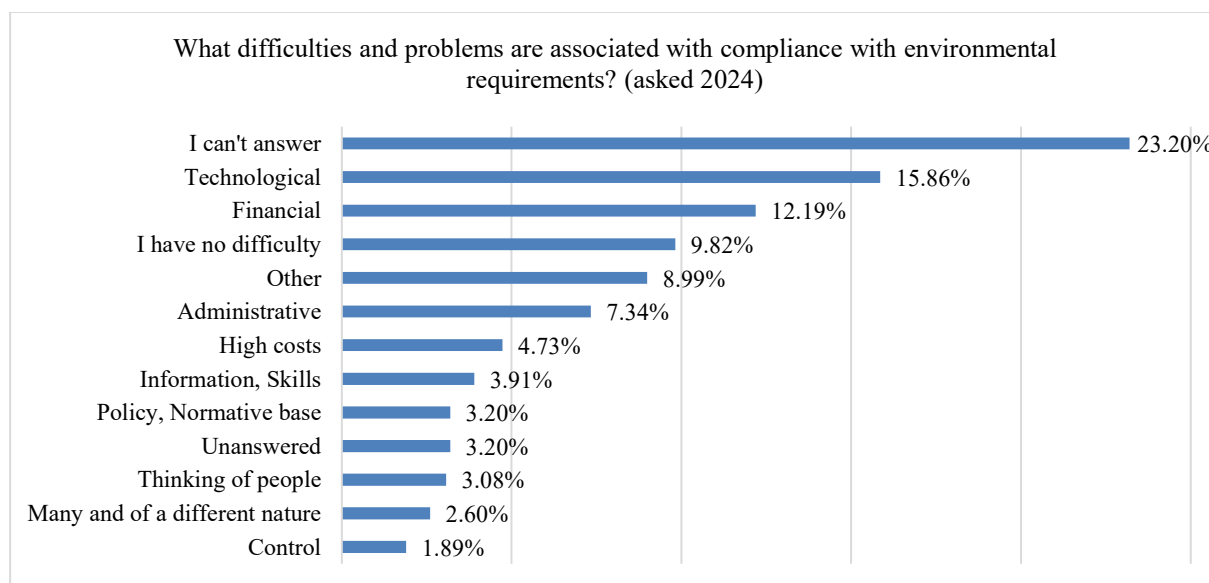
Source: Own presentation with data from the surveys conducted in 2012, 2024.

Often, along with the National Agricultural Advisory Services local offices, farmers also identify the regional offices of the Ministry of Agriculture and the local offices of Fund Agriculture as sources of information. The last two are not administrative structures for providing advice and information. However, farmers recognise their essential role in this process.

It may seem surprising that the information channels work better in 2024 compared to 2012, but the farmers seemed less informed about CAP's Green Deal and greening process. This result could be interpreted as farmers getting information about the measures/interventions they apply rather than the policy framework.

In 2024, 16% of the respondents face technological and 12% financial difficulties in complying with environmental requirements (Figure 8). Ten present stated that they do not have problems. These farmers have started implementing various ecological practices before the current planning period. Seven per cent of farmers said they consider the administrative burden a problem. However, 23% were not able to answer. Among the most criticised by the farmers are the requirements for maintaining minimum soil cover, crop rotation, and reduced use of chemical pesticides.

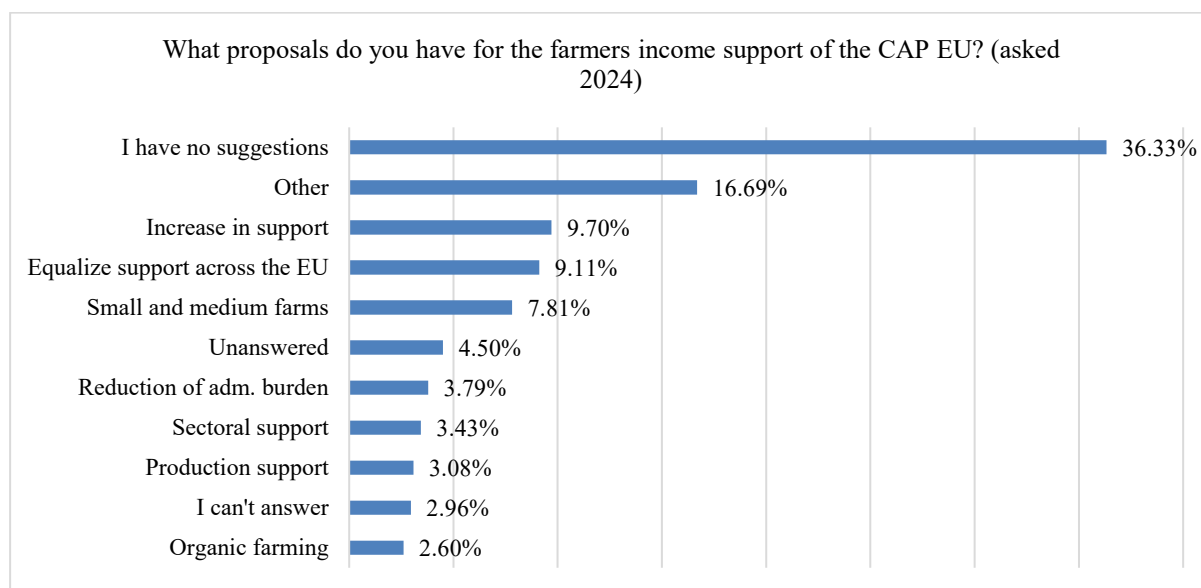
Figure 8. Impediments for compliance with environmental requirements



Source: Own presentation with data from the survey conducted in 2024.

Most respondents do not have suggestions about improving the CAP farmers' income support – 36% (Figure 9). Among the proposals with a comparatively higher frequency of answers are to increase support for agriculture – 10%, equalise support across Europe 9%; and support more small and medium-sized farms – 8%. Only 3% call for support of organic farmers.

Figure 9. Proposal for farmers' income support



Source: Own presentation with data from the survey conducted in 2024.

5. Conclusions

The results of our study are broadly consistent with the findings of previous studies, but we can contribute to further understanding of the problem in the case of Bulgaria. First, Bulgarian farmers have a good knowledge of the adverse effects of agricultural practices on the environment. They know that using chemical fertilisers and pest control hurts the environment

and contributes to biodiversity loss. Yet, most do not consider that agriculture has a strong damaging effect on the environment. However, the percentage of those who think agriculture does not damage the environment declined. This shows a process of reevaluation has begun. Second, farmers believe that preserving the natural components is essential. Most always consider land quality when choosing crops, technology, and crop rotation. Farmers know little about the Green Deal strategy. Yet, they identify the most critical elements of this policy, such as Europe becoming climate-neutral, reducing harmful emissions, environmental protection, etc. Third, the information channels in the country are already in place, and there is a clear tendency for the percentage of the ones that do not have information to decline. The role of the official information channels, such as the Regional Agricultural Offices, has increased.

In addition, there is a well-developed website of the Bulgarian Strategic Plan (2023-2027) (Ministry of Agriculture). This website provides information about all interventions and the ones that are open for application. Also, a 24-hour TV channel offers news and information to agricultural producers (Agro TV). The existence of the above sources can explain why a large share of the farmers point to mass media and the internet as an essential informational channel. Yet farmers not only in Bulgaria protest but are also not happy with the new greening process of the EU.

There could be several explanations for the situation. First, the policy settings and the formal legislation could be in place, but the actors may need time to adjust to the new situation. Second, insufficient communication may exist among the participants involved in the process. Third, the system of interventions seems too complex (92 interventions in 2023, compared to around 30 in 2007). Such a system could be complicated for administration to manage and difficult for farmers to understand. Fourth, the technologies for meeting the environmental requirements may still be unavailable to farmers. For example, planting nitrogen-fixing crops can reduce the use of nitrogen fertilisers, but this could be a significant change in production technology that requires time and substantial investments in new machinery and irrigation equipment. Policymakers should not see the protests as farmers' disagreement with the Green Deal Strategy but rather as an expression of the uncertainty they expect to face in transitioning from „chemical“ to greener agriculture. However, the protests should not be underestimated because they can cause strong Euroscepticism.

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CHALLENGES TO THE AGRICULTURAL SECTOR IN THE CONDITIONS OF AN INTEGRATED EUROPEAN POLICY

Abstract: *The European agricultural model aims to create sustainable agricultural practices to ensure the overall market orientation of agriculture and to enable farmers to benefit from the skills of the market to provide products demanded by consumers. From these achievements challenges facing agriculture in Europe (including Bulgaria) continuously require reform of the Common Agricultural Policy in terms of its alignment with high public demand for healthy foods, preservation of rural areas, ensuring produce higher quality products and maintaining farmers' incomes. The aim of the present study is to examine the need for full use of data in the agricultural sector. The modern European agricultural policy implemented contributes to compliance with environmental, climatic, social and other aspects of production. Technological advances assist farmers in their decision-making. Standardized and disaggregated data will facilitate its use at the farm level. The importance of digitization for the agricultural sector, respectively for the economy, is brought out. The removal of obstacles to the exchange of data sets will allow their full use in response to the needs of the implemented policy.*

Keywords: *European Union; Common Agricultural Policy; reform; challenges; Bulgarian agricultural sector*

JEL: *Q18; Q13*

1. Introduction

The extraction, provision and use of the data are a prerequisite for the policy being developed in the agrarian sector. Large arrays of information allow an impact on agricultural production.

Documents have been developed to support the potential of large data sets at the European level. They support the responsible persons and institutions for the development and making of political decisions.

(DataStrategy@EC) is presented as a basic tool for the practical implementation of the European Commission's aspiration for the full use of data, incl. in the agricultural sector.

2. Problem Status

One-third of the European Union's budget is allocated to the implementation of the Common Agricultural Policy. For the period 2014-2020, the costs of integrated policy amount to 408 billion euros. The development, monitoring and evaluation of the Common Agricultural Policy of the European Union requires optimal use of information data sets. Decision-making at the European level requires an objective analysis of the implemented policy.

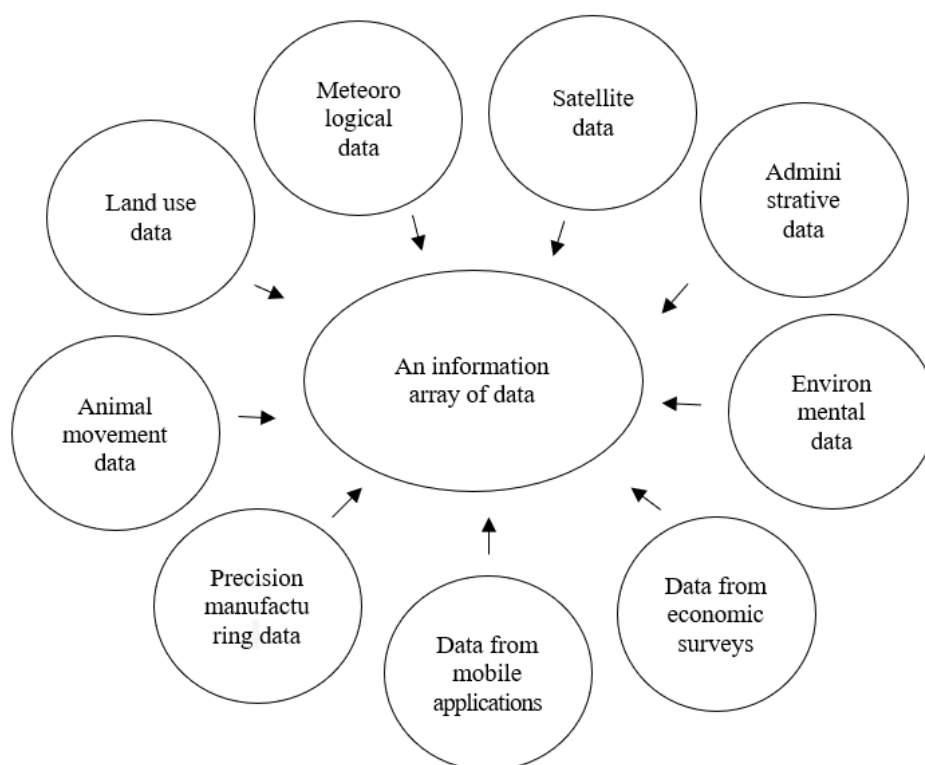
The challenges facing the agricultural sector require the collection of various data from and about agricultural holdings (Figure 1).

At the European level, the Commission has a large volume of data on the Common Agricultural Policy of the European Union.

A shortcoming of the data collected is that there is a lack of detail on applied environmental practices and income from off-farm activities.

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Figure 1. Data set relevant to the Common Agricultural Policy of the European Union



Source: Developed by the author from data published by the European Court of Auditors.

3. Methodology / Methodological Approaches

Digital innovations and technologies used in agriculture are personalizing and refining agricultural operations.

Data and technology transfer is transforming the agricultural sector. Successful applications include: Internet of Things, sensors, data analysis (e.g. based on artificial intelligence) and decision support systems.

Technological advances in the sector help decision-making (Figure 2).

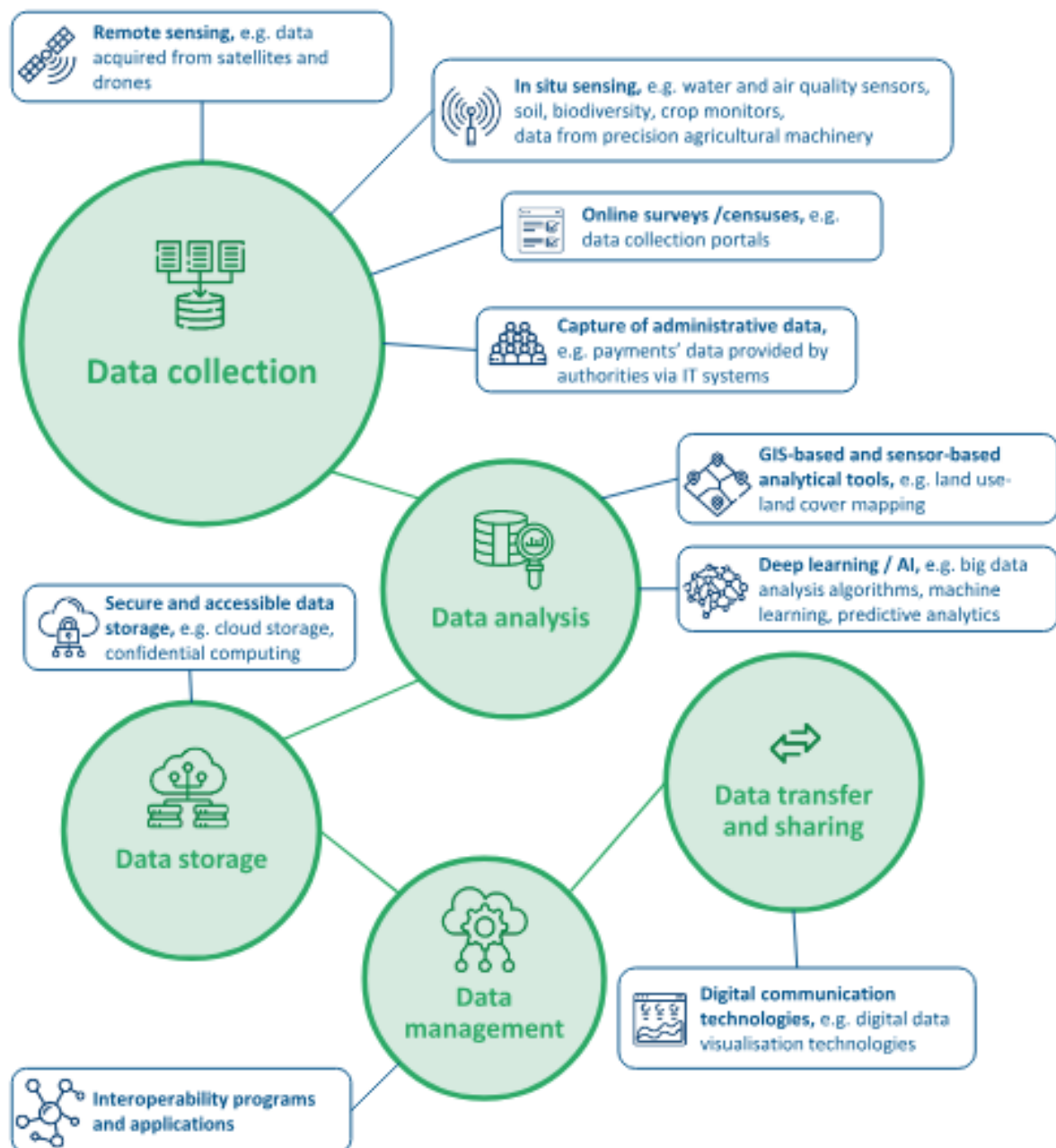
The methodology for the identification of an information array of data allows the identification of the following stages:

- *First stage.* Data collection – quantitative accumulation of information from observations, surveys, censuses, etc.
- *Second stage.* Data analysis – qualitative processing of information based on modern algorithms for data analysis.
- *Third stage.* Data storage in a secure and accessible manner.
- *Fourth stage.* Data management when sharing operational information.
- *Fifth stage.* Data transfer and sharing in technological communication and digital data visualization.

When implementing the policy, the information array enables (European Court of Auditors, 2022):

- development of differentiated and purposeful policies;
- implementation of new monitoring systems and others.

Figure 2. Digital technologies in agriculture



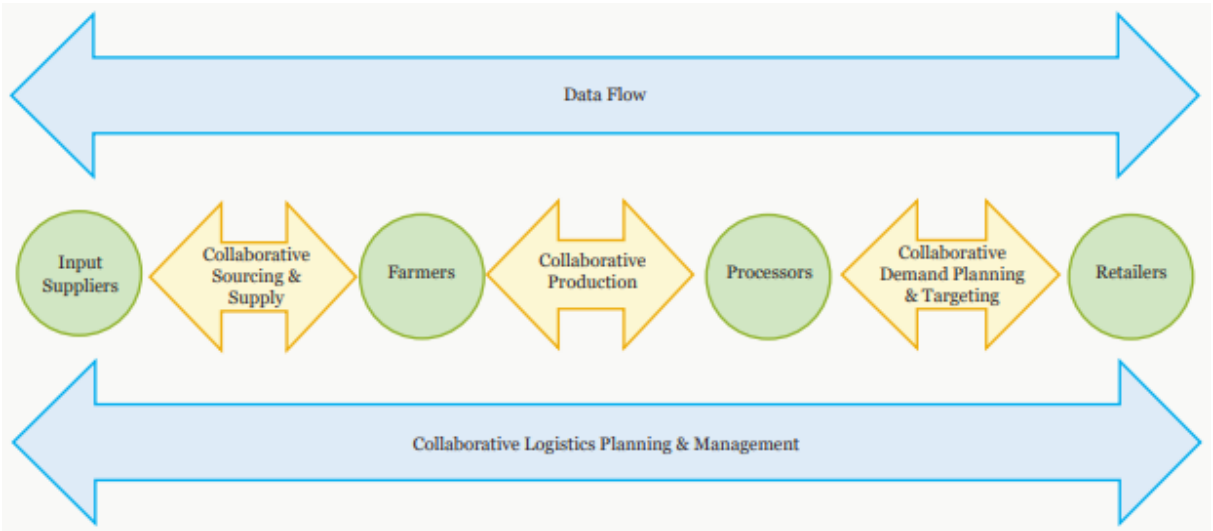
Source: European Court of Auditors. *Data in the Common Agricultural Policy. Unrealised potential of big data for policy evaluations. Special Report 16., 2022, p. 9.*

4. Research Results

The increased use of digital applications in agriculture leads to the concentration of large amounts of information. Collected data on land, crops, livestock, agronomic data, climate data, machine data, financial data and others are economically essential. The above justifies the importance of digitization in the agricultural sector (Petrova, 2023).

At the European level, an EU Code of Conduct has been adopted for data exchange in the agricultural sector (COPA&COGECA, 2020). It comes into force from 2025. It sets out the guidelines for the use of agricultural data and the rights of access to it (Figure 3).

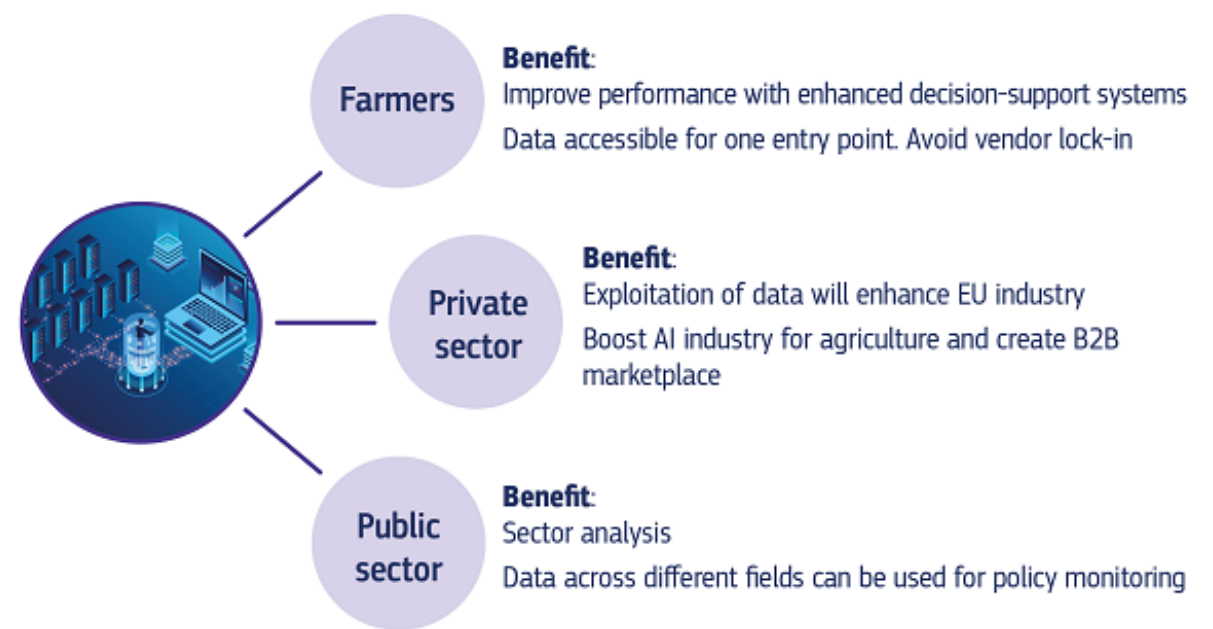
Figure 3. Participants in the data flow



Source: COPA & COGECA, EU Code of conduct on agricultural data sharing by contractual agreement, Manual, 2020, p. 6.

Users of big data are economic entities from the public and private sectors, and agricultural producers involved in the value creation chain – producers, suppliers, processors, traders and consumers (European Commission, 2024) (Figure 4).

Figure 4. The common European agricultural data space



Источник: AgrifoodTEF (European Commission, 2024).

In order not to abuse the personal data of agricultural holdings from the introduction of intelligent agriculture, guarantees for the exchange of data, their storage and security are necessary.

5. Inferences

It is an indisputable fact that the future development of the agricultural sector depends on scientific research and innovation. The digital transformation of the sector requires funding to develop and implement technologies such as artificial intelligence, the Internet of Things, robotics and digital platforms that will create the conditions for the sustainability and efficiency of the food system.

The benefits of the application of digital technologies in agriculture generally boil down to:

- optimization of production processes, resp. productivity;
- tracking the health status of the animals;
- automation and optimization of working conditions in agricultural holdings;
- tracking agricultural products in the value chain.

To introduce digital technologies in the agricultural sector, efforts are needed to:

- accessible presentation of the benefits of digitization for farmers;
- avoiding the digital divide between farmers;
- cost justification of introducing digital technologies in farms, especially for small farmers;
- interoperability of systems and applications.

Based on the conducted research, it can be summarized that to popularize and support digitization, targeted actions by the state are needed in the following aspects:

In *a normative aspect*, the state needs to create a normative-legislative foundation for affordable and real digitization of the agricultural sector. The state is the guarantor of the secure storage of the data.

In *a theoretical aspect*, actions are needed to develop and provide agricultural producers with manuals for digital technologies in farms, with the introduction of a conceptual apparatus and real examples for the agrarian sector, with a specific application of the technology in relation to the specifics of the activity – for example, a drone, sensor, etc.

In *a practical aspect* – conducting comprehensible training for agricultural producers, participation in explanatory campaigns and in real demonstrations of farms that have implemented digital technologies in their activities. It is expedient to develop a platform that concentrates the volume of information and guides farmers.

From *an economic aspect*, providing resources and incentives for the adoption of new technologies, with justification for the real benefits for agricultural producers.

It is expedient to develop indicators for measuring achievements in the field of digitization in the agricultural sector. Data (results) to be up-to-date and publicly available to farmers, processors, researchers and others

In conclusion, successful digital transformation will be possible after the unification of information arrays and data accessibility in the conditions of communication between all economic agents, including farmers, suppliers and others.

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КОНВЕРГЕНЦИЯ И КОХЕЗИЯ НА АГРАРНАТА ПОЛИТИКА НА РЕПУБЛИКА БЪЛГАРИЯ В ЕВРОПЕЙСКИЯ СЪЮЗ

CONVERGENCE AND COHESION OF THE AGRARIAN POLICY OF THE REPUBLIC OF BULGARIA IN THE EUROPEAN UNION

Резюме: Статията си поставя за цел да посочи изходните икономически и структурни позиции в аграрния сектор на Република България преди пълноправното членство на страната в Европейския съюз; да проследи развитието на процесите в рамката на Общата селскостопанска политика; да направи сравнение спрямо другите страни членки (стари и нови); да очертае степента на конвергенция и кохезия спрямо аграрния сектор на другите страни от Европейския съюз; да предложи набор от политики за по-активна конвергенция и кохезия на българския аграрен сектор. Наличната информация позволи тези цели да бъдат постигнати.

Ключови думи: обща селскостопанска политика; аграрна политика; селско стопанство на България; конвергенция и кохезия в аграрната област

Abstract: The purpose of this paper is to outline the initial economic and structural positions in the agrarian sector of the Republic of Bulgaria before the country's full membership in the European Union; to follow the development of the processes in the framework of the Common Agricultural Policy; to make a comparison with other member states (old and new); to highlight the degree of convergence and cohesion against the agricultural sector of other EU countries; and to propose a set of policies for active convergence and cohesion of the Bulgarian agricultural sector. The available information allowed for achieving these targets.

Keywords: CAP; agricultural public policy; Bulgarian agriculture; agricultural convergence and cohesion

JEL: E65; Q09; Q10; Q18; Q19

1. Увод

Опитът за оценка на конвергенцията на аграрната политика на Република България спрямо останалите страни от Европейския съюз, както и постигнатата кохезия от момента на пълноправното ни членство в ЕС до днес, е истинско предизвикателство. Става въпрос не толкова за статистическо сравнение на икономически показатели, колкото до констатации за състоянието на такива сложни и спадащи към няколко сектора от икономиката отрасли като земеделие, производство и търговия с храни, и сравняването им в динамика с постиженията в останалите страни от Съюза.

Като начало трябва да се подчертае сложността и взаимозависимостта на разглежданите отрасли:

- земеделието е основна част от първичния сектор на всяка икономика;
- производството на храни е важна част от вторичния сектор (промишлената преработка на земеделския продукт);
- търговията, като най-важна (заедно с транспорта и логистиката) част от третичния сектор на практика осигурява достъпа на човека до храната, доставяйки я до трапезата.

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2. Необходимост от конвергенция и кохезия в аграрната област на България

В аграрния сектор на Република България протичат парадоксални икономически процеси, които не са характерни за страните от Европейския съюз, както и за страните членки от Източна и Централна Европа със сходна историческа съдба. България се отличава дори още повече от страните от Средиземноморската агроекологична зона, към която тя принадлежи в географски план.

Тези процеси и явления могат да се представят в най-обобщен вид по следния начин:

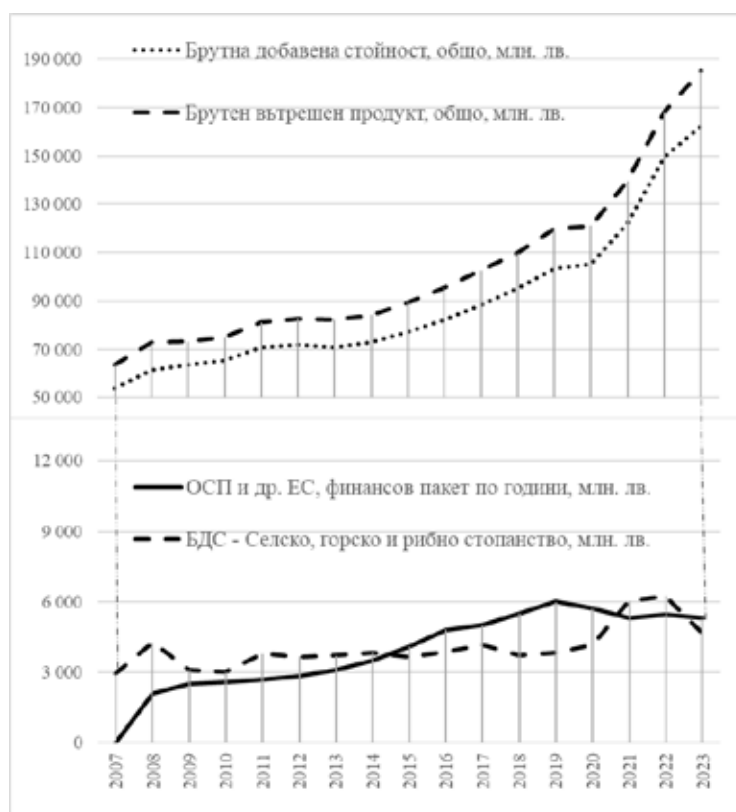
Първо. Висок дял на силно уедрени стопанства. Стопанствата с размери над 100 хектара заемат 78% от използваните земеделски площи в България, като средният размер за тази категория стопанства е 624 хектара. В ЕС средният размер за стопанства над 100 хектара е 250 хектара.

Второ. Развитие на монокултурно земеделие. Към 2023 г. няколко юридически свързани лица, регистрирани в Държавен фонд „Земеделие“, стопанисват 49 466 хектара площи със зърнени култури, което им позволява да усвояват огромни по размер субсидии.

Трето. Спад в производството на традиционни продукти. В периода 2007-2023 г. в страната са произвеждани средногодишно едва 7% от ябълките, 22% от доматиите, 33% от месото и 44% от млякото, които консумира българинът.

Четвърто. До 2007 г. беше усвоен огромен по размер финансов ресурс под формата на проекти за около 6 млрд. лв. в аграрната сфера по линия на предприсъединителните фондове на ЕС. След 2007 г. и приемането на страната в ЕС средногодишно по линия на Общата селскостопанска политика (ОСП) се усвояват около 4 млрд. лв. (Фигура 1).

Фигура 1. Национални показатели за Брутна добавена стойност, Брутен вътрешен продукт, и селско, горско и рибно стопанство, общ финансов пакет на ОСП за България по години от 2007 до 2023 г.



Източник: Годишни доклади за състоянието и развитието на земеделието от 2007 г. до 2023 г.

Пето. Нивото на brutната добавена стойност по цени на производител през целия период на пълноправно членство показва ясна тенденция на регрес, а потреблението на основен капитал нараства.

Шесто. През целия този период на промени и преход се наблюдава ясна тенденция на инвазия на мултинационални търговски вериги и прекъсване на достъпа на първичния производител до маркетинговите канали за реализация в страната и за износ.

Всичко това очертава няколко трайни тенденции за последните 20 години:

- концентрация на земя и капитал;
- прекъсната връзка между земеделски производители и потребители;
- западащо животновъдство, овощарство и зеленчукопроизводство;
- производство на продукция с ниско ниво на добавена стойност, основно зърно и други хранителни суровини;
- почти преустановено производство на традиционни български храни;
- липса на интегриране на земеделското производство и производството на храни с търговията и логистиката, и особено с туризма като приоритетен отрасъл.

3. Методически подходи за изследване на кохезията и конвергенцията в аграрната сфера

Основните методически подходи, използвани в настоящата публикация, са разработени от Обсерваторията за формиране на цените и маржовете на хранителните стоки на Франция². Тук приносът на автора е в адаптирането ѝ за българските условия след провеждане на необходимите емпирични изследвания³.

Целта на метода е да обясни нивото и вариациите на цените на хранителните продукти чрез измерване на добавената стойност на всеки етап от тяхното производство: от селскостопанско производство и промишлена преработка до потребителите чрез продажба на дребно. Това се осъществява посредством:

- разбивка на цените на дребно в brutни маржове;
- анализ на операторски сметки за нетни маржове;
- анализ на сметките на националната добавена стойност, генерирана от всяка част по хранителната верига.

Например, за килограм хляб от определен тип, цената за потребителя се формира от: производствената цена на необходимото зърно, цената за производството на брашно в мелничарската промишленост, цената на производството в пекарната, която произвежда хляба, и цената на доставката на хляба до магазина на дребно. Целта на тези пресмятания е да получим индикатор за brutен марж, тъй като brutният марж не се изчислява по

² Обсерваторията за формиране на цените и маржовете на хранителните стоки (de l'Observatoire de la formation des prix et des marges des produits alimentaires) е мрежови орган на френските министерства на земеделието, финансите и икономиката, земеделските браншови съюзи, земеделската камера. Създадена е със Закон № 2010-874 от 27 юли 2010 г. за модернизацията на селското стопанство. Обсерваторията се ръководи от Филип Шалмин, професор по икономическа история, специалист по пазарите на суровини в Университета Париж-Дофин. Резултатите и методиката са общодостъпни: <https://observatoire-prixmarges.franceagrimer.fr/>.

³ Изследванията на терен са осъществени в периода от 2019 до 09.2024 г. от доброволци от структурите на Централния кооперативен съюз.

счетоводен начин, а е „симулиран“ въз основа на референтни данни за средна цена и доходност.

Най-общо казано, цената на килограм готов продукт се формира от цената на суровините, преминаващи през няколко етапа на обработка, както и разходите по дистрибуцията (междувирмена търговия) и продажбата на дребно. Цената на суровините за кг готов продукт $P = (R_1 \times R_2 \times R_3 \times \dots R_1, \dots R_n)$ към съотношенията на всеки етап между произведените количества и използваните количества.

Обект на изследване са данните за потребителската кошница от храни средно годишно в България и Франция по групи храни на един член от домакинството. Новото в подхода на френските изследователи от „Обсерваторията за формиране на цените и маржовете на хранителните стоки“ е, че се тръгва от крайния продукт на пазара за реализация и той се разделя на дялове за: първичен сектор – фермери; вторичен сектор – преработка до краен продукт; третичен сектор – логистика, транспорт, търговия; вносни храни; данъци и такси. Потребителската кошница във френския пример се редуцира до 100 евро, а в българския – до 100 лева при запазване на същите компоненти (Таблица 1).

Таблица 1. Структура на потребителската кошница на един член на домакинството във Франция и България по групи продукти (%)

Групи продукти	Франция	България
Месо, месни продукти	31	25
Риба, аквакултури	12	8
Хляб, хлебни изделия и нишестени храни	9	19
Мляко, сирене и яйца	20	15
Зеленчуци, плодове, пресни и преработени	10	17
Захар, конфитюри и сладкарски изделия	7	7
Масла и мазнини	6	4
Други	5	5

Източник: НСИ-Евростат (експресна информация) и Обсерватория за формиране на цените и маржовете на хранителните стоки на Франция.

Това дава възможност да получим разрез по икономически сектори и да търсим варианти за справедлива цена както за всички икономически агенти по секторната верига, така и за потребителите, т.е. да определим рационалните параметри на националната аграрна и продоволствена политика в рамките на ОСП.

Нивата на анализа включват конвергенцията и кохезията на българската аграрна политика спрямо:

- Средните стойности за ЕС;
- Средните стойности за новите страни членки;
- Средните стойности за страните членки от Средиземноморския район (разчитащи на „средиземноморската диета“ като организация на производството и потреблението на храни).

4. Резултати от изследването

Стартовата позиция на българската аграрна и продоволствена сфера в условията на ОСП е след труден и в крайна сметка ниско ефективен преход на продоволствената сфера.

Сравнението на крайните резултати между България и страните със сходна историческа съдба⁴ е красноречиво. Преходът е повече от неуспешен, а по отношение на повечето отрасли на земеделието и хранителната промишленост е катастрофален. Данните и подходите в аграрните преобразования в България и в страните със сходна историческа съдба тук са изложени в табличен вид поради липса на пространство за по-подробен анализ.

Таблица 2. Поземлена и структурни реформи

Показатели/състояние	Република България	Бивши социалистически страни, членки на ЕС
Физическа реституция в реални граници и размер	Да, 85% от земята	Румъния, около 15%
Компенсация на бивши земеделски собственици	Да, около 15% от земите със специализирани финансови купюри	Да, от 80 до 100%
Юридическа ликвидация на кооперации и държавни стопанства	Да, чрез Ликвидационни съвети, тръжна разпродажба на имущество	В повечето страни, чрез вливане или промяна на юридическата форма ⁵
Структурно състояние по видове земеделски култури (%): • зърнени култури, маслодайни семена, протеинови култури и ориз; • плодове и зеленчуци; • лозя; • други	80 5 7 8	60 20 10 10
Среден размер на земеползване на парцел, хектар	90	50
Среден размер на юридическа единица	624	55

Източник: БАНСИК 2023, Евростат.

Таблица 3. Показатели за състоянието на аграрната и продоволствената сфера средно за страните от ЕС, бившите соц. страни, страните от ЕС в Средиземноморската зона и България

Показател	Средно за ЕС ⁶	Средно за новите страни членки ⁷	Средно за страните членки от Средиземноморския район ⁸	Република България
Стопанства, участващи в кооперации, сдружения за общ маркетинг или други производствени дейности (%)	65	45	47	5
Дял на групи и организации на производители в произведената продукция, средно за всички браншове (%) ⁹	30	23	35	0.1

Източник: Евростат, НСИ, Обсерватория за формиране на цените и маржовете на хранителните стоки.

⁴ Естония, Латвия, Литва, Полша, Словакия, Словения, Унгария, Чехия, Румъния, Хърватия.

⁵ При тръжна разпродажба на активи, в повечето страни тя се прави като цял обект, например обор, продуктивни животни, фуражна кухня и всичко, свързано с експлоатация на актива.

⁶ Като се отчита приемането на нови страни в Съюза и Брекзит през 2020 г.

⁷ Страните със сходна на нас историческа съдба – Естония, Латвия, Литва, Полша, Словакия, Словения, Унгария, Чехия, Румъния, Хърватия.

⁸ България, Кипър, Франция, Гърция, Италия, Малта, Португалия, Румъния, Словения, Хърватия, Испания („Средиземноморската диета“ като организация на производството и потреблението на храни).

⁹ Данните са за Мярка 142 „Създаване на организации на производители от ПРСР 2007-2013“ и по мярка 9 „Учредяване на групи и организации на производители“ 2014-2020, преизчислени от автора.

Широко използвана практика на ОСП е земеделските производители да провеждат колективни действия за постигане на общи интереси чрез организациите на производители (ОП). Това сътрудничество варира от планиране на производството до общ маркетинг на пазара. ОСП активно насърчава организациите сред земеделските производители и разглежда колективните действия като важен инструмент за самопомощ за укрепване на позициите на фермерите във веригата за производство и доставка на храни. ОП могат да се възползват от определени дерогации от правилата на ЕС за конкуренцията. За съжаление, у нас този инструмент на ОСП на практика не е използван активно: към края на 2023 г. общият брой на признатите организации и групи на производители на земеделски продукти е 40.

Резултатът от прилагането на методиката на френската „Обсерватория“ е на пръв поглед близък до този в България. Първичния сектор – фермерите, получават във Франция 14 евро от похарчените 100 в търговските вериги, а у нас – 10 лв. от похарчени 100. Но тук има особеност: във Франция над 35% от фермерите са и част от вторичния сектор – преработката на продукцията, а около 40% сами реализират продукцията си чрез пазар или кооперация. Примерно те произвеждат зърно, от което изготвят фураж, произвеждат мляко, а от него произвеждат сирене в собствена или кооперативна мандра. У нас подобна система съществува, но е ограничена като разпространение.

Фигура 2. Редуцирана потребителска продоволствена кошница за член на домакинството във Франция и България за 100 евро и 100 лв.



Източник: НСИ и Обсерватория за формиране на цените и маржовете на хранителните стоки.

Подобни са изводите и по отношение на биопродукцията: храни със „Защитено наименование за произход“ (ЗНП), „Защитено географско указание“ (ЗГУ), „Храна с традиционно специфичен характер“ (ХТСХ), както и българския знак „Произведено в

планината“¹⁰.

5. Изводи и препоръки

Изследването на аграрната политика и аграрния сектор позволява да се направят следните изводи:

1. В България се проведе изключително тежка и много скъпа аграрна реформа, която в крайна сметка доведе до негативни резултати.
2. Предприсъединителните фондове и средствата по ОСП са огромен финансов ресурс, непознат по размер в историческото развитие на българската аграрна сфера. Ефектът от тези средства засега не намира реципрочно икономическо измерение.
3. Националната аграрна и продоволствена политика не отчита качеството на продукта, а само пазарната реализация.

Направените изводи дават основание за формулиране на следните препоръки:

1. Необходими са реформи, които да възстановят традиционните производства като база за реализация на големия природно-географски потенциал и конкурентните предимства на българското земеделие за постигане на реален икономически растеж.
2. Със стимулиране на производството на храни с висока добавена стойност, т.е. предлагане на скъпи храни, българското земеделие може да бъде конкурентоспособно.
3. Основна задача на националната продоволствена политика трябва да бъде скъсяване на разстоянието между производителя и потребителя, т.е. изграждане на къси вериги за доставка, като преработката и пазарната реализация се осъществяват или пряко от фермера, или от сдружения и кооперации.

Въпросът е много по-дълбок: какъв ще бъде моделът на аграрната политика през следващите десетилетия в България и каква структура ще придобие отрасълът земеделие и производство на храни?

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¹⁰ Към 03.06.2023 г. има регистрирани само 22 производителя (Sabev, 2024).

INNOVATIONS IN AGRICULTURE AS A MEANS FOR SUSTAINABLE DEVELOPMENT OF REGIONS IN BULGARIA

Abstract: This article examines the influence of innovations in agriculture on the sustainable development of regions in Bulgaria. Through the analysis of official data, the innovations and their contribution to the economic and social development of different regions are explored. The included innovations encompass new technologies, digitization, and sustainable agricultural practices, which play a crucial role in enhancing productivity and preserving natural resources.

Keywords: innovations; agriculture; sustainable development; regional policy; Bulgaria

JEL: O3; O13; Q1; R11

1. Introduction

Sustainable development is a priority for both the European Union and Bulgaria. In agriculture, this means achieving a balance between economic efficiency, social responsibility, and environmental protection. Agriculture plays a significant role in the Bulgarian economy, especially in rural areas, where it provides the primary income and employment for a large part of the population.

Over the last decade, there has been a significant increase in interest in innovations in agriculture as a means of increasing productivity and improving the sustainability of production processes. This includes the introduction of precision farming technologies, digitization, and the implementation of sustainable agricultural practices that reduce environmental impact (FAO, 2021).

2. State of the Problem

In the context of Bulgarian agriculture, innovations can be divided into several categories that have a significant impact on the sustainable development of regions. Some of the most important and widely used innovations in agriculture include:

Precision Agriculture

Precision agriculture uses technologies like GPS, sensors, drones, and satellite imagery to monitor fields and optimize resources (fertilization, irrigation, pesticides). This reduces costs, improves efficiency, and minimizes negative environmental effects (Georgieva, 2023).

Regional example: Precision agriculture technologies are actively used in the Plovdiv region, where farmers rely on these innovations for more effective management of large areas.

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Digitization and Automation

This involves the use of specialized farm management software, automated milking systems, robotic machines for soil treatment, and automated irrigation systems.

Regional example: In Northeastern Bulgaria and the Dobrich region, innovations in automated milking systems and milk production control are applied.

Sustainable Practices

This includes practices like no-till farming, agroecology, crop rotation, and the use of biodegradable fertilizers. The goal is to preserve soil health and biodiversity (Blagoev, 2023).

Regional example: In the Rhodope Mountains and other mountainous areas, innovative agroecological approaches are used, helping to preserve the soil and prevent erosion.

New Varieties and Biotechnologies

The introduction of new, more resilient plant varieties and crops that can withstand variable climatic conditions is an essential innovation. Biotechnologies also play a role in the development of genetically improved varieties.

Regional example: In the Northern Central region, new varieties of wheat and corn that are more resilient to drought and unfavourable climatic conditions are being introduced.

Vertical Farming and Hydroponics

These are innovative methods for growing plants in controlled environments, using minimal water and land. These methods are suitable for urban environments or places with limited resources (Georgieva, 2024).

Regional example: In some urban areas of Sofia and Plovdiv, vertical farming systems are being tested, particularly for growing leafy greens and herbs.

Agrivoltaics

The integration of solar panels in agricultural land allows for the simultaneous production of energy and crops. This is especially important for regions with abundant sunny days.

Regional example: In Southern Bulgaria, particularly in areas near Stara Zagora, agrivoltaic systems are actively used (EC, 2020).

3. Methodology

The study uses data from the National Statistical Institute (NSI), the Ministry of Agriculture, and the European Commission. The analysis includes both quantitative and qualitative methods, examining best practices and case studies from different regions of the country. Additionally, a SWOT analysis was performed to assess the implementation of innovations in the regions. A limitation of the study is the lack of comprehensive data for small farms in certain regions, which restricts the analysis.

4. Research Results

Economic Effects

Innovations in agriculture lead to increased productivity and cost reduction. For example, in the Plovdiv region, precision farming increases yields by 20%, while in Dobrich, automated irrigation systems reduce costs by 15%. Organic farming in the Rhodope Mountains opens new export opportunities, increasing farmers' revenues.

Social Effects

Innovations create new jobs in rural areas. The introduction of new technologies promotes employment in organic farming and agrotechnologies. In Northwestern Bulgaria, automated milking systems reduce physical strain by 30%, improving working conditions (Blagoev, 2022).

Precision Agriculture

Precision agriculture has been a leading innovation in Bulgaria over the past decade. The implementation of GPS technologies and soil sensors increases production efficiency in the Plovdiv region and Southern Bulgaria by 40%.

Digitization in Farm Management

More than 25% of medium and large farms in Bulgaria use management software to optimize production cycles and costs. The Pleven and Ruse regions are leaders in the implementation of these technologies (Eurostat, 2023).

Organic Farming

Organic farming is growing rapidly, especially in the Rhodope Mountains and Northwestern Bulgaria. Over the past ten years, this sector has grown by 30%, with agroecological practices contributing to soil conservation and increasing export opportunities (NSI, 2023).

Renewable Energy in Agriculture

Renewable energy sources, particularly solar energy, play a crucial role in modern agriculture, contributing to energy independence and reducing electricity costs. Agrivoltaic systems, which integrate solar panels with agricultural fields, are becoming increasingly popular in Bulgaria, especially in Southern Bulgaria. In this region, the sunny conditions are especially favourable for the development of such technologies.

Farms in the Stara Zagora and Plovdiv regions are already using agrivoltaic systems, allowing for the simultaneous production of electricity and agricultural crops. Studies show that about 5% of large farms in this region use solar panels, with these systems providing significant energy savings and helping to reduce the carbon footprint of production. Combining agricultural activities with energy production allows farmers to increase their energy independence and generate additional income (RDF, 2022).

Another aspect of renewable energy is the use of biomass for energy production. In areas with high concentrations of livestock and crop waste, farmers are starting to install biogas plants that

process organic waste into energy (Palyova, 2023). This not only reduces dependence on traditional fuels but also contributes to the sustainable management of waste.

Despite these positive trends, the implementation of renewable energy sources in agriculture is still limited by a lack of access to financing for smaller farms, as well as the high initial installation costs. European and national programs supporting renewable energy sources, such as subsidies and low-interest loans, could accelerate this process and make these technologies more accessible to a broader range of farmers.

Innovation Trends by Region

The analysis of the implementation of innovations in agriculture by region shows significant differences between the more developed and less developed parts of the country. The South-Central and Southwestern regions are leaders in the use of precision farming, digitization, and automation of production processes. These regions have better infrastructure, access to financing, and a higher concentration of investment in agricultural technologies (Horizon, 2021).

Figure 1. SWOT Analysis of Innovation Implementation in Bulgarian Agriculture



Source: Own survey.

In contrast, the Northwestern region, which is traditionally less developed, lags significantly in innovation adoption. The lack of adequate infrastructure, difficulties accessing financing, and lower investment levels create significant challenges for the modernization of agriculture.

Despite these difficulties, organic farming and sustainable practices are beginning to gain popularity in this region, which could be a foundation for future development.

Specialized programs supporting farmers in the Northwestern and other less developed parts of the country, funded at both national and European levels, have the potential to accelerate innovation adoption in these regions. European funds aimed at rural development, as well as initiatives for sustainable agriculture, can provide the necessary financial resources to improve technologies and promote new agricultural practices (MAF, 2023).

From the perspective of long-term sustainability, regions with stronger innovation development will continue to be the drivers of the agricultural sector in Bulgaria, while less developed regions will need to rely on a combination of financial support, investment, and technology development to catch up with more advanced areas (Kabadzhova, 2022).

Figure 1 presents a SWOT analysis of innovation adoption in Bulgarian agriculture.

5. Conclusions

Innovations in agriculture in Bulgaria are a key factor for the sustainable development of regions, significantly impacting productivity, resource management efficiency, and the competitiveness of agricultural farms. Precision farming, digitization, and sustainable agricultural practices offer modern solutions for adapting to changing climatic conditions and preserving natural resources.

Despite significant progress in some regions, such as the South-Central and Southwestern regions, there is an uneven distribution of innovations by region. Northwestern and Northern Central regions continue to lag due to a lack of investment and underdeveloped infrastructure. This presents significant challenges for the development of agriculture in these regions.

The implementation of renewable energy sources, such as agrivoltaics and biogas plants, is becoming an important part of agricultural practices in Bulgaria, especially in Southern Bulgaria. This provides an opportunity to increase farmers' energy independence and reduce energy costs. However, access to these technologies is limited for smaller farms due to high initial costs and a lack of suitable financial mechanisms.

To overcome these challenges and accelerate the process of innovation adoption in agriculture, additional incentives and funding programs need to be created to support small and medium-sized farmers. European funds and national programs aimed at rural development can play a crucial role in this regard, providing financial resources for the purchase of equipment, the implementation of new technologies, and the training of farmers.

In the future, the sustainable development of the agricultural sector in Bulgaria will depend on farmers' ability to adapt their production practices to new technologies and implement sustainable resource management methods. The transformation of agricultural farms towards a higher technological level will be critical for ensuring competitiveness both domestically and internationally.

Key priorities in agricultural development should include:

- promoting innovations through access to financing and technical support;
- developing regional infrastructure, especially in less developed areas;
- increasing sustainable farming practices, such as organic farming and agroecology;
- supporting renewable energy sources in agriculture.

With these measures, Bulgaria can achieve better-balanced development of its rural areas and increase the agricultural sector's contribution to the economy while protecting the environment and preserving natural resources for future generations.

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THEORETICAL ASPECTS OF AGROECOLOGICAL PRACTICES IN BULGARIA

Abstract: *The policy implemented by the European community in agriculture aims to balance the relationship between agriculture and the environment. This interrelationship is a critical factor in the sustainable development of agroecological practices that both conserve natural resources and promote economic efficiency. There is a rich palette of applied agroecological practices that directly and indirectly impact the environment, such as organic fertilization, crop rotation, minimal tillage, and agroforestry. The widespread use and implementation of these practices would minimize the negative impacts of agriculture on climate, water resources and biodiversity while ensuring the long-term productivity of the agricultural sector. A comparative analysis of the measures aimed at agroecological activities from the Rural Development Program was prepared. It highlights the main points and differences in supported agroecological practices.*

Keywords: *agroecology; good practices; agriculture*

JEL: *Q001; Q10; Q50*

1. Introduction

Contemporary society faces important challenges in the context of food systems, including providing food for a growing population and conserving natural resources while ensuring decent and fair living conditions for farmers, agricultural workers and consumers. Environmental, health and ethical issues are increasingly central to consumers' concerns about fresh, less processed and sustainably produced food.

The comprehensiveness and interrelationships between these issues require applying comprehensive transformational approaches. A successful transition to sustainable agriculture and food systems is only possible through long-term strategies, a greater focus on agroecology, and the implementation of more agroecological practices on farms.

„Agroecology“ is a volatile concept that has gathered increasing attention in scientific, agricultural, and political circles in recent decades. This strategy aims to provide a comprehensive and long-term perspective for the transformation of agricultural and food systems.

Agroecological approaches are recognized as crucial development alternatives that can meet the basic demands of rural populations while improving the ecological capacity that supports their livelihoods (Norgaard, Sikor, 2018).

2. Research the Problem

The concept of „agroecological practices“ arose in the 1980s in connection with the development of agroecology as a science (Wezel et al., 2009). Practices such as cover crops, green manuring, crop rotation, agroforestry, biological control and pest management are increasingly advocated in farms as effective, easily applied by agricultural producers

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agroecological practices aimed at achieving sustainable agriculture while protecting the environment.

Agroecological practices are agricultural management methods that combine environmental, social, and economic objectives. They aim at sustainable food production, environmental protection, and the promotion of biological diversity. The main objective is to minimize the negative effects of agricultural activities on natural resources while maintaining and improving productivity (Branzova, Dimitrova, 2023).

In the last decade, more and more researchers have emphasized that integrating species diversity in agricultural systems is crucial. It is due to multiple reasons, such as the higher resilience of agroecosystems to external influences and disturbances, such as climate change, diseases and pests. For example, the author's collective (Jackson et al., 2007), noted that systems with more incredible biodiversity show significantly higher resilience to various adverse factors.

Some authors (Nicholls, Altieri, 2004) note that more diverse agricultural systems offer greater potential to control pests, including weeds, through more efficient natural mechanisms. Also, biological pest control provides a natural balance in agroecosystems without synthetic chemicals. This approach allows farmers to work sympathetically with the environment, increasing the efficiency of agroecosystems without harming biodiversity (Karner, 2010).

It is important to note that agroecological practices not only lead to increased biodiversity but also offer better long-term stability to agricultural systems. They make agroecosystems more flexible and resilient to unpredictable changes and challenges, providing greater adaptability to changing climate conditions and other external factors (Mendez et al., 2015).

In general, agroecological practices contribute to improving the sustainability of agroecosystems by building on various ecological processes and ecosystem services, such as nutrient cycling, biological nitrogen fixation, natural pest regulation, soil and water conservation, biodiversity conservation and uptake of carbon (Blagoev, 2021).

In Europe, agroecological practices are widespread, as the European Union actively promotes sustainable agriculture through the Common Agricultural Policy and the European Green Deal. EU-27 member states apply these practices to protect the environment, improve soil fertility and protect biological diversity.

3. Methodology

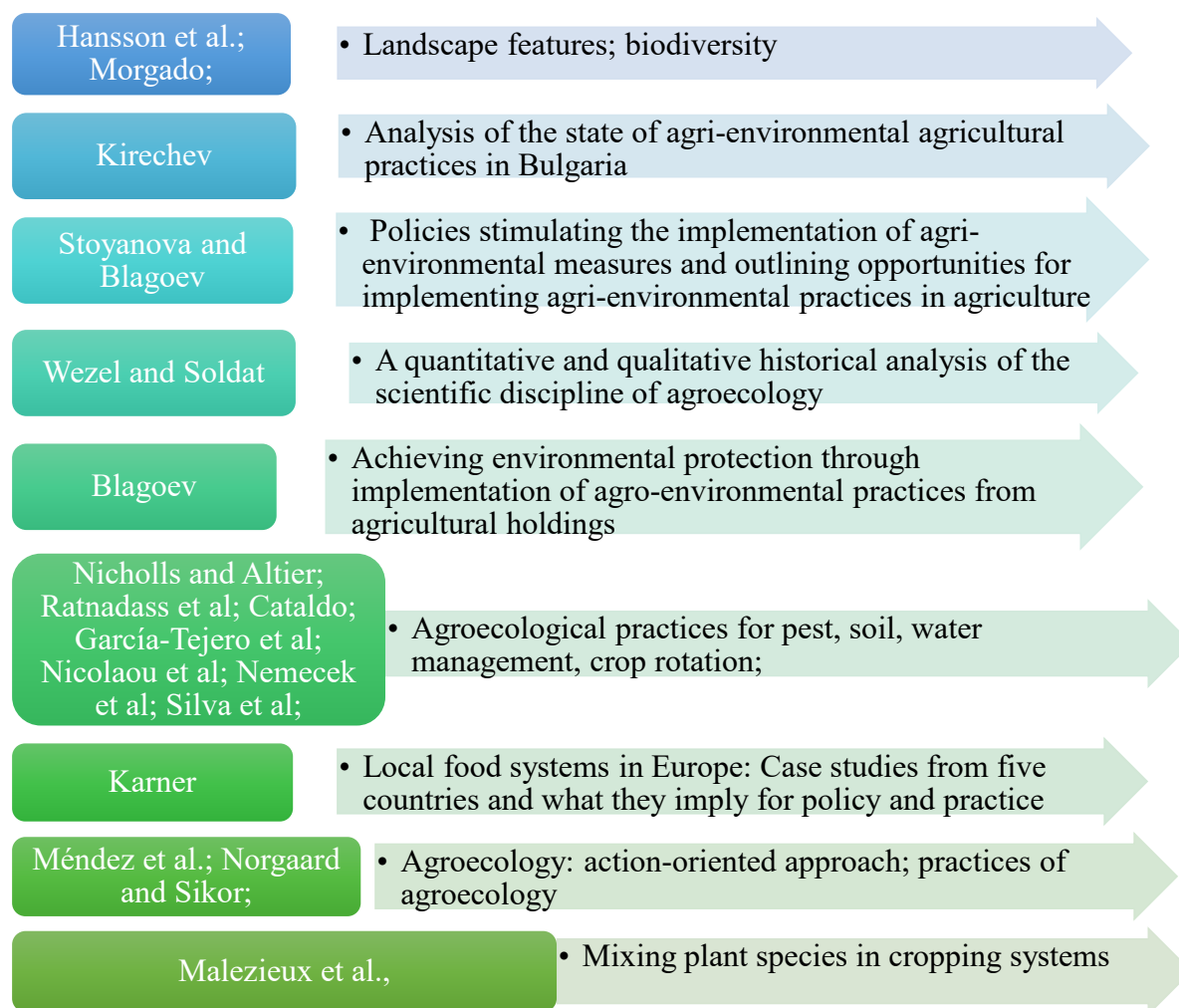
The study aims to analyse the author's views related to the importance, implementation, and benefits of using agroecological practices. Based on this, outline the possibilities for developing farms in this direction.

Methodological research framework: 1) Literature review of agroecological practices; 2) Determination of the methodological framework; 3) Theoretical aspects of agroecological practices; 4) Comparative analysis of the measures aimed at agroecological activities from the two program periods of the Rural Development Program.

4. Results of Research

Theoretical aspects of agroecological practices were explored using Google Scholar, Research Gate, AgEcon search, Scopus, and Web of Science database. The authors conduct policy research in this direction. They also consider in detail the advantages of applied agroecological practices.

Figure 1. Agroecological practices based on literature review



Source: Author's research.

In connection with the preparation of a comparative analysis of the measures aimed at agroecological activities, three program periods of the Rural Development Program in Bulgaria were considered.

During the 2007-2013 program period, in connection with the implementation and financing of agroecological activities, measure 214 „Agroecological payments“ of the Rural Development Program was implemented, which aims to implement the following good practices: soil and water management and protection of biodiversity, nutrient management and crop rotation, development of organic agriculture, conservation of genetic diversity, maintaining and restoring the traditional agricultural landscape, preserving biological diversity, conservation of soil and water resources, conservation of arable land of high natural value and Natura 2000 areas.

Regarding payments under this measure, heterogeneity is found depending on the type of commitment. Payments were made up to 200 EUR/ha per year to maintain extensive livestock grazing. For organic farming, payments were between 300 and 700 EUR/ha, depending on the crops. For the protection of rare animal species and endangered breeds, payments were up to 200 EUR/ha, depending on the specific terms of the commitment.

During the previous program period, the Rural Development Program (2014-2020) implemented measure 10 „Agroecology and climate“. The measure aims to implement the following good practices: preserving and maintaining permanent grassed areas of high natural value, preventing the future loss of grassed areas, protecting biological diversity and protecting, maintaining, and restoring the favourable status of Natura 2000 areas, protecting endangered rare breeds and traditional varieties of plants, preventing soil erosion, and increasing soil fertility.

During the period 2014-2022, under measure 10 subsidies were distributed for the protection of endangered local breeds, payments reached around 200 EUR/ha for erosion control, and maintenance of grassy areas of high natural value rates vary from 290 to 400 EUR/ha, for organic farming, application of biological production methods was compensated with rates from around 700 to over 800 EUR/ha, for traditional practices such as pastoralism, subsidies were between 400 and 600 EUR/ha.

During the new programming period of the Rural Development Program (2023-2027), agroecology activities are included in interventions related to the field of agroecology and climate in the Strategic Plan for the Development of Agriculture and Rural Areas. The priority is aimed at improving the market position of farmers in the „Fruits and vegetables“ sector and increasing their share in the value chain. It is intended to support farmers who are planning investments in their holdings aimed at protecting the components of the environment and for investments in creating an organic farm and investments for precision agriculture, as well as farmers' members in producer organizations.

In this regard, interventions to support farmers aim at soil conservation, good water management, energy efficiency, reduction of emissions and waste, integrated pest management, and creation and maintenance of habitats favouring biological diversity.

5. Conclusions

As a result of the research, it was established that many authors consider agroecological practices in terms of the policy applied, the support of farmers in this direction, and the many benefits of applying good practices for farm management.

A comparative analysis of the measures aimed at agroecological activities from the Rural Development Program was prepared. It highlights the main points and differences in supported practices during the three program periods.

Based on the research done, it is clear that the development of agricultural holdings through the adoption of good agricultural practices is crucial. It is our responsibility in the new programming period to preserve the habitats of wild species, protect waters from pollution, improve soil fertility, prevent soil erosion, preserve arable lands of high nature value, and preserve areas in Natura 2000. Implementing these practices on farms is a commitment to achieving the higher goals of agro-environmental measures.

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ОСОБЕНОСТИ НА КОНКУРЕНТОСПОСОБНОСТТА НА МАСЛОДОБИВНА И МАСЛОПРЕРАБОТВАТЕЛНА ИНДУСТРИЯ В БЪЛГАРИЯ

FEATURES OF THE COMPETITIVENESS OF THE OIL EXTRACTION AND OIL PROCESSING INDUSTRY IN BULGARIA

Резюме: Интеграцията на България в ЕС предоставя важни възможности за развитието на маслодобивната и маслопреработващата индустрия, но едновременно с това поставя значителни предизвикателства, които изискват стратегическо планиране и адаптиране към условията на засилен конкурентен натиск. Изследването на необходимостта от стимулиране конкурентоспособността на тази индустрия е наистина важна тема, особено когато става въпрос за стратегически подотрасли, които влияят на икономическото развитие и аграрната политика на страната. В тази връзка в настоящата статия се анализират и оценяват сравнителните конкурентни предимства на маслодобивната и маслопреработващата индустрия по показателите: производителност на труда, общи приходи за труд на един зает и общи разходи за труд на един зает. Конкурентоспособността на индустрията в изследването е измерена и чрез индикаторите на икономическата ефективност, която характеризира ресурсната осигуреност на месодобивните предприятия и степента на тяхното използване. За оценката на мястото на българската маслодобивна и маслопреработваща индустрия в структурата на световния търговски обмен в анализа е използван индексът на Баласа, чрез неговите 3 разновидности – RCA1, RCA2, RCA3.

Ключови думи: конкурентоспособност; икономическа ефективност; производителност на труда, индекс на Баласа, търговия

Abstract: The integration of Bulgaria into the EU provides important opportunities for the development of the oil extraction and processing industry, but at the same time, it poses significant challenges that require strategic planning and adaptation to the conditions of increased competitive pressure. The study of the need to stimulate the competitiveness of this industry is a critical topic, especially when it comes to strategic sectors that influence the economic development and agricultural policy of the country. In this regard, this paper analyzes and evaluates the comparative competitive advantages of the oil extraction and oil processing industry according to the following indicators: labour productivity, total labour revenue per employee and total labour cost per employee. The competitiveness of the industry in the study was also measured by the indicators of economic efficiency, which characterizes the resource provision of oil-producing enterprises and the degree of their use. For the assessment of the place of the Bulgarian oil extraction and oil processing industry in the structure of the world trade exchange, the Balasa index was used in the analysis, through its 3 varieties – RCA1, RCA2, and RCA3.

Keywords: competitiveness; economic efficiency; vegetable oils; animal fats; labor productivity

JEL: A10; L66; O13; Q17

1. Увод

Темата за конкурентоспособността е обект на много дебати и различни интерпретации в икономическите среди. Майкъл Портър въвежда категорията „конкурентоспособност“ на отраслово, корпоративно и бизнес равнище (Porter, 1980, р. 6) и дефинира категорията „фирмена конкурентоспособност“ като „състояние на дългосрочна рентабилност, която е над средната за съответния отрасъл“. В следващите си трудове Портър доразвива теорията за конкурентоспособността (Porter, 2004, 2010).

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Конкурентоспособността е сложна и многоизмерна икономическа категория, затова някои автори в своите анализи включват и други определения при тълкуването ѝ, като: продуктовата диференциация, иновациите, икономии от мащаба (O'Mahoney, van Ark, 2003), ръста на производителността на труда и добавената стойност (Krugman, Obstfeld, 1994), дял на вътрешния и външния пазар, ефективност на износа (Porter, 1980, 1990). За секторната и отраслова конкурентоспособност в икономическата литература има многобройни изследвания, като тя е разгледана в редица публикации (Malamova, 2011, 2014; Aleksiev, 2012; Kovacheva et al., 2011 и др.).

2. Състояние на проблема

След присъединяването на България в ЕС маслодобивната и маслопреработваща индустрия се реструктурира и адаптира към новите изисквания на европейския пазар. За повишаване на конкурентоспособността ѝ в нея се извършват оптимизации на производствените разходи, автоматизация и иновации. Провеждането на политиката на активно съживяване на подотрасъла включва и привличането на преки чуждестранни инвестиции, за да се постигне технологичен напредък, увеличаване на производствените капацитети, създаване на работни места, достъп до нови пазари,

продукти от отпадъци.

Целта на настоящата статия е да се направи оценка на равнището на конкурентоспособността на българската маслодобивна и маслопреработваща индустрия на европейския и световния пазар за периода 2010-2020 г.

3. Материали и методи

В настоящето изследване за оценка на постигнатото конкурентно равнище на маслодобивната и маслопреработваща индустрия са подбрани съответни индикатори.

Икономическата ефективност на труда е анализирана чрез показателите:

- приходи и разходи за труд на един зает и производителност на труда;
- общи приходи за труд на един зает – дават информация за количеството продажби, генерирани в един зает в маслодобивната и маслопреработваща индустрия;
- общите разходи за труд на един зает – дават информация за направените разходи от повишаване на възнагражденията с цел задържане на персонал, административното нарастване на минималната работна заплата и увеличението на минималните осигурителни доходи и др.;
- производителността на труда – отразява новосъздадената стойност на единица вложен труд.

Икономическата ефективност на инвестициите като ресурс за конкурентоспособност е оценена с показателите за общи инвестиции и инвестиции на един зает:

- общи инвестиции – капиталовложения, служещи за производство на продукция, стоки и услуги; различни видове ценни книжа, обикновено продавани на организирана борса; всички средства, вложени с цел научна, развойна и внедрителска дейност, както и обучение и квалификация;

- инвестиции на един зает – дават информация за вложените брутни инвестиции в дълготрайните активи на един зает.

Сравнителните конкурентни предимства на маслодобивната и маслопреработваща индустрия се анализират и от глобална перспектива, за да се разкрие връзката със световните пазари, като за целта е използван индексът на Баласа (Balassa, 1965) чрез неговите 3 разновидности – RCA1, RCA2, RCA3.

Индекс RCA1 – показва дела на българския износ на произведените продукти от маслодобивната и маслопреработваща индустрия спрямо световния. Индексът може да приема стойности от 0 до 1 и колкото те са по-близки до 1, толкова подотрасълът има по-значимо място в международната търговия и неговата роля като ценообразуващ фактор нараства.

$$RCA1 = X_{ij} / X_{nj} \quad (1)$$

където:

RCA1 – индекс на сравнителни конкуренти предимства;

X – износ;

i – страна;

j – вид на стоката;

n – избрани страни.

Индекс RCA2 измерва дела на маслодобивната и маслопреработваща индустрия в общата търговия отнесено към дела на всички стоки на националната икономика към тази стокова групировка в тази съвкупност. Стойностите на индекс RCA2 за разлика от RCA1 могат и да надвишават единица.

$$RCA2 = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) = (X_{ij} / X_{nj}) / (X_{it} / X_{nt}) \quad (2)$$

където:

RCA2 – индекс на сравнителни конкуренти предимства;

X – износ;

i – страна;

j – вид на стоката;

n – избрани страни;

t – съвкупност от всички стоки.

Индекс RCA3 – може да приема положителни и отрицателни стойности, като интерпретирането е следното: при отрицателни стойности на индекса, това означава, че България е нетен вносител на продукти от подотрасъла, а при положителни – нетен износител.

$$RCA3 = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}) \quad (3)$$

където:

X – износ;

i – страна;

j – вид на стоката;

M – внос.

Методи на изследване – сравнителен анализ, аналитичен метод, графични методи за визуализация на получените резултати.

Източници на информация – в изследването са използвани официално публикувани от Евростат за периода 2010-2020 г.

4. Резултати от изследването

Икономическа ефективност на труда

За периода 2012-2022 г. общите приходи за труд на един зает в маслодобивната и маслопреработваща индустрия се увеличават с 523.1%, като от 130 хил. евро през 2012 г. се покачват на 810 хил. евро (Таблица 1), което се дължи на нарасналото производство и търсене на продуктите, повишаване на ефективността от продажбите и дистрибуцията, диверсификация на продуктите и др.

Производителността на труда в подотрасъла за периода 2012-2022 г. също ускорява темпа си на растеж четирикратно благодарение на нарастване на обема на произведената продукция, разширяване на производството, намаляване на себестойността и повишаване на рентабилността на производството.

Таблица 1. Динамика на ефективността за труд в маслодобивната и маслопреработваща индустрия, 2012-2022 г. (хил. евро)

Показатели	2012	2013	Средно 2012/2013	2017	2018	Средно 2017/2018	2021	2022
Общи приходи за труд на един зает	130	180	150	220	230	230	550	810
Производителност на труд	20	10	20	10	20	20	60	80
Общи разходи за труд на един зает	110	170	130	210	210	210	490	730

Източник: Евростат и собствени изчисления.

Аналогично изменение се наблюдава и в стойностите на общите разходи за труд на един зает в маслодобивната и маслопреработваща индустрия като от 110 хил. евро през 2012 г. нарастват до 730 хил. евро и бележат огромен ръст с около 563.3% (Таблица 1). Сравнявайки ръста на общите разходи за труд на един зает с приходите за труд на един зает е видно, че той изпреварва този на приходите за периода 2012-2022 г. Повишаването на разходите се дължи на високия ръст на инфлацията след COVID-19 кризата и военните конфликти в световен мащаб.

Икономическа ефективност на инвестициите

През периода 2012-2018 г. общите инвестиции (с натрупване) в маслодобивната и маслопреработваща индустрия нарастват с 30.4% и възлизат на 27937.7 хил. евро през 2018 г. (Таблица 2). Ръстът се дължи на извършваните модернизации, внедряването на нови процеси, нови продукти и разширяване на производствения капацитет в подотрасъла в условията на ожесточена конкуренция с международни търговски

компаниите. През 2018 г. спрямо 2021 г. е отчетен спад в размера на общите инвестиции с 52%, дължащ се на динамичната и усложнена бизнес среда, в резултат на икономическия шок във веригата на доставки поради COVID-19 кризата. Инвестициите в подотрасъла като относителен дял в отрасъла ХВП намаляват от 2.9% на 2.6% и в подотрасли храни – от 11.1% на 6.4%.

Таблица 2. Инвестиции в маслодобивната и маслопреработваща индустрия, 2012-2022 г.

Показатели	2012	2013	Средно 2012/2013	2017	2018	Средно 2017/2018	2021	2022
Инвестиции – (хил. евро)	21428.1	29836.8	25767.8	32398.2	27937.7	30158.8	13408.6	20342.4
Дял в отрасъл ХВП (%)	2.9	3.6	3.3	3.8	3.3	3.5	1.8	2.6
Дял в подотрасли храни (%)	11.1	13.8	12.5	11.9	9.2	10.6	4.5	6.4
Инвестиции на един зает (хил. евро)	8.7	12.8	10.8	12.3	10.7	11.5	5.8	7.9

Източник: Евростат и собствени изчисления.

Подобна тенденция се наблюдава и в размера на инвестициите на един зает в подотрасъла. Като през периода 2012-2018 г. е регистриран ръст в техния размер с 23%, а след 2018 г. е отчетен спад с 35.4% спрямо 2022 г.

Външнотърговски баланс (внос и износ), индекс на сравнителни конкурентни предимства

Динамиката на вноса и износа на продуктите от маслодобивната и маслопреработващата индустрия в стойностно изражение показва, че те са с тенденция към нарастване съответно с 11 и 6.4 пъти през периода 2012-2022 г. Темповете на износ значително превишават вноса (Таблица 3). Общият стойностен обем на вноса на продуктите, произведени от подотрасъла за изследвания период, нараства от 138.26 млн. евро през 2012 г. на 878.12 млн. евро през 2022 г. Износът през периода 2012-2022 г. бележи ръст след 2018 година – близо 2 пъти спрямо 2021 г. и почти 5 пъти спрямо 2022 г. (Таблица 3). Нарастването на износа довежда до подобряване на търговския баланс и подотрасълът се развива в положителна насока.

При анализа на сравнителните конкурентни предимства на подотрасъла се наблюдава, че през периода 2012-2022 г. RCA1 нараства с 4 пъти, т.е. с толкова нараства значението на националния износ в световна търговия (Таблица 3). Данните от Таблица 6 показват, че за изследвания период индексът RCA2 рязко се увеличава с 4.2 пъти, като през 2022 г. достига 6.22.

Повишаването в стойностите на индекса се дължи на увеличението на дела на износа на продуктите от маслодобивната и маслопреработваща индустрия в общия селскостопански износ на страната, което означава печалба на експортните предимства в производството на тези продукти. Аналогична е тенденцията към изменение на стойностите на RCA2 с тази на RCA3, като стойностите му са положителни за целия период на изследване, макар и да е налице спад през 2022 г. – 0.33 спрямо 0.41 за 2021 г. и средно 0.45 за периода 2017/2018 г., т.е. балансът от търговията с продуктите от

маслодобивната и маслопреработваща индустрия е положителен, което свидетелства за повишаване на конкурентоспособността на подотрасъла. Това означава, че самозадоволяването нараства и излишъкът на продуктите, произведени от подотрасъла също расте, което превръща страната в нетен износител.

Таблица 3. Внос, износ, търговски баланс – маслодобивна и маслопреработваща индустрия и индекс на Баласа, 2012-2022

Показатели	2012	2013	Средно 2012/2013	2017	2018	Средно 2017/2018	2021	2022
Износ подотрасъл (млн. евро)	158,80	206,35	182,57	307,79	326,26	317,03	713,17	1748,19
<i>RCA1</i> присъствие на стоката в световния износ	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.04
<i>RCA2</i> отношение на RCA1 към общата търговия	1.49	1.92	1.70	2.37	2.72	2.54	4.03	6.22
Внос подотрасъл (млн. евро)	138,26	125,97	132,12	117,85	118,91	118,38	296,47	878,12
Търговски баланс към ЕС (млн. евро)	20,54	80,38	50,46	189,94	207,35	198,64	416,69	870,06
<i>RCA3</i> нетна търговия на стоката	0.07	0.24	0.16	0.45	0.47	0.46	0.41	0.33

Източник: Евростат и собствени изчисления.

5. Изводи

Резултатите от анализа за постигнатото конкурентно равнище на маслодобивната и маслопреработваща индустрия през периода 2010-2020 г. дават основание да се формулират следните изводи:

- Ръстът на общите разходи за труд на един зает е по-висок от този на приходите за труд на един зает в подотрасъла, тъй като е повлиян от инфлационните процеси през последните години, породени от COVID-19 кризата и военните конфликти в световен мащаб.
- Вложените инвестиции в маслодобивната и маслопреработваща индустрия играят важна роля за повишаване на конкурентоспособността ѝ, като през периода 2012-2018 г. нарастват с 30.4%, а след това бележат спад с 27.2% и възлизат на 20342.4 хил. евро през 2022 г.
- Резултатът от външната търговия и измерванията с Баласа индекс, показват засилване на конкурентните позиции на продуктите, произведени от маслодобивната и маслопреработваща индустрия. Съотношението между общия износ и вноса в подотрасъла е в полза на износа, което превръща подотрасъла в нетен износител.

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IMPACT OF PRODUCTION COSTS ON PROFIT FORMATION IN AGRICULTURAL HOLDINGS OF BULGARIA

Abstract: Farm costs are varied and variable over time. The aim of this article is to study how changes in the costs of production activities affect profit formation in Bulgarian farms. The object of the study are four types of costs: specific costs; farming overhead costs; depreciation and external factor costs. The methodology includes an assessment of the composition, structure and dynamics of the types of costs. Farm Accountancy Data Network data for the period 2007-2022 were used for the analysis. The analysis covers eight farm types by specialization and four farm types by economic size. Multiple regression is used to identify the impact of different types of costs on profit formation on farms. Depending on the specialization, the results indicate a very strong dependence of profit on costs in other grazing livestock farms and granivores farms. Strong dependence is observed in the sectors – milk, mixed, field crops and other permanent crop farms. Significant dependence is found in the sectors of wine and horticulture. Depending on the economic size, the results indicate a strong dependence of profit on costs in very large farms and small farms, a significant dependence in small and large-sized farms.

Keywords: costs; profit; specialized farms; farms by size; FADN analysis

JEL: Q12; Q18

1. Introduction

With the accession of Bulgaria to the European Union, the level of specialization and concentration of production for agricultural output is increasing (Ivanov et al., 2020). Profit formation for farms is critical, given the specific commodity nature of production, the strong influence of international markets, the volatility of agricultural commodity prices, etc., which is why in many countries, including Bulgaria, farmers are subject to public support. Profit for farms is important in order to be able to sustain current operations and reproduce capital (Fi-compass, 2023). It is an important source of funds for investment (Branzova, 2019) and maintaining competitiveness (Ivanov, 2021). The study of economic costs makes it possible to understand their relevance to patterns of production specialization and is an important basis for studying efficiency (FAO, 2018). In this sense, the purpose of this paper is to examine the ability of agriculture and how changes in the cost of production activities affect the profit formation in agricultural farms in Bulgaria.

2. State of the Problem

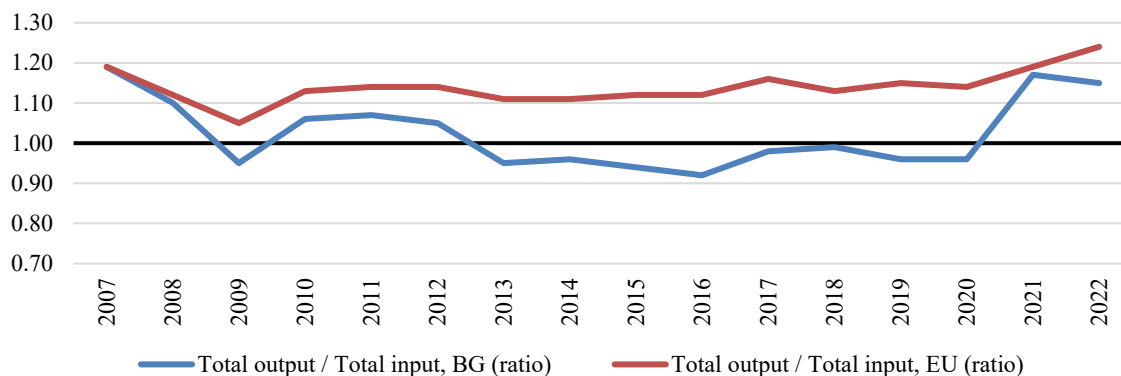
Cost and factor productivity issues are explored in more depth in the 2020 State of Agriculture Report (Ivanov et al., 2020). Previous studies have examined changes in factor costs (Koteva, 2017; Kirechev, 2022), labour costs (Kirechev, 2024a), and cost efficiency on farms by specialisation (Kirechev, 2024b).

A closer look at the problem shows that the dynamics of the level of cost coverage of gross output in Bulgarian agriculture is moving in serious fluctuations in Bulgarian farms in the years before 2020 hardly make a profit, which is why their income support is crucial for the realization of net farm income (Figure 1). At the same time, the ability of Bulgarian farms to make a profit is constrained by rising costs, which are growing faster than gross output. Moreover, there are serious disparities in the composition of different types of costs. Increased

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demand for land has led to a significant increase in the size of rent payments (Mihailova, Yovchevska, 2023; Stanimirova, 2024). There is a restructuring of costs in Bulgarian farms.

Figure 1. Ratio of total output and total inputs in the average agricultural holding in Bulgaria and the EU



Source: FADN.

In the context of recent global studies (OECD, 2024), profit generation and maintaining a positive income in Bulgarian farms is crucial for their survival and restructuring in their transition towards sustainability, developing their investment base and maintaining their competitiveness.

3. Methodology of the Study

Changes in farm profits are analysed in terms of 2 factors that determine profits – the value of output and the value of inputs. For the purposes of the analysis, profit is distinguished from farm income insofar as the Balance of Current Subsidies and Taxes is added to profit in the formation of farm income.

Methodologically, the estimation of profit is carried out as:

$$\text{Profit} = \text{Total Input} - \text{Total Output} = \quad (1)$$

$$\text{Profit} = \text{Total Input} - \text{Specific costs} - \text{Farming Overhead} - \text{Depreciation} - \text{External Factor Costs} \quad (2)$$

For the purposes of the analysis, costs are differentiated into four main groups:

- Specific Costs;
- Farming Overheads;
- Depreciation;
- External Factor Costs.

The profit evaluation methodology includes indicators such as:

- The dynamics in the coverage of total inputs by total outputs;
- Changes in the composition and dynamics of profit;
- Changes in the composition, structure and dynamics of different types of costs;
- Dependence of profit on different types of costs.

The object of the analysis is:

- The average Bulgarian farm and the average EU farm;
- Eight farm types by specialisation: Field crops; Horticulture; Wine; Other permanent crops; Milk; Other grazing livestock, Granivores, Mixed.
- ~Four types by economic size: Small farms (2-25 K€); Medium farms (25-100 K€); Large farms (100-500 K€); Extra-large farms (above 500 K€).

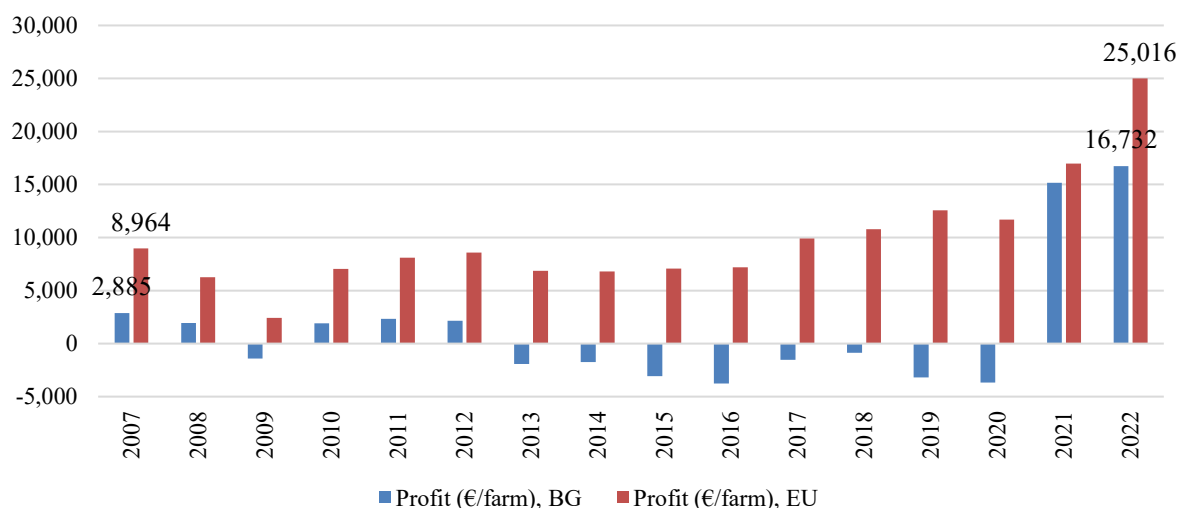
The analysis is carried out using data from the Farm Accountancy Data Network, FADN, from 2007 to 2022.

For the purpose of economic analysis, comparative analysis methods, dynamics analysis, structural variables analysis, factor analysis and dependency analysis are used.

4. Results

Changes in the size of agricultural holdings in Bulgaria (4.6 times, compared to 1.9 times in EU farms) are a major factor in the high rates of change in their output and inputs, but do not determine the amount of profit they earn. Profits have been volatile over the period analysed, with negative profits for 2009 and the period 2013-2020. In the immediate aftermath of the COVID-19 crisis and after the start of the war in Ukraine, the supply of agricultural produce was constrained and agricultural output prices rose, leading to a sharp increase in total output and creating conditions for higher farm profits in 2021 and 2022. Over the same period, the economic performance of the average European farm changed at a more moderate pace. Fluctuations in the number of profits are much smaller, being positive for the entire period (Figure 2).

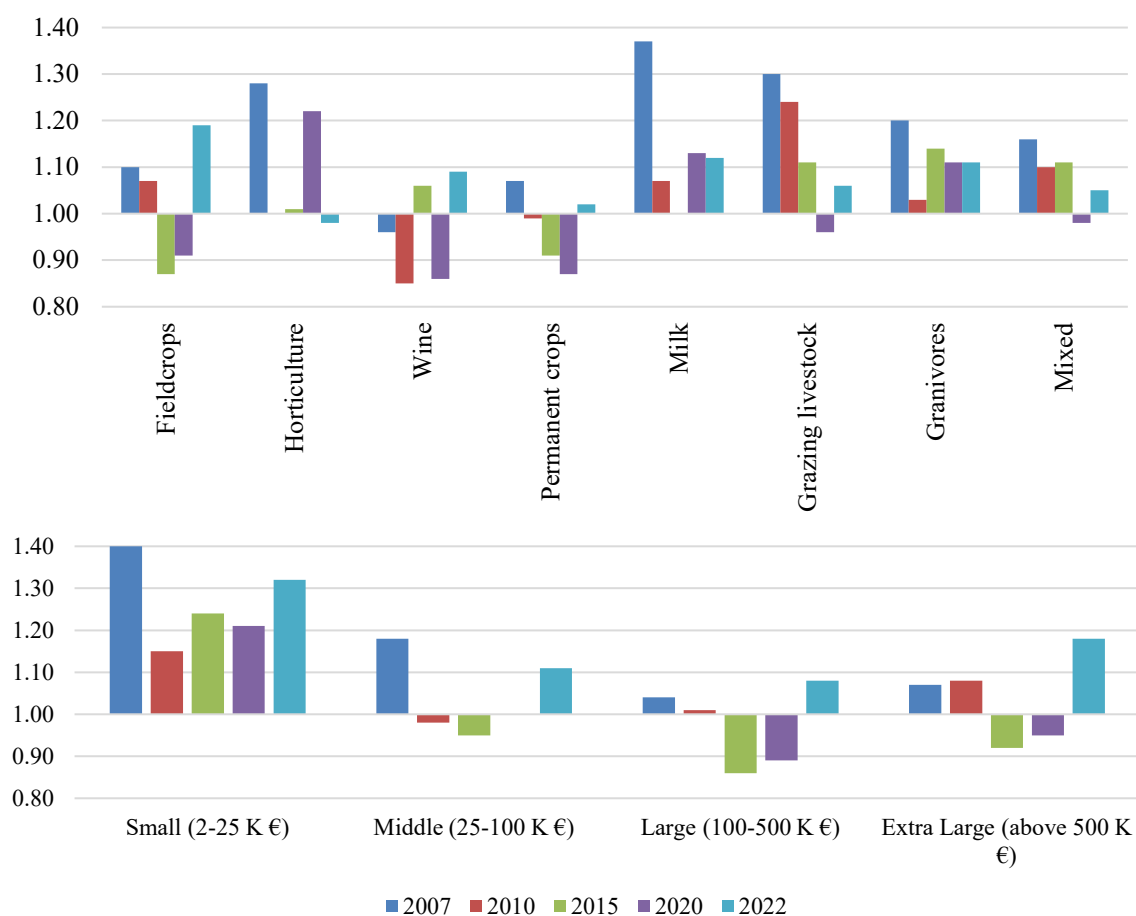
Figure 2. Profit situation of the average Bulgarian farm and the average EU farm



Source: FADN.

The evolution of profit on average Bulgarian farms by specialisation and size shows exceptional dynamics, with profit in the period to 2020 significantly different from that in the period 2021-2022. The extent to which inputs are covered by output by farm specialisation is shown in Figure 3 (above). The extent to which inputs are covered by output by the economic size of farms is presented in Figure 3 (below).

Figure 3. Ratio of total output and total inputs in the average farm in Bulgaria by specialization (top) and by economic size (bottom)



Source: FADN.

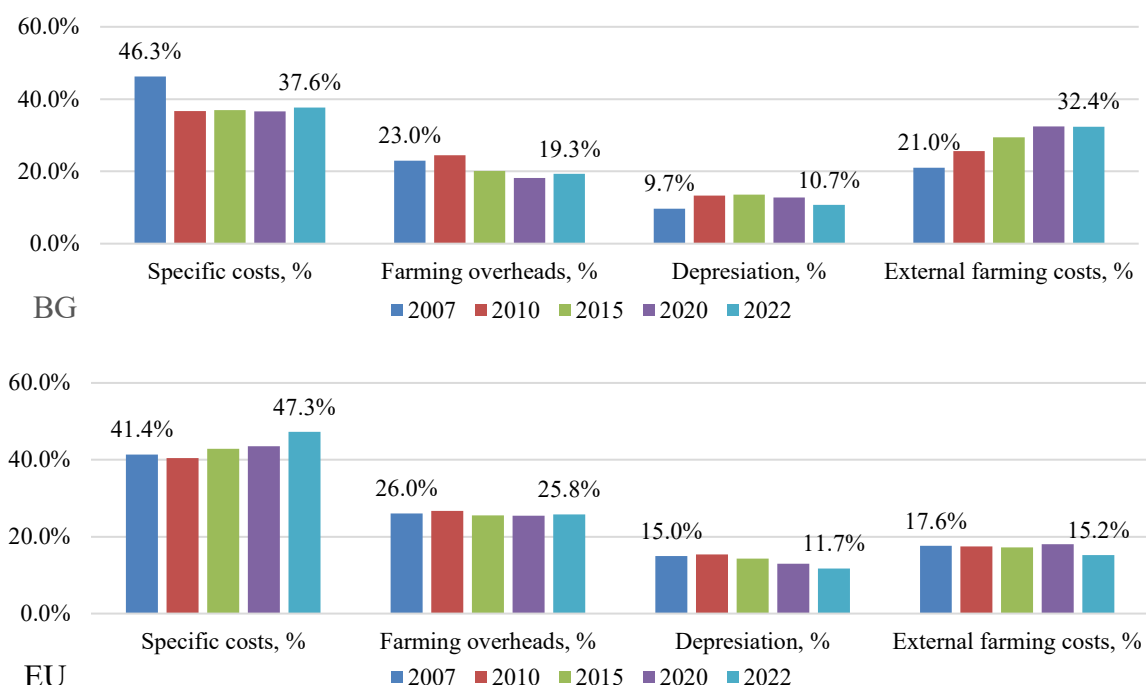
The output produced is a consequence of the inputs used to produce agricultural output. The composition of resources is differentiated into four groups of costs subject to analysis, which vary with dynamic proportions:

- 1) Specific costs. Their share decreased from 46.3% to 37.6%, while on the average farm in the EU, their share increased from 41.4% in 2007 to 47.3% in 2022 (Figure 4). The fastest growing costs are for fertilizers and plant protection, reaching 33.2% and 13.1% in 2022, respectively. Seed costs are 13.4% of total specific costs, and other costs for crop production are 0.9%. Feed costs are decreasing and account for 37.4%, veterinary services – 1.6%, and animal product processing – 0.8%, other costs are 1%. On small farms, specific costs increase at a faster rate, and growth rates increase with economic size.
- 2) Farm overhead costs. Their share decreased from 23% to 19.3%, while on the average farm in the EU, their share was relatively constant and changed from 26% in 2007 to 25.8% in 2022 (Figure 4). The fastest growing costs are the costs for maintenance of machinery, equipment and buildings, reaching 23.8% in 2022. The largest share is occupied by energy costs – 52.4%, contract work – 13.1% and other overhead costs – 10.8%. On small farms, specific costs are increasing at a faster rate. As economic size increases, their growth rate increases.
- 3) Depreciation. Their share increased from 9.7% to 10.7%, while on the average EU farm, their share decreased from 15% in 2007 to 11.7% in 2022 (Figure 4). In the livestock and

mixed farming sectors, depreciation costs are rising much faster than in the crop sector. As the economic size of farms increases, depreciation costs increase at relatively the same rate.

- 4) External factor costs. Their share grew significantly from 21% to 32.4%, while in the average holding in the EU, their dynamics were relatively weaker, as their relative share in total resources decreased (Figure 4). Rent costs increased 21,3 times, as their share in total external factors increased from 32% in 2007 to 60.9% in 2022 (in EU farms it changed from 26.9% to 32.3%). Wage costs are growing significantly slower – only 6.8 times, with their share in total external costs decreasing from 59.3% in 2007 to 36% in 2022 (in EU farms it changes from 54.7% to 58%). Interest costs are growing significantly, with their share decreasing from 8.7% in 2007 to 3.1% in 2022 (in EU farms their size is relatively constant, in relative share it decreases from 18.5% to 9.7%). By sector, externality costs change most sensitively on Mixed farms and on Milk and Granivores farms. As economic size increases, the share of external factor costs rises.

Figure 4. Changes in the cost structure by type of the average Bulgarian farm (top) and the average EU farm (bottom)



A more in-depth study of the impact of cost types on the formation of the financial result was carried out using regression analysis. It was assessed how changes in the composition of specific costs (X1), farm overheads (X2), depreciation (X3) and factor costs (X4) affect changes in profit. The estimation period is 2007-2022, and the higher values achieved in the indicators in 2021 and 2022 affect the strength of the relationship at $\alpha = 0.05$ (95% confidence level). Multiple R values are interpreted as follows: $0 < R < 0.3$, weak dependence; $0.3 < R < 0.5$, moderate dependence; $0.5 < R < 0.7$, significant dependence; $0.7 < R < 0.9$, strong dependence; $0.9 < R < 1$, very strong dependence. The results of the analysis are presented in Table 1.

The analysis shows a strong dependence of profit on the four types of production costs in Bulgarian farms and a very strong dependence on the average EU farm. By sector, the strongest dependence of profit on costs is Other grazing livestock and Granivores, with strong dependence on Field crops, Other permanent crops and Mixed farms. There is significant dependence on the Horticulture, Wine and Milk sectors. According to their economic size, a strong dependence of profit on the four types of costs is observed in small farms and very large

farms, and in medium farms and large farms. The results show that in the average Bulgarian farm: a 1% increase in specific costs will lead to a 1.05% profit, a 1% increase in farm overheads will reduce profit by 1.62%, a 1% increase in depreciation costs will increase profit by 6.59%, and a 1% increase in external factor costs will reduce profit by 2.74%.

Table 1. Regression dependencies of farm profits on the types of production costs for the period 2007-2022

Indicators/ type of farms	Multiple R	R Square	St. Error	Sig. F	Dependence	Significance of the model
BG farms	0,811	0,657	4197	0,01	Strong	Significant
	Regression equation: $3011+1.050X1-1.625X2+6.596X3-2.741X4$					
EU farms	0,981	0,963	1159	7,59E-08	Very strong	Significant
	Regression equation: $22318-0,441X1-3,311X2+9,417X3-0,416X4$					
Field crops	0,763	0,582	11186	0,03	Strong	Significant
	Regression equation: $-18247+0,905X1-2,336X2+6,186X3-1,957X4$					
Horticulture	0,578	0,334	2409	0,30	Significant	Insignificant
	Regression equation: $3859+0,187X1+0,536X2-1,192X3+0,022X4$					
Wine	0,635	0,403	8541	0,18	Significant	Insignificant
	Regression equation: $-17972+0,822X1-1,073X2+0,173X3-0,558X4$					
Other permanent crops	0,725	0,525	1283	0,06	Strong	Insignificant
	Regression equation: $1983-0,944X1-0,331X2+1,040X3+0,348X4$					
Milk	0,712	0,509	2129	0,07	Strong	Insignificant
	Regression equation: $522-0,028X1+0,318X2+0,302X3-0,950X4$					
Other grazing livestock	0,915	0,837	504	0,0002	Very strong	Significant
	Regression equation: $701-0,881X1+1,566X2+2,358X3-0,243X4$					
Granivores	0,919	0,845	14678	0,0002	Very strong	Significant
	Regression equation: $1367-0,908X1+1,978X2+1,516X3+1,083X4$					
Mixed	0,873	0,763	1206	0,002	Strong	Significant
	Regression equation: $-2331+0,337X1-4,883X2-0,016X3+2,544X4$					
Small farms (2-25 K €)	0,829	0,687	567	0,008	Strong	Significant
	Regression equation: $-3540-0,937X1-1,204X2-6,392X3+3,277X4$					
Medium farms (25-100 K €)	0,505	0,255	3830	0,47	Significant	Insignificant
	Regression equation: $-2969-0,283X1-0,104X2+1,879X3-0,593X4$					
Large farms (100-500 K €)	0,552	0,305	27732	0,36	Significant	Insignificant
	Regression equation: $-94523-0,282X1-0,481X2+3,401X3-1,525X4$					
Extra-large farms (above 500 K €)	0,775	0,601	112902	0,03	Strong	Significant
	Regression equation: $-270501-0,316X1-0,998X2+3,927X3-1,149X4$					

5. Conclusion

Farmers and farm managers should pay increasing attention to the level of external costs (especially rent), otherwise an increasing proportion of profits and income will leave farms to reward the factors of production used. Thus, rising costs reduce income and increase the sensitivity of farms to public support, but can be essential for the adoption of resource-saving technologies.

In terms of specialisation, the increase in specific costs reduces profits in the Other permanent crops, Milk, Other grazing livestock and Granivores sectors. In terms of size, in all sectors the increase in specific costs reduces profit, but it has the greatest impact on small farms. Increased overheads reduce profits in the Field crops, Wine, Other permanent crops and Mixed farms sectors, while their changes are less favourable for small farms and very large farms. Increased depreciation costs reduce profits to a greater extent in the Horticulture and Mixed farms sectors, having a greater impact in the Small, Large and Very Large farms sectors. Increases in external

factor costs have the greatest impact on profits in the more land-intensive sectors – Field crops, Wine, Milk and Other grazing livestock. Their impact is more pronounced on large and very large farms.

In the coming years, farms will need more and more profits to sustain their investments in the transition to sustainability, which implies tighter control over costs that reduce profits. This requires slowing the growth of external costs (especially rents), given that farms will need to spend more in the future to reward more skilled labour and expand investment in more productive assets and sustainable practices.

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IMPACT OF THE EUROPEAN EMISSIONS TRADING SCHEME ON THE DEVELOPMENT OF THE BULGARIAN AVIATION SECTOR

Abstract: *The effects of the European Emissions Trading Scheme (EU ETS) on the aviation sector of the new EU member-states are not well studied. Bulgaria has not reached the average EU level of GDP yet. Its economy continues its transformation and convergence. In a similar situation are also the economies of Romania and Croatia. In this regard, the purpose of the present study is to evaluate whether the inclusion of the Bulgarian aviation sector in the EU ETS in the medium- and long-run will be a stimulus or a restriction to the country's economic growth. The publication discusses also some problems and strategic documents of Bulgarian air transport and proposes solutions. An accent is also placed on the competitive positions of Bulgarian aviation in the EU transport market from the viewpoint of environmental friendliness and economic effectiveness.*

Keywords: *EU ETS; aviation sector; convergence*

JEL: *R49; Q54*

1. Introduction

As a result of the COVID-19 pandemic, one of the most affected economic sectors was air transport. This exogenous economic shock impacted negatively the development of aviation, especially in EU member-states like Bulgaria, which are in a process of transformation and convergence of their economies.

On the other hand, because of the competitive advantages of air transport, related to carrying passengers over 1000 kilometres and reducing travel time for citizens, aviation is one of the sectors that contributes to climate change. The sector is responsible for approximately 3% of the emissions of greenhouse gases globally, for 12% of the total emissions by transport sector on a European level and for 6% of the emissions of CO₂ in Bulgaria (EUROSTAT, 2024a). A key role in the latest European strategic documents plays the economic measures for decarbonization of the aviation sector through its covering by the European Union Emissions Trading Scheme (EU ETS). This scheme serves as a market-based mechanism for energy transformation of the EU member states air transport sector till the moment when digital technologies and artificial intelligence are massively applied, as well as sustainable aviation fuels (SAF) are massively consumed by the operators.

2. Main Purpose and Methodology of the Research

The necessity of reaching climate neutrality by 2050, could be perceived as a serious challenge to the EU member-states with transforming economies. *First*, because by the end of 2023, the new member-states like Bulgaria, Romania and Croatia have not yet deeply studied the effects of EU ETS on their aviation, even though this problem was put on the EU transport policy agenda since 2012. *Second*, GDP per capita in countries like Bulgaria in 2023 is still two times lower than the EU average values (EUROSTAT, 2024b).

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Having in mind the above-mentioned, the purpose of the present research is to evaluate whether the covering of the Bulgarian aviation sector by the EU ETS will encourage or limit the economic growth of the country. In this regard, statistical and econometric analysis will be applied.

3. State of the Problem

Literature review

Schaefer, et al. (2010) have analyzed how the introduction of aviation to the EU ETS will influence its economic and environmentally friendliness development. The authors took in mind also indicators like fuel consumption by aircraft and ton kilometres performed by the operators. Nava et al. (2018) have presented a new look at the Cournot-Nash equilibrium for aviation companies, that incur additional costs because they are covered by the EU ETS. According to the authors, this process is also accompanied by a loss of market share by the aviation operators and a possible reduction of the economic growth of the country.

Efthymiou and Papatheodorou (2019) have conducted theoretical research, which explores the experts' view on policy instruments, good practices and lessons from the past for the inclusion of air transport to the EU ETS. Kraavi and Koehler (2013) have applied a macro-econometric E3ME model for a couple of EU member states to study the possible effects of EU ETS on the aviation sector decarbonization. In 2021 Sheelhaase, Maertens and Grimme proposed an option to improve the European Emissions Trading Scheme, concerning the aviation sector. They have calculated that in 2019 one carbon allowance, purchased by aviation operators led to passengers' costs increasing by 1.25 euros in Europe.

The examined publications do not repeat the purpose of the present study. Similar to them, there will be examined the effects of aviation sector inclusion in the EU ETS, but in the case of a country with a transforming economy, like Bulgaria.

Strategic framework on the European and national level

The future development of the European aviation sector is oriented towards its climate neutrality till 2050 pursuing the ambitious goal of reducing greenhouse gas emissions by 55% till 2030 compared to 1990. In this regard, it is introduced the „cap and trade“ mechanism for CO₂ carbon emissions from aviation, as well as the requirements for reducing by 50% of the net carbon emissions by air transport till 2050 compared to 2005 and improving aircraft fuel consumption efficiency by 1.5% per annum (EASA, 2022). Already in 2009 with the amendments of the Directive on the establishment of EU ETS, air transport was included in its coverage (Directive 2008/101/EC, 2009). It regulates that from the beginning of 2013, 15% of the carbon allowances should be traded on the market and each EU member-state should set aside 3% of carbon allowances as a special reserve for aviation operators.

The European Emissions Trading Scheme applies only to domestic flights in the European Union and between member-states of the EEA. As for the number of carbon allowances issued each year a cap is set to limit the CO₂ emissions and for the period 2013-2020, their number should drop by 1.74% per year and for the period 2021-2030, the number of carbon allowances issued should decrease by 2.2% per annum (A4E, 2021).

Another scheme for decarbonization of air transport globally is the ICAO's initiative CORSIA and it is applied to international flights. This initiative was established in 2016, and it serves as a scheme for compensation of carbon emissions from aviation through the purchasing of carbon

allowances or through the implementation of investment projects to reduce greenhouse gas emissions by air transport operators (Scheelhaase et al., 2018).

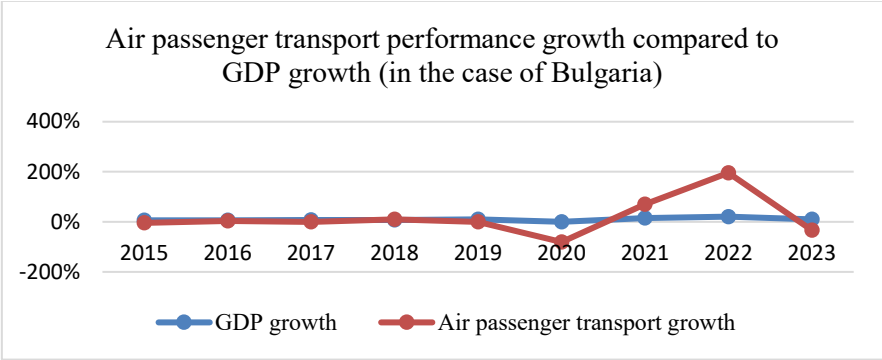
At a national level, the main document, regulating the introduction of the Bulgarian aviation sector to the EU ETS is the Climate Change Mitigation Act, which fully applies the provisions of Directive 2008/101/EU (State Gazette, 2014). The issue of aviation sector decarbonization is also addressed in the Integrated Energy and Climate Plan of the Republic of Bulgaria 2021-2030 (MOEW, 2024).

Digitalization and environmentally friendliness of airport and ground operations are also directly linked to the goal of achieving climate neutrality in the aviation sector. Already in 2009, the European Airports Carbon Accreditation Association introduced the so-called airport carbon accreditation certificates depending on the amount of carbon dioxide emissions, performed by airport operators, based on a 7-level scale (ACA, 2024). For example, according to this system, two of the Bulgarian airports are accredited – Burgas Airport – level 2 of accreditation – Reduction and Sofia Airport – level 4 of accreditation – Transformation. For comparison, in Romania three of the international airports for public transportation services are accredited in this scheme, as the highest level of certification is 3 (Optimization), in Croatia the accredited airports are again three and their highest level of certification is also level 3.

Empirical analysis

The effects of introducing the Bulgarian aviation sector to the EU ETS will be studied through the indicators analysis like the growth of Bulgarian operators’ aviation performance compared to the GDP growth, number of carbon allowances, issued to Bulgaria aviation operators; number of commercial flights by a comparison between EU member states. Through the application of a regression analysis, the correlations amongst the abovementioned indicators will be expanded and a relationship with the indicator „economic growth of the country“ will be sought.

Figure 1. Air passenger transport performance growth compared to GDP growth (in the case of Bulgaria)



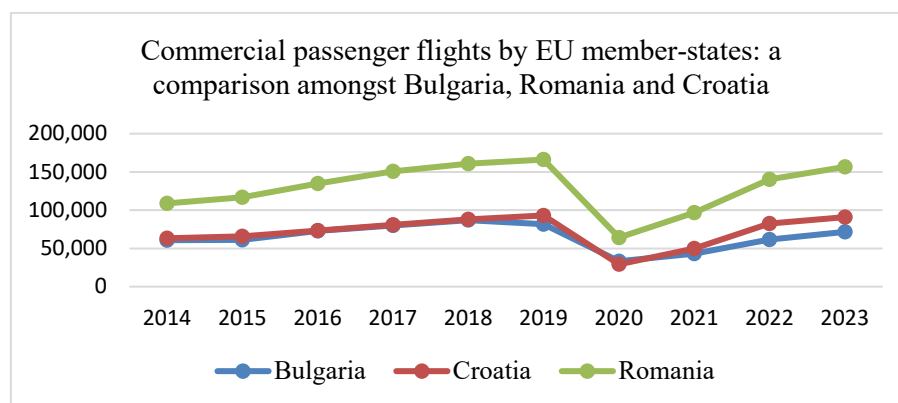
Source: National Statistical Institute of Bulgaria and calculations of the authors.

As one can see from the figure above for the indicator air transport passenger performance, a drop by 81% in 2020, compared to 2019 is reported, while in the GDP growth indicator, zero growth is observed for the same period. After 2021 a revival of the economy is observed and in 2022 an increase in the GDP of the country by 21% is realized, while the reported increase in the air transport performance is by 196% compared to the previous year. Like the development of the performance of air passenger operators, after 2021 the greenhouse gas emissions by aviation operators are continuously growing, especially the emissions of carbon

dioxides (by 55% in 2022 compared to 2020) and nitrogen oxides (by 30% in 2022 compared to 2020) (NSI b, 2024).

The „number of commercial passenger flights“ is an indicator that gives information about what is the demand elasticity of air passenger services by taking into consideration the environmental, economic and social characteristics of this transport mode.

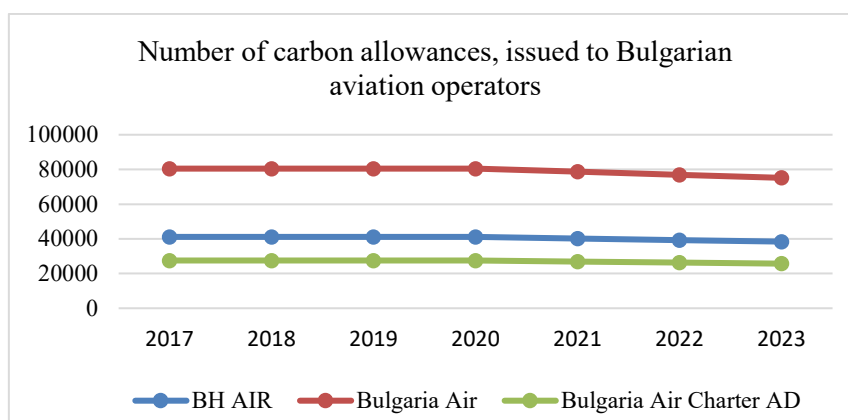
Figure 1. Commercial passenger flights by EU member-states: a comparison amongst Bulgaria, Romania and Croatia



Source: EUROSTAT, 2024 and calculations of the authors.

The largest number of commercial flights are carried by Romanian operators – 130,000 flights on average per year and the lowest number of commercial passenger flights is reported in Bulgaria – two times lower per year in comparison to Romania – 65,000. For Croatia, the average number of air passenger flights per annum is approximately 72,000. These data correspond to the market share of the aviation operators from these countries, as Romania takes the lion’s pie of 2.3%, Croatia – 1.3%, and Bulgaria – only 1%. This could be explained by the population incomes in these countries, which are higher than those in Bulgaria (for 2023 GDP per capita in Romania is 17,030 euros, and in Bulgaria it is 14,580 euros, which values are two times lower than the average for EU-27 – 37,930 euros). At the same time, the modal share of air transport in the total volume of CO₂ emissions of the transport sector is two times higher in Bulgaria in comparison to Romania (for 2022 for Bulgaria it is 5.7% and for Romania it is 2.2%) (EUROSTAT, 2024a).

Figure 3. Number of carbon allowances, issued to Bulgarian aviation operators



Source: Ministry of environment and waters of the Republic of Bulgaria, 2024.

The largest number of carbon allowances (75,161 for 2023) is issued to Bulgaria Air, which is the country's national air carrier and has a market share of almost 70% of the total number of passengers carried. The number of carbon allowances issued for the period 2017-2020 is constant. After 2021 the aviation companies have begun to purchase carbon allowances on the market as with each subsequent year, the operators have managed to decrease their number of carbon allowances purchased by step of 2.2% which is the requirement of the Directive 2008/101/EC. Despite the achieved drop of purchased carbon allowances by Bulgarian aviation operators, it is not enough to contribute to the increase of the competitiveness of Bulgarian aviation companies on the European market as the share of air transport companies is still 2 times higher compared to Romanian ones. This fact also influences negatively the development of the indicator GDP per capita, which is 14% lower than that of Romania.

Based on the analysis of the studied indicators, the authors use a multifactor linear regression. As a factor variable, the authors have chosen „carbon allowances issued“ and the dependent variables are air passenger kilometres performed, number of commercial flights performed and GDP per capita. As a result of the analysis, it is found that there is a statistically significant correlation between the variables „number of carbon allowances issued“ and „GDP per capita“. The indicator sig F (0.0000713007137623289) is significantly lower than α (0.05), and the correlation coefficient R square = 0.908016, which indicates that the relationship between both variables is very strong and inversely proportional. With the results obtained, it could be performed a linear equation:

$$Y_{GDP\ per\ capita} = 85514.77 - 0.66255_{carbon\ allowances\ issued} + \varepsilon \quad (1)$$

Interpreting the results achieved, when the carbon allowances, issued to the Bulgarian aviation operators drop by 1000 units per year, then the indicator GDP per capita will increase by 663 units for the same period.

4. Research Results and Conclusions

The purpose of the present publication was to examine the effects of Bulgarian air transport coverage by the EU ETS on the economic growth of the country and in this regard, the following key aspects of influence were identified:

First, in the mid-term run reducing the greenhouse gas emissions by air transport is of great importance for the country's competitive position in the European transport market – it still occupies a market share that is two times lower than that of Romanian and two times higher share in terms of greenhouse gas emissions. A positive trend is observed in terms of decarbonization of the airport and surface operations in Bulgaria in comparison to Romania and Croatia.

Second, Bulgaria is a member country of CORSIA, and its air transport is also covered by EU ETS, but the number of carbon allowances issued to the aviation operators drops only by the normative required pace of 2.2% per year, which values are obviously not enough, as the total amount of greenhouse gas emissions by air transport in 2022 increased by 27% compared to 2021.

Third, because of the regression analysis, it was proved that in the short run, the decrease in the number of carbon allowances by 1.3% per year will directly lead to an increase by 0.4% in the amount of GDP per capita.

In this regard, the national transport policy in the field of air transport in Bulgaria should be oriented towards the sector's digital and green transformation. Financial and government

support for small- and medium-sized enterprises (which are almost 60% of the licensed aviation operators) concerning their adaptation to the EU ETS, for technical innovation of the aircraft and mass usage of sustainable aviation fuels will be needed.

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РЕВИТАЛИЗАЦИЯ НА ТУРИЗМА В БЪЛГАРИЯ – ИКОНОМИЧЕСКИ И ФИНАНСОВИ АСПЕКТИ

REVITALIZATION OF TOURISM IN BULGARIA – ECONOMIC AND FINANCIAL ASPECTS

Резюме: Туристическият сектор в България запазва своя потенциал и перспектива за развитие. След негативното влияние на пандемията, секторът понесе последващи кризисни влияния, довели до отлив на туристи. В търсене на ревитализация на сектора в изследването са дискутирани резултати от анкетно проучване от 2024 г. Извеждат се оценки за конкурентните заплахи и предимствата на националния туристически продукт. Отчетени са финансово-икономическите аспекти както на макрониво, така и на ниво икономически оператори и клиенти в сектора на туризма. Обосновани са стратегии за ревитализация на туризма в България, които да включват четири компонента: национална стратегия за устойчиво развитие на туризма; инвестиции в човешки капитал; маркетинг, международна реклама и брандинг; стимулиране на вътрешния туризъм.

Ключови думи: ревитализация; туристически сектор; финанси; БВП

Abstract: The tourism sector in Bulgaria maintains its potential and perspective for development. After the negative impact of the pandemic, the sector suffered subsequent crisis influences, which led to an outflow of tourists. In search of a revitalization of the sector, the study discusses the results of a survey from 2024. Estimations of the competitive threats and advantages of the national tourism product are derived. The financial and economic aspects are reported both, at the macro level and at the level of economic operators and customers in the tourism sector. Strategies for the revitalization of tourism in Bulgaria have been justified, which should include four components: a national strategy for the sustainable development of tourism; investment in human capital; marketing, international advertising and branding; stimulation of domestic tourism.

Keywords: Revitalization; tourism sector; finance; GDP

JEL: L83; Z32

1. Увод

Туристическият сектор играе ключова роля в икономическото развитие на България. Той допринася значително за брутния вътрешен продукт и заетостта. През последното десетилетие (2013-2023) секторът преживя както периоди на възход, така и сериозни предизвикателства, най-значимото от които беше глобалната пандемия от COVID-19. Настоящото изследване има за цел да анализира икономическите и финансовите аспекти на ревитализацията на туризма в България, като се фокусира върху стратегиите за възстановяване и устойчиво развитие на сектора.

2. Състояние на проблема

С Решение № 65 от 2 февруари 2018 г. на МС е приета Актуализирана Национална стратегия за устойчиво развитие на туризма в Република България 2014-2030 г. Заедно с този основен стратегически документ е утвърден и План за действие. В този документ е дефинирана стратегическа визия за сектора „България: предпочитана дестинация за

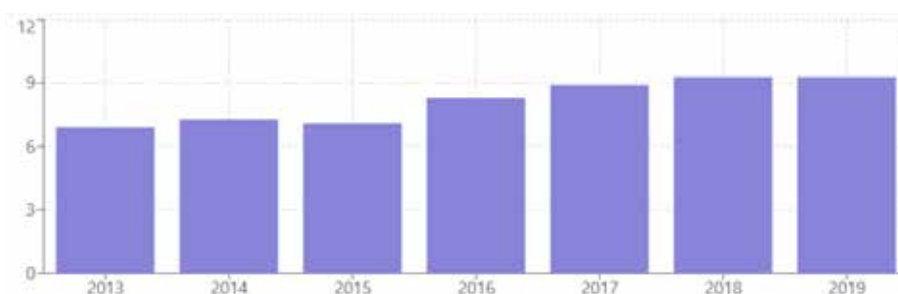
¹ Проф. д-р Андрей Захариев, ВУЗФ, докторант Ивелин Кичуков, Стопанска академия „Д. А. Ценов“, Свищов / Prof. Dr. Andrey Zahariev, VUZF University, PhD Student Ivelin Kichukov, D. A. Tsenov Academy of Economics, Svishtov: a.zahariev@uni-svishtov.com, D020220208@uni-svishtov.bg.

устойчив туризъм в четири сезона“. От четирите характеристики на България като туристическа дестинация последната има най-отчетлива икономическа обвързаност: „туризмът в България ще бъде сред водещите (структуроопределящи) сектори на националната икономика, който: използва ефективно ресурсите на страната за създаване на нарастващ национален доход и добре платена трудова заетост; създава ресурси и условия за опазване и защита на околната среда и културно-историческото наследство; създава ресурси и условия за социално благополучие на местните общности“.

2.1. Динамика на туристическите посещения

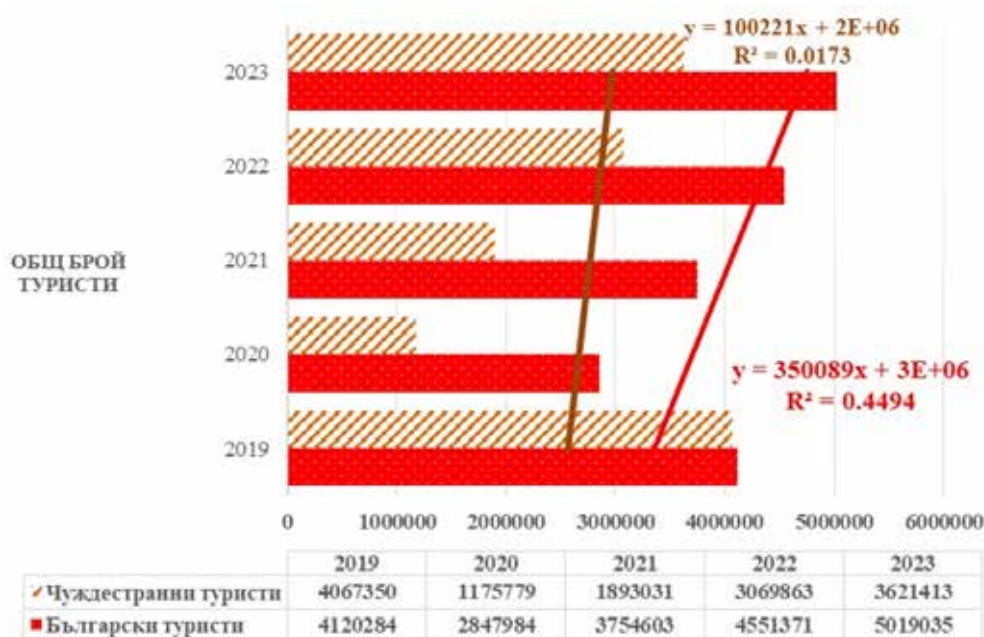
През периода 2013-2019 г. се наблюдава стабилен ръст на международните туристически посещения в България. Според данни на UNWTO (2020), броят на чуждестранните туристи е нараснал от 6.9 млн. през 2013 г. до 9.3 млн. през 2019 г., което представлява увеличение от приблизително 35% за този период.

Фигура 1. Динамика на международните туристически посещения в България преди пандемията COVID-19 (2013-2019)



Източник: НСИ.

Фигура 2. Брой регистрации на български и чуждестранни туристи в местата за настаняване с 10 и повече легла за периода 2019-2023 г. с изведени регресионни уравнения на тренда и коефициенти на детерминация



Източник: МТ, <https://bit.ly/4dk2IsZ>.

От данните за периода 2019-2023 г. (Фигура 2) се установява силният негативен ефект на пандемията върху заетостта с български и чуждестранни туристи в местата за настаняване с 10 и повече легла за периода. Динамиката на ранга от над 4.6 млн. туристи (общо български и чуждестранни) е знак за значителни пропуснати приходи за сектора на туризма. При чуждестранните туристи показателите сочат силен срив за пиковата за пандемията 2020 г. Изведените регресионни уравнения са с алфа коефициенти за българските туристи от 350 хил. и за чуждестранните туристи от 100 хил. Изводът е, че негативните ефекти от пандемията и последващата вторична криза с войната в Украйна и практическото спиране на потока от посещения от два големи източноевропейски пазара е компенсирано частично от българските туристи.

2.2. Икономически принос на туризма

Сектор „Туризм“ е основа за икономическо развитие на страни, където природните дадености позволяват привличане на международен поток от туристи както през лятото, така и през зимата. България определено е страна с туристически дадености и доброто съчетание на изградени с десетилетия курорти на черноморското крайбрежие и в планините дава възможности за развитие на туристически продукт с регионално и континентално значение. Изграждането на курорти изисква мащабни инвестиции и оборотни средства за поддръжка както на хотелските бази, така и на свързаната инфраструктура. За България секторът се определя като ключов компонент на икономиката. Според World Travel & Tourism Council (WTTC, 2020), прекият и косвеният принос от сектор „Туризм“ към БВП на България достига 10.8% през 2019 г.

2.3. Влияние на пандемията COVID-19

Пандемията от COVID-19 оказва безпрецедентно негативно влияние върху туристическия сектор в световен мащаб, включително и в България. Според данни на Националния статистически институт (2021), броят на чуждестранните туристи в България е намалял с 60.4% през 2020 г. в сравнение с базисната 2019 г. (което се визуализира и чрез Фигура 2).

3. Методология

Настоящото изследване използва комбинация от методи за анализ на туристическия сектор в България. Количественият анализ се базира на статистически данни от Националния статистически институт на България, Световната туристическа организация (UNWTO) и Евростат за периода 2013-2023 г. Качественият анализ включва преглед на научна литература, правителствени документи и експертни оценки. Изведени са резултати от проведено през лятото на 2024 г. анкетно проучване чрез бенчмарк секторни оператори с използване на оценки по Ликертовата скала. В научната литература (Lehmann, Hulbert, 1972) има различни виждания за броя отговори (Jacoby, Matell, 1971), които да бъдат включени в тази скала. Различните методики имат своите предимства и своите недостатъци (Hubert, Blalock, 1960). При използване на дихотомна Ликертова скала в диапазона от „1“ до „5“ (могат да се изведат оценки на респондентите чрез регрупиране на отговорите в позитивно рамо (отговори „4“ и „5“), негативно рамо (отговори „1“ и „2“) и неутрален център „отговор „3“). На база идентичната метричност на скалата имаме последваща възможност за извеждане корелограми (Zahariev, et al., 2023) и определяне на показатели в обхвата на дескриптивната статистика. За целите на

изследването през лятото на 2024 г. сред 174 респонденти е проведено анкетно проучване за установяване нагласите за стратегическа трансформация и ревитализация на туризма в България².

4. Резултати от изследването

4.1. Макроикономически ефекти от ревитализацията в туризма

Ревитализацията на туристическия сектор има потенциала да генерира значителни макроикономически ползи за България. Според изследване на Европейската комисия (2021), всяко увеличение с 1% на туристическите приходи може да доведе до ръст на БВП с 0.4% в страните от Югоизточна Европа. Всичко това обаче изисква адекватна държавна политика и действия от страна на ресорното министерство. 86.8% от анкетиранияте бенчмарк икономически оператори и клиенти в секторното проучване от лятото на 2024 г. не възприемат позитивно подкрепата от Министерство на туризма за сектора.

Фигура 3. Смятате ли, че Министерство на туризма адекватно и ефективно подкрепя туристическия сектор?



Източник: Резултати от анкетно проучване.

4.2. Повишена заетост и развитие на човешкия капитал

Туризмът е важен източник на заетост в България. Според WTTC (2020), секторът е осигурявал пряко 93 хил. работни места през 2019 г., което представлява 3.1% от общата заетост в страната. Ревитализацията на сектора ще играе ключова роля за възстановяването на тези работни места и създаването на нови възможности за заетост.

4.3. Подкрепа за регионалното развитие

Туризмът има потенциала да стимулира икономическото развитие в по-слабо развитите региони на България. Разнообразието от дестинации и видове туризъм намалява

² Анкетното проучване е с над 100 въпроса. Цялостният анализ на отговорите е включен в дисертационен труд на докторант Ивелин Кичуков на тема „Финансово-икономически анализ на стратегическата трансформация на туризма в България“ (със стартирала процедура по защита). В статията са изведени основни селектирани резултати.

регионалните икономически неравенства в страната. За България историческият, културният и събитийен туризъм имат значителен потенциал за развитие. В момента обаче се ползват едва 20% от даденостите при положение, че България заедно с Гърция и Италия е на трето място в Европа по исторически артефакти. Добра национална стратегия в сектора определено ще бъде от полза за разкриване на очевидния потенциал. Като позитивен пример тук може да посочим ролята на НПО сектора (вж. например Съвет по туризъм – Свищов с групата за исторически възстановки), включването на общинските стратегии за туризма в плановия процес на интегрираното развитие по Закона за регионалното развитие. Това обаче изисква секторът да стане приоритетен отрасъл за икономиката, което намира категорична подкрепа сред респондентите в анкетата.

Фигура 4. Оценете вашата подкрепа за твърдението, че държавата трябва да направи туризма приоритетен национален отрасъл на икономиката.



Източник: Резултати от анкетно проучване.

4.4. Инвестиции в туристическа инфраструктура

Ревитализацията на туристическия сектор изисква значителни инвестиции в инфраструктура. Според доклад на Световната банка (2019), България се нуждае от инвестиции в размер на приблизително 2 млрд. евро за модернизация на туристическата си инфраструктура в периода 2021-2027 г.

4.5. Достъп до финансиране

Осигуряването на достъп до финансиране за малките и средни предприятия (МСП) в туристическия сектор е ключово за ревитализацията. Европейската инвестиционна банка (2022) предлага специализирани финансови инструменти за подкрепа на туристическия бизнес, включително гаранционни схеми и нисколихвени заеми.

4.6. Публично-частни партньорства и подкрепа за кръговата икономика

Публично-частните партньорства (ПЧП) представляват ефективен механизъм за финансиране на големи туристически проекти. Успешните ПЧП в туристическия сектор могат да доведат до увеличаване на инвестициите в средносрочен план. Традиционните примери с концесионерите на плажовете, обаче, по-често е обект на критично обществено и медийно внимание, отколкото като успешен пример за следване и

развитие. Сектор ХоРеКа е един от основните генератори за захранване на веригите от базисни материали за последващо рециклиране.

Идеите за кръгова икономика, съчетани с прилагане на принципа „замърсителят плаща“, изцяло намират подкрепа от страна на респондентите (Roleders et al., 2022). Разделното събиране на отпадъци е част от модерния начин и визия на българските курорти (Angelov, Mihaylova, 2023), което се подкрепя от над 60% от респондентите в анкетата и превишава негативната скала в отношение от 3:1.

4.7. Адаптиране към дигитализацията и иновациите

Дигиталната трансформация представлява както предизвикателство, така и възможност за българския туристически сектор. Според проучване на Deloitte (2021), инвестициите в дигитални технологии могат да увеличат продуктивността в туристическия сектор с до 30% в рамките на 5 години.

4.8. Устойчивият туризъм в четири сезона – пожелание или реалност

Развитието на устойчив туризъм е ключово предизвикателство за България. Проучване на Европейската комисия (2022) показва, че 73% от европейските туристи предпочитат устойчиви туристически дестинации, което представлява значителна възможност за България да позиционира своя туристически продукт. Сезонният характер на приходите от туризъм е аксиоматичен. Твърдението се подкрепя от над 60% от респондентите и превишава отрицателните становища в пропорция от 4:1. Сезонният характер на приходите от туризъм показва, че идеята за всесезонен туристически продукт в националните стратегически документи си остава изцяло в сферата на пожеланията.

Фигура 5. По Ваши наблюдения оценявате ли като вярно твърдението, че приходите от туризъм на икономическите оператори в България са със сезонен характер?



Източник: Резултати от анкетно проучване.

4.9. Диверсификация на туристическия продукт

Диверсификацията на туристическия продукт е важна стратегия за намаляване на сезонността и повишаване на конкурентоспособността. Развитието на нишови форми на туризъм (например, културен, здравен, еко-туризъм) може да увеличи средния престой

на туристите с 2-3 дни. Това е особено важно с оглед на регионалната конкуренция и битка за привличане на туристи. Позитивната оценка за конкурентните предимства на българския туризъм спрямо останалите балкански държави намира подкрепа сред 73% от респондентите. Позитивното становище превишава негативното рамо на ликертовата скала в пропорция от 8:1.

5. Изводи

Стратегиите за ревитализация на туризма в България предлагаме да включват четири компонента: национална стратегия за устойчиво развитие на туризма; инвестиции в човешки капитал; маркетинг, международна реклама и брандинг; стимулиране на вътрешния туризъм. Ревитализацията на туристическия сектор в България представлява комплексно предизвикателство, изискващо координирани усилия от страна на правителството, бизнеса и академичните среди. Икономическите и финансовите аспекти на този процес са тясно свързани и взаимно зависими. Успешната ревитализация на туризма има потенциал да генерира значителни икономически ползи за България, включително увеличаване на БВП, създаване на работни места и стимулиране на регионалното развитие. Процесът изисква значителни инвестиции в инфраструктура, човешки капитал и иновации. Ключовите фактори за успеха на ревитализацията следва да включват мерки и действия в т.ч. разработване и прилагане на комплексна национална стратегия за устойчиво развитие на туризма; осигуряване на адекватно финансиране чрез комбинация от публични средства, частни инвестиции и иновативни финансови инструменти; инвестиции в дигитализация и иновации за повишаване на конкурентоспособността на сектора; фокус върху устойчивото развитие и диверсификацията на туристическия продукт; повишаване на квалификацията на работната сила в сектора.

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***ФИРМИТЕ В УСЛОВИЯТА НА
ЕВРОПЕЙСКАТА ИНТЕГРАЦИЯ***

ASSESSMENT OF THE BULGARIAN NON-FINANCIAL ENTERPRISES' PREPAREDNESS FOR SUCCESSFUL SUSTAINABILITY TRANSITION

Abstract: *The objective quantitative and qualitative assessment of positive and negative influences, stemming from the sustainable transition of the non-financial enterprises and respective legislation, can promote the effective governance of the process and can generate ideas for boosting successful transformation. This phenomenon is quite new and affects substantially the business environment. Evaluating its effects is an enormous task that requires a complex methodology for studying the preparedness of the enterprises in order to gather representative and valid data, which shall serve as a basis for elaborating and implementing policies for safeguarding the successful transition of the enterprises and the workers they employ. The article aims at suggesting a reliable evaluation model to be deployed to that end.*

Key words: *green transition; SMEs; evaluation model; sustainable transition; jobs*

JEL: *D83; J88; L22*

1. Introduction

The EU Taxonomy is a regulatory and navigational tool that provides a unified and broad classification system for sustainable economic activities. Primarily conceived to steer capital allocation by leveraging investors' growing demand for demonstrable sustainable investments, and reduce the risk of greenwashing in current market practices, the Taxonomy Regulation sets reporting obligations for large and listed companies within the EU (OJEU, 2014 and 2022). Thus, listed and non-listed micro enterprises, as well as non-listed small and medium-sized enterprises (SMEs), are excluded from the Taxonomy, but they are exposed to its trickle-down effects as part of value chains and when searching for funding. By 2023, almost 30% of SMEs have received an ESG reporting request in some form (Giannotti et al., 2024).

As the Taxonomy Regulation and the Green Deal legislative package have an evolving nature, this allows some time to study quantitative and qualitative aspects of their positive and negative influences, as to evaluate their effects. These new regulative factors change substantially the business environment, affect the effective governance of the process and define the conditions for successful transformation towards corporate sustainability. Their evaluation is an enormous task that requires the application of a complex methodology in order to study and assess the preparedness of non-financial enterprises by gathering, processing and analysing trustworthy and representative data. The paper aims to suggest a reliable evaluation model, that shall guarantee the collection of high-quality reliable information to serve as a basis for evidence-based business planning and for elaborating and implementing policies for safeguarding the successful transition of the enterprises and the workers they employ.

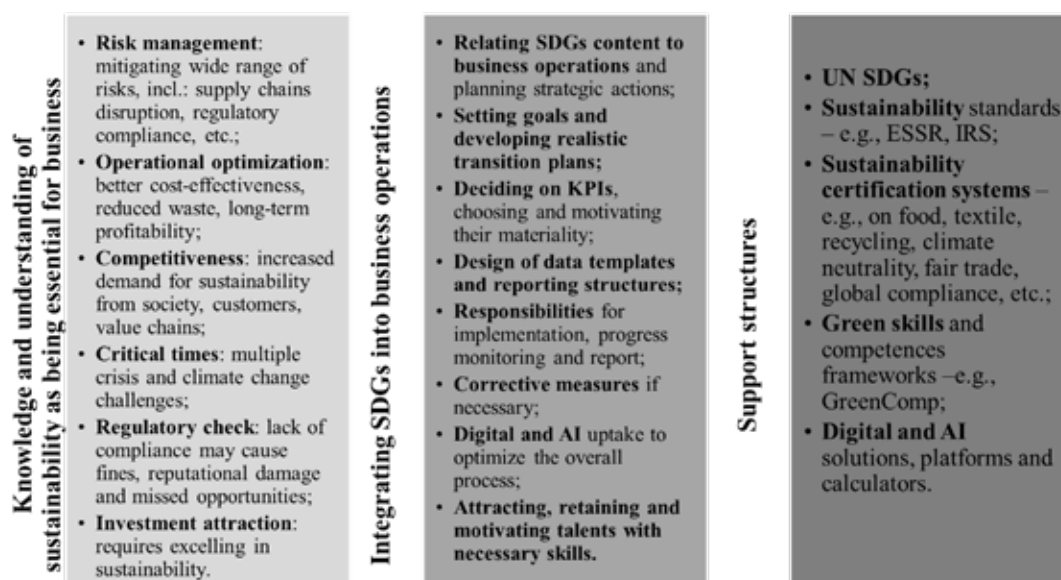
2. State of Play

The most important research challenge is to choose the building blocks of the evaluation model and study methods in such a manner, that the trustworthiness, reliability and representatives of

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the data collected are safeguarded (Tourangeau 2021; Louangrath, Sutanapong, 2018). Evaluating non-financial enterprises' preparedness for accomplishing a successful sustainability transition is a complex wide-scaled exercise that shall comprise many elements as to allow drawing a detailed picture (Figure 1). Hence, it requires a holistic approach to be applied, that must involve a combination of research methods in an optimal way that will allow gathering data that can serve as basis for contextual and quantitative description of this phenomenon, and for identification of relevant quantitative accumulations. For that purpose, its elements shall be systematically and precisely outlined and decomposed into tangible items that can be described by information units. Therefore, exhaustive classification criteria shall be selected to guide and structure the information gathering. This will allow monitoring, measuring and analysing further the advancement and the progress made towards net zero by applying a holistic evaluation model grasping all the economic, social, ecological, and governance aspects of the phenomenon.

Figure. 1. Elements for structuring the sustainable transition preparedness.



Source: Author's elaboration.

The main research challenge and respective key proposition is that the evaluation of the progress towards sustainable transformation of the non-financial enterprises and their potential to advance on it can be measured, if the starting point is thoroughly defined. Based on the author's desk research of different ESG disclosure systems and standards², the European Sustainability Reporting Standards' (ESRS) chapters seem to offer the most comprehensive, well-structured and future-proof classification criteria. Hence, the data gathering methodology shall cover the following elements, to generate an assessment if an enterprise has:

- elaborated ESG policy, presenting its approach and commitment to govern key ESG risks and opportunities;
- committed to any external CSR initiatives, e.g., Global Compact, SBTi, etc.;
- appointed a sustainable governance expert in charge of its ESG progress;

² On over 40 different ESG disclosure systems, as of 1997.

- additional costs for ESG compliance and if yes – how are they calculated, including financial, human, time and other resources;
- ranked the most important challenges it faces in delivering on ESG goals;
- made an evaluation of its compliance with the EU Taxonomy³ and the effect that it will have on its operations;
- planned investments to protect the environment and if yes in what amount;
- made efforts to increase the resource efficiency, e.g. recycling, substituting, etc.;
- experienced value chain changes because of ESG – e.g., suppliers change, new market penetration, etc.;
- identified specific risks or opportunities stemming from sustainable transition;
- committed to support the community above its business activities;
- organised ESG training for its staff;
- published its ESG/CSR report – if yes – separately or as a part of the annual report;
- monitored and reported its consumption of energy (in GWh, and renewable share) and water (m³), the waste disposed (t and % recycled), carbon footprint (tCO₂ emissions);
- diversified its primary energy sources (e.g., the mix between gas, coal, diesel, mazut, electricity), its water supply (water extraction from rivers/lakes, underground water, public water pipe) and what initiatives/plans it has if any for monitoring and decreasing its consumption and increasing its efficiency;
- elaborated standards/policies for health prevention and improvement of its workers;
- implemented human resources development policy;
- committed to participate in collective bargaining – on its own or as part of a branch or employers' organisation;
- developed a policy for promoting equality, diversity and social inclusion;
- adopted internal policies for combating and preventing corruption, grey practices and undeclared labour;
- adopted policy for its internal security provision – e.g., personal data protection, training its staff for handling and protecting sensitive information, etc.

The above elements draw the framework for the evaluation of the enterprises' preparedness to comply with the ESRS requirements. Having this in mind, the in-depth assessment and quantification of these elements will provide the basis for developing the questionnaire to collect primary data as a basis for quantifying and measuring the preparedness of the enterprises.

Human resources are key for accomplishing successfully the sustainable transition. Not only that they produce the products and deliver the services, but also they are a vital part of

³ The EU Taxonomy evaluated the sustainability of the enterprise's economic activities based on objective criteria, grouped around 6 ecological goals: Climate protection, Climate change adaptation, Sustainable use and protection of water and sea resources, Circular economy transition, Pollution prevention and control, and Protection and recovery of bio diversity and ecosystems. An economic activity is considered sustainable if it contributes substantially for delivering on the goals in the climate/eco domains and if it causes no significant harm on the other goals achievement. Also, respecting minimum social standards is required.

elaborating, implementing, monitoring and improving the transition plans. Therefore, their preparedness shall be subject of a special evaluation too. Because the sustainability transition is anchored on achieving climate neutrality, one principle approach to it is to assess the level of the green skills needed. The EC provides a tool to that end – GreenComp: The European sustainability competence framework (Bianchi et al., 2022) for that. Coupling it with the ESRS criteria allows highlighting the following items, defined as a level of competence of the staff to deliver on those goals, to be of critical importance:

- Sustainable transition accomplishment;
- Optimising energy consumption and green gas emissions;
- Preventing air, water and soil pollution;
- Biodiversity protection;
- Water consumption;
- Resource use, circular economy, waste management;
- Human resources – contractual agreements, health and safety working conditions; collective bargaining, training;
- Corruption, fines and penalties.

The combination of the non-financial enterprises' preparedness indicators derived on the basis of ESRS and the GreenComp-based evaluation set of skills and competencies allows the building of the matrix of empirical indicators, that later can be quantified by collecting primary data via quantitative research and distributing the relative values each of the indicators is given by the respondents.

3. Research Methods

Desk research offers important advantages in case narrowing down and better focusing the scope of the primary information gathering (Perez, 2017). Hence, the first building block of the research methodology shall be desk research, aimed at analysing the green transition impact on the non-financial enterprises' activities. It also can be applied as the main research method to help outline the best elements of the evaluation model to be used.

Qualitative research methods are discussed often in connection with quantitative methods and many studies highlight the complementarity and synergy between those two groups (Östlund et al., 2011; Adcock, Collier 2001; Duffy, Chenail, 2009). Qualitative appraisal aims at gathering participants' experiences, perceptions, and behavioural patterns so that they reveal reasoning, motivation and perceptions that then can be used to precise the methodology and the questionnaire for the quantitative research. A thorough analysis of the qualitative research methods, having in mind the huge number of the overall group of respondents – 461 819 non-financial enterprises (NSI, 2024) highlights the focus group discussion as being the best fit for the purpose instrument (Mishra, 2016) here.

Quantitative methods emphasize objective measurements and statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. The research design of the survey's structure and implementation affects its findings (Bloomfield, Fisher, 2019). Hence, the results of the qualitative research can help précising and optimising the scope and content of the questions to be asked, their type (closed, opened), give orientation for the scale

design (Park, 2016), etc. Therefore, in order to have sound quantitative data, the research design shall be based on the in-depth findings of qualitative research that shall serve as a guidance for structuring the questionnaire, deciding on what scales to be used, help encoding the answers.

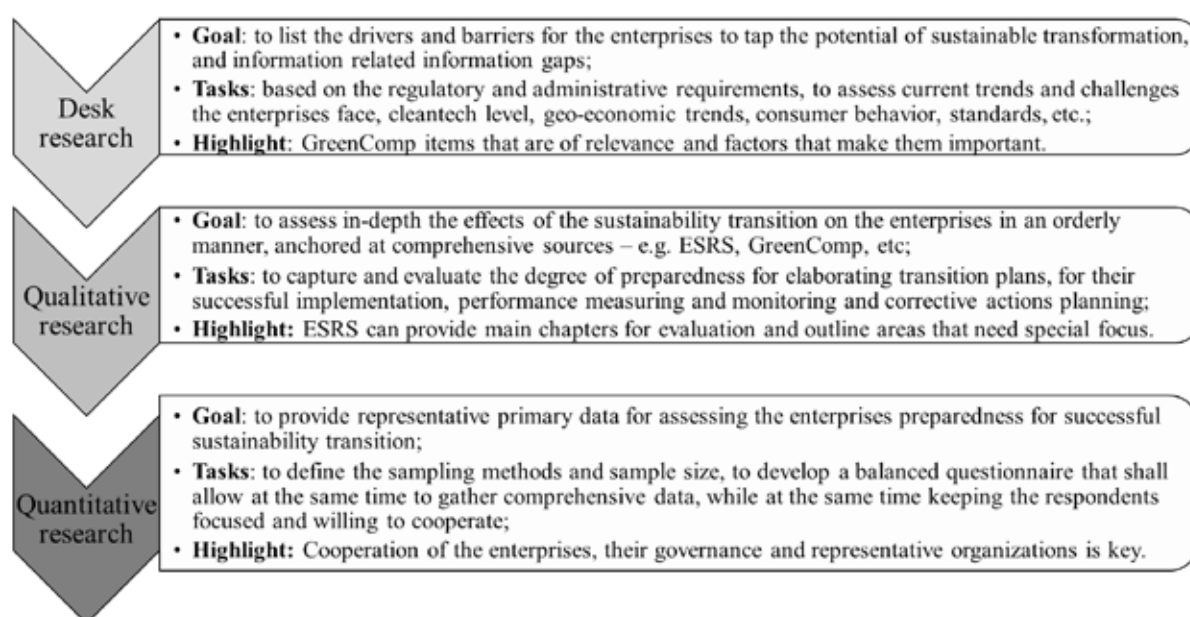
In light of the above, the most suitable research method appears to be the structured personal interview (Nor Rashidi et al., 2014). Because of the large number of respondents, the best sampling method appears to be nested stratified sampling (Mandal, et al). The strata are the sectors in which the non-financial enterprises are operating in and the nests are formed according to their size.

4. Evaluation Model

The evaluation model building blocks (Figure 2) form the foundation of a sound research methodology (Baker, 2000), as it creates synergies between the three groups of methods explored above, removing their shortcomings and highlighting their advantages, because:

- Desk research conducted as a starting point of the overall evaluation model is instrumental in creating a comprehensive framework of elements that shall be tackled later through quantitative research. It also helps to draw the contextual description of the observed phenomenon and outline its elements, helping separate those that will be better described in quantitative terms from those that need to be quantified;
- Qualitative research helps reveal the details about the phenomenon's nature, elements, and their relative perception by the respondents. Also serves as an inspiration for deciding on the context, scope and content of the quantitative research, and guides the decisions regarding sampling, formulation of the particular questions, choosing the right measuring scales and encoding the answers;
- Quantitative research then provides a detailed and comprehensive picture, drawn in a cost-effective manner, as the efforts are focused and well-thought on the basis of the information gathered in previous phases.

Figure 2. Evaluation model for assessing the non-financial enterprises' preparedness for a sustainable transition



Source: Author's elaboration.

5. Conclusion

Climate neutrality has no alternative, as we have only one planet to live on and we must protect it and help it recover. Driving the societal and economic change to net zero, however, is an endeavour that can be accelerated only if it is well understood by all the key players – businesses and citizens and if they are well aware of what role they must play in it, what is the time frame and what is at stake in case of failure. To deliver on these elements, a gap analysis between the intended result and the current state of play is needed in order to assess preparedness. The wide scope of the task makes it only possible to be accomplished if a sound, complex and holistic methodology is deployed. The right mix of research methods – as described above can form the building blocks of such an evaluation model, where each step is précised and further developed on the basis of the previous as to guarantee reliable and representative data, collected in a cost-efficient manner. The right combination of desk research, followed by a qualitative (focus group) and then quantitative (structured personal interview with nested stratified sampling) research can provide trustworthy data for this complex general sample, comprising all non-financial enterprises in Bulgaria.

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BULGARIAN ENTREPRENEURSHIP IN THE CONTEXT OF EUROPEAN INTEGRATION

Abstract: *The article examines the scientific and practical problem of Bulgarian entrepreneurship in the context of European integration. The aim of the research is to describe, analyse and interpret some of the most important aspects of Bulgarian entrepreneurship in the context of European integration. The achieved results are expressed in indicating the positive and negative effects for Bulgarian entrepreneurship from the accession of Bulgaria to the European Union in 2007.*

Keywords: *Bulgarian entrepreneurship; entrepreneurship, European integration; European Union*

JEL: L26; N14

1. Introduction

The scientific and practical problem of Bulgarian entrepreneurship in the context of European integration acquires an important and topical importance these days. The membership of the Republic of Bulgaria in the European Union (EU) became a fact on January 1, 2007, and the related economic integration presents Bulgarian entrepreneurship with very complex issues to resolve. It can be argued that never in the history of the Third Bulgarian State (from 1878 to the present day) has Bulgarian entrepreneurship encountered such powerful economic integration processes, which combine both positive and negative effects.

The relationship between Bulgarian entrepreneurship and the country's membership in the EU can be examined within several key aspects: economic integration, access to markets, financing, regulations and increasing competitiveness.

2. State of the Problem

The problem of Bulgarian entrepreneurship in the context of European integration has been studied, but this, in our opinion, has been done to an insufficient extent. In this case, we first cite the words of the authoritative researcher of Bulgarian and global entrepreneurship Kiril Todorov, who writes verbatim:

„Bulgaria's accession to the EU is an important historical event that creates great challenges, but also significant development opportunities for the Bulgarian society and economy. This applies to a very large extent to Bulgarian entrepreneurship – the engine of both the transition to a market economy and our development as a member of the EU. Hence the search for the right answer to the question: how ready are our companies, entrepreneurs and managers to meet the challenges and use the opportunities for development that open up when we enter the 500 million EU market?“ (Todorov, 2006, p. 77).

Kiril Todorov's reasoning gives us reason to conclude that he understood the importance of the accession of Bulgaria and the EU already in 2006 and characterized it as a historical event. He also interprets Bulgarian entrepreneurship as a driver of the transition to a market economy, which by 2024 can be considered already proven.

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Davidkov (2022) accurately notes that modern entrepreneurship in Bulgaria is the combined result of accumulations and qualitative changes over the past two centuries. They can be traced both through the analysis of relatively distinct periods in the economic, political and cultural development of Bulgaria, and above all by tracing the process of evolution and changes in modern Bulgarian entrepreneurship – mainly in the period after 1989. According to Davidkov (2022), it is indisputable that Bulgaria's membership in the EU is associated with several positive effects on business and entrepreneurial activity.

Simeonova-Ganeva (2022) also focuses her research interest on entrepreneurship after Bulgaria's accession to the EU and in this regard cites statistical data:

„Bulgaria became a member of the EU in 2007. From then until today, Bulgaria's economy has passed through all phases of the business cycle. During the first years of membership, there was an economic upswing, which in 2009 was halted by the financial crisis, with a subsequent moderate economic revival observed from 2014 until the onset of the economic crisis because of COVID-19 in 2020. The fluctuations in the macroeconomic environment have an impact on entrepreneurial activity and the development of small businesses (consisting of micro- and small enterprises in which there are no more than fifty employees). For the period 2008-2018, there was a decrease in the number of small enterprises by 6.8% and a growth in the number of micro-enterprises by 29.2%“ (Simeonova-Ganeva, 2022, p. 240).

Kolarov (2022) emphasizes that the changes in the period of the so-called transition (after 1989) also have their important social cost, incl., and on entrepreneurial activity, noting the following:

„Like most Eastern European societies, the Bulgarian one perceives the end of the totalitarian regime with more optimism than fears for the future. The presented in a simplified way the social structure of the so-called socialist society educates most Bulgarian citizens in egalitarian attitudes, the majority of which do not find support in the reality that developed in the period after 1990. The dynamics in the economy, expressed mainly in a negative direction in the 90s, quickly melt away optimism and expectations for prosperity (public and private) in the foreseeable future“ (Kolarov, 2022, p. 228).

3. Methodology

Bulgarian entrepreneurship considered in the context of European integration is an overly extensive and heterogeneous scientific problem, which undoubtedly has its own methodological features.

The aim of our research is to describe, analyse and interpret some of the most important aspects of Bulgarian entrepreneurship in the context of European integration, as far as this is possible in the short volume of our publication.

The subject of research are the specific dimensions of Bulgarian entrepreneurship, which are manifested within the framework of European integration.

The methods we use to realize the set research goal are a descriptive approach, a historical approach and a systemic-structural approach. The basic methods of analysis and synthesis, as well as induction and deduction, are also used. All the listed methods are applicable to the subject of the study and the research objective.

4. Research Results

Now (2024), the economic framework of the EU, within whose extensive borders Bulgarian entrepreneurship is located, is relatively unfavourable. This is evident from the current report published on September 9, 2024 „The Future of European Competitiveness“ (also known as Mario Draghi’s report), in which we read:

„Across different metrics, a wide gap in GDP has opened up between the EU and the US, driven mainly by a more pronounced slowdown in productivity growth in Europe. Europe’s households have paid the price in foregone living standards. On a per capita basis, real disposable income has grown almost twice as much in the US as in the EU since 2000.

...The previous global paradigm is fading. The era of rapid world trade growth looks to have passed, with EU companies facing both greater competition from abroad and lower access to overseas markets. Europe has abruptly lost its most important supplier of energy, Russia. All the while, geopolitical stability is waning, and our dependencies have turned out to be vulnerabilities.

Technological change is accelerating rapidly. Europe largely missed out on the digital revolution led by the internet and the productivity gains it brought: in fact, the productivity gap between the EU and the US is largely explained by the tech sector. The EU is weak in the emerging technologies that will drive future growth. Only four of the world’s top 50 tech companies are European“ (The future of European competitiveness, 2024, p. 1).

It is clear from the report that the EU is losing economic competition with the USA and China for the time being and is facing very serious challenges unprecedented in its history, which if it does not manage to overcome, it will probably become a secondary economic actor internationally. All this affects European entrepreneurship as well as Bulgarian entrepreneurship. Synthesized, we can give the pessimistic opinion that now and in the future the common European framework for doing business will probably not favour the development of Bulgarian entrepreneurship. This is mainly determined by the fact that the Bulgarian economy is open and highly dependent on what is happening in the European Union. If the whole (the European Union) is not developing in the best way, the part (Bulgaria) cannot prosper.

Bulgaria’s membership in the EU has a significant impact on Bulgarian entrepreneurship, causing both positive and negative effects. Joining the common European market offers many opportunities, but also brings difficulties related to increased competition and regulatory requirements. Let’s describe and analyse the positive and negative effects.

Positive effects for Bulgarian entrepreneurship

1. *Access to the common European market.* EU membership gives Bulgarian entrepreneurs access to a market with over 450 million consumers. This significantly expands the opportunities for trade and business expansion without the need to overcome customs and tariff barriers. The free movement of goods, services, capital and labour facilitates the entry of Bulgarian companies into the European market (Tsanov, 2024). The opinion can be maintained that for the scale of Bulgaria and the possibilities of its entrepreneurs, the European market is almost limitless and purely hypothetically, Bulgarian entrepreneurs can operate only within the EU without the need to develop activities in other parts of the world.
2. *Funding and support programs.* Bulgaria has access to various EU funds and programs aimed at supporting entrepreneurship and small and medium-sized enterprises. The Horizon

Europe program (2021-2027), for example, provides grants, subsidies and opportunities for the EU to continue to be a world leader in research and innovation. Horizon Europe provides the means necessary to achieve this goal. The European Structural and Investment Funds also contribute to the financing of infrastructure and innovation that support the development of entrepreneurs.

3. *Improved regulatory framework.* EU membership promotes the implementation of a more transparent and predictable business environment. Legal harmonization with European standards provides Bulgarian entrepreneurs with a safer business environment, especially in terms of protection of intellectual property rights, consumer rights and labour rights. The regulatory framework in the EU lays the foundations for a level playing field in the competitive environment and protects entrepreneurs (especially small ones) from unfair competition.
4. *Opportunities for international partnerships.* The EU promotes cooperation between entrepreneurs from different countries by creating different business networks and innovation incubators. This gives Bulgarian entrepreneurs the opportunity to create strategic partnerships and exchange knowledge, skills and contacts with international partners.
5. *Improvement of infrastructure and technology.* European funds support the development of infrastructure and technology in Bulgaria, which creates better conditions for business development. Investments in digitization, transport and logistics help to improve the competitiveness of Bulgarian companies driven by entrepreneurs.

Negative effects for Bulgarian entrepreneurship

1. *Increased competition.* One of the main disadvantages of EU membership for Bulgarian entrepreneurs is increased competition from well-established companies from other member states. The more developed economies of Western Europe can offer products and services of higher quality or at lower prices, which makes it difficult for Bulgarian enterprises, especially small and medium ones, to compete effectively. Often, Bulgarian entrepreneurs cannot resist the competitive pressure from the EU and go bankrupt.
2. *Bureaucracy and regulatory requirements.* Although the EU offers a more stable regulatory framework, the multitude of rules and regulations can prove to be a burden for small and newly established Bulgarian enterprises. The complexity of administrative procedures and compliance requirements often make it difficult for smaller businesses to adapt, especially in sectors requiring innovation or specialized licenses. Often, Bulgarian entrepreneurs do not have the administrative capacity to deal with the bureaucracy and numerous requirements and therefore do not comply with them or give up entrepreneurial activity altogether.
3. *Unequal distribution of the benefits of financing.* Despite the availability of numerous support funds and programs, not all Bulgarian entrepreneurs have access to them due to complex procedures or lack of sufficient information. Smaller and less developed regions in Bulgaria sometimes experience strong difficulties in absorbing European funds, which leads to inequalities in business development in different areas of the country. Bulgarian entrepreneurs, as a rule, cannot lobby well at the European level and in this regard become uncompetitive.
4. *Dependence on the European economy.* The Bulgarian economy is becoming more and more dependent on the state of the European economy. In cases of economic crises in the EU, Bulgarian entrepreneurs can be severely affected and even mass bankruptcies follow. The

global financial crisis of 2008 and the subsequent debt crisis in the Eurozone, for example, had a serious impact on demand and investment in Bulgaria.

5. *Labour leakage*. The free movement of labour in the EU allows many qualified Bulgarians to seek better job opportunities in other member states. This can lead to a shortage of highly skilled personnel, making it difficult for local entrepreneurs to find workers, talent and grow their businesses. The lack of labour force (both in quantity and quality) emerged as a problem above the problems for Bulgarian entrepreneurship at the beginning of the 21st century, and its solution is not visible on the horizon, and the situation is likely to worsen even more.

5. Conclusions

After we have described, analysed and interpreted the problem of Bulgarian entrepreneurship in the context of European integration, we can draw the relevant conclusions.

First, Bulgarian entrepreneurship after Bulgaria's accession to the EU in 2007 has been studied from a scientific perspective, but the research is incomplete, without detail and fragmentary. There is a lack of systematic, detailed and relevant statistical data relating to Bulgarian entrepreneurship.

Second, Bulgarian entrepreneurship has played a significant role in the development of the Bulgarian economy, after the country's accession to the European Union. In this case, there is a problem related to the exact measurement of the contribution of Bulgarian entrepreneurship to the overall economic development of Bulgaria after 2007.

Third, Bulgarian entrepreneurship is very strongly dependent on the general economic condition of the EU. If the business cycle in the EU shows growth and Bulgarian entrepreneurship shows growth, if the business cycle in the EU demonstrates a decline, then Bulgarian entrepreneurship also shows a decline.

Fourth, Bulgaria's membership in the EU has both positive and negative effects on Bulgarian entrepreneurship. It is very difficult to say which effects predominate – positive or negative. Bulgaria's membership in the EU provides numerous opportunities for the development of entrepreneurship, facilitating access to international markets, financing and partnerships. However, Bulgarian entrepreneurs face several difficulties (some insurmountable), including increased competition and complex bureaucratic requirements.

Fifth, to take full advantage of the benefits of EU membership, Bulgarian entrepreneurs must be flexible, innovative and well-informed about the opportunities that the EU offers.

Sixth, in the future Bulgarian entrepreneurs will face enormous difficulties caused by many factors. A major unfavourable factor is the fact that the EU will be overtaken by the USA and China (perhaps also by India by 2060) in the global economic competition, and Bulgarian entrepreneurship, being highly dependent on the overall economy of the EU, will suffer reciprocal losses.

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UNASKED QUESTIONS ABOUT BUSINESS CORRUPTION

Abstract: Policies to limit corruption require the availability of correct information about the state and dynamics of this phenomenon that is parasitic on the economy. By building and comparing data on business corruption from the World Bank – Worldwide Governance Indicators, Enterprise Surveys and Flash Eurobarometer research, a discrepancy in the trends and state of business corruption is found. Against the background of perceptions of a high level of business corruption in the country, in recent years entrepreneurs have successfully adapted to work in such an environment and do not see it as a significant limitation to development. A high level of business corruption has been found in the private sector, which escapes the gaze of researchers. Conclusions and suggestions for improving the design of empirical studies dealing with corruption are made.

Keywords: business corruption; empirical data; comparisons; Bulgaria

JEL: D73; L51

1. Introduction

Corruption is a cancer of the market economy. It „kills“ fair competition, leads to an unjustified increase in transaction costs by placing an unregulated tax on business, and ultimately results in a suboptimal allocation of resources (Ganchev et al., 2023). Products and services provided in highly corrupt environments are unreliable, of low quality, often unsafe for consumers to use, have a short life cycle, and require high repair and maintenance costs (Tanzi, 1998). In extremely scandalous cases, such products and services may not even exist, but only reported to have been implemented.

Beyond the purely economic aspect, corruption corrodes the healthy entrepreneurial environment from within, breaks the „rules of the game“ and creates substitute non-market principles. Such are, for example: „To succeed, you have to pay yourself“; „Laws are a door in the field“, „It is not important what products and services you provide, what is important is knowing who you have to pay“; „For you to be well, I must be well“, „Here it is“.

Corruption is a way of keeping business in subjection because market distribution is disrupted by administrative interventions that disrupt market order. Such an economic base is an extremely favourable environment for the imposition of oligarchic-type political regimes. Once political control over business is established, it is very difficult to remove it.

There is probably no worse situation for social and economic development than the combination of corrupt politicians and corrupt business. Getting out of such an impasse is a significant and complex research and practical task.

This study does not aim to present the results of a large-scale study and proposals for complex solutions to overcome corruption in Bulgaria. It has more modest aims, namely, to bring to the fore discussion usually unaddressed, intentionally or not, questions about corruption that should be publicly discussed and, if deemed important, attempted to be resolved and accounted for the formation of anti-corruption policies. These are the questions about the ways and credibility of measuring business corruption and how the obtained results should be interpreted.

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2. State of Play of the Problem

Corruption as a complex, multi-layered and dynamic phenomenon is defined in different ways. One of the most frequently cited definitions is from Transparency International, which states: „We define corruption as the abuse of entrusted power for private gain.“ (Transparency International, 2024). This definition is also shared by the Basel Institute on Governance (2024).

In the Oxford dictionary corruption is defined as: „dishonest or fraudulent conduct by those in power, typically involving bribery“. A similar definition may be found in the Cambridge dictionary: „illegal, bad, or dishonest behaviour, especially by people in positions of power“.

Corruption takes many forms. The most frequently mentioned of them are bribery, embezzlement, nepotism, extortion, kickbacks, money laundering, fraud, and conflicts of interest. The more complete list also includes grease payments, graft, trading of information, trading in influence, gifts and hospitality, patronage and cronyism.

Other authors (Morris, 2011) distinguish by the criterion of the institutional location and function – political corruption, bureaucratic corruption; according to the direction of influence – bribery and extortion, according to the size and frequency of the transaction – grand corruption and petty corruption).

The Basel Institute on Governance launched the concept of green corruption, which includes illegal wildlife trade, forest crimes, illegal mining and other environmental crimes.

Obviously, such a variety of forms can hardly be grasped and meaningfully extracted from empirical studies, which creates problems in the scope and recognition of the concept. For the purposes of this analysis, the focus is on corruption in enterprises, known as business or corporate corruption.

3. Research Methodology

The research methodology adopted is based on the results of the main surveys of business corruption in the country, which are conducted by reputable agencies, verified and released on behalf of prestigious institutions and have a long history.

Responding to these requirements are two World Bank projects – Worldwide Governance Indicators (World Bank, 2024b) and Enterprise Survey (World Bank, 2024a). To these projects should be added the results on corruption, which are disseminated through Eurobarometer publications of the EC (Eurobarometer, 2007-2024).

The Worldwide Governance Indicators (WGI) contains six dimensions of governance – one of them is Control of Corruption. It is defined as „the extent to which power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests“. Like the Transparency International index, this index is built on the basis of other indices. Information on the control of corruption index for Bulgaria is available in the WGI database for the period from 1996 to 2022. From 1996 to 2001, this information is available once every two years, and then annually.

Another source of information is the Enterprise Survey of the World Bank. This project contains nationally representative firm-level surveys with top managers, that provide insight into many business environment topics. Corruption is examined through responses to percent of firms identifying corruption as a major or very severe constraint and percent of firms choosing corruption as their biggest obstacle. Bulgaria has been included in the Enterprise Survey since 2007. Results for the country are available for five years – 2007, 2009, 2013, 2019 and 2023.

The third source used is the Flash Eurobarometer. One of the special topics that falls into the focus of the Flash Eurobarometer is Corruption. For Bulgaria, data on business corruption are available for six years from 2013 to 2024.

The results obtained from these studies on business corruption are arranged chronologically, after which a comparison is made between them. In this way, the obtained results were tested. The hypothesis that has been questioned is whether the different empirical studies of business corruption establish the same or similar trends in its state and development. If differences in results are found, the reasons should be sought and established, including examining the sampling methods and instrumentation used in these empirical studies.

4. Research Results

First, we will pay attention to the long-term state and trends of business corruption. If we use the longest statistical series compiled from WGI data it can be found that for the period from 1996 to 2022. Corruption Control Index status of 45 in 1996. becomes 50 in 2022 (Figure 1). That's an improvement of 5 or just over 10%. Obviously, for a period of 26 years, this change is not enough.

Figure 1. Control of Corruption Index in Bulgaria



Source: Compiled by the author from data from The Worldwide Governance Indicators.

Another interesting finding is that changes in this index have a wavelike development. Four periods of index improvement followed by its decline can be deduced. The first period is from 1996 until 2008. The second covers the time from 2008 until 2013. The third period is the shortest – from 2013 until 2015. The fourth period is from 2016 until 2020. Then comes a period of new improvement, which probably represents the fifth consecutive cycle in the dynamics of the index. After the first wave, all other peaks do not reach the level of the first wave, but fluctuate at a lower level between 48 and 51 points.

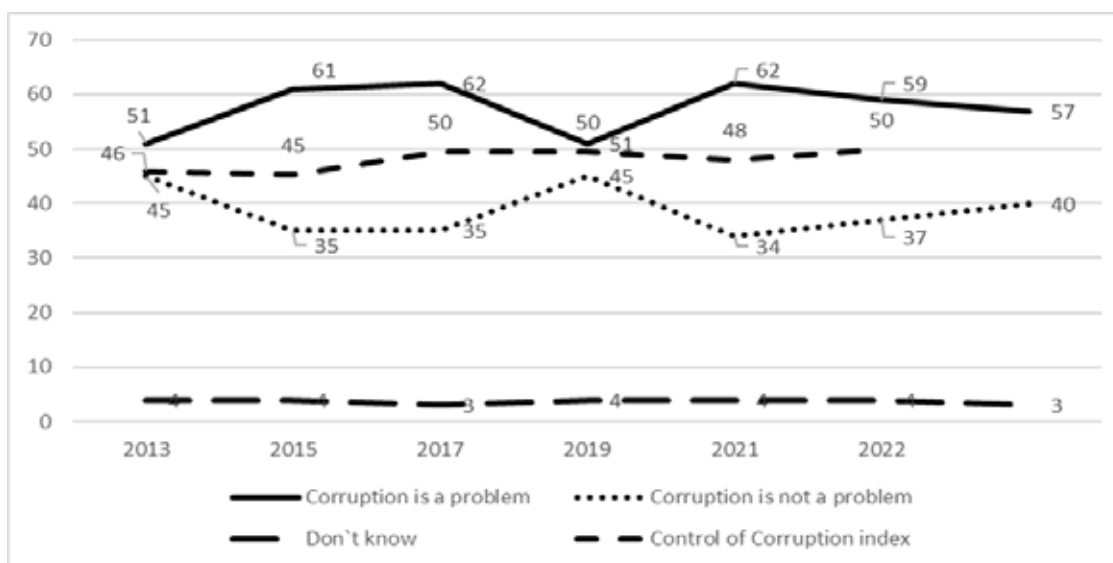
The aggregated results of Eurobarometer's business corruption surveys are presented in Figure 2. They are for a shorter period from 2013 to 2024. These studies pose two dichotomous questions about corruption. Businessmen's answers to the question that corruption is a problem

and vice versa do not draw parallel lines, except for 3 years. These years are 2015-2017 and 2022. This means that in most cases – four out of seven – there is a strong polarization of business responses to how much corruption is a problem for them. The opposite was observed in three of the seven years of the study.

Similar to the WGI data, a cyclical development is observed here. From 2015 to 2019, an improvement in the state of corruption can be found, which is followed by a serious decline in 2020. After that, a new wave of improvement begins.

To facilitate the comparison between the two databases, the line representing the dynamics of the corruption control indicator is imposed in Figure 3. This line should be compared with the line representing answers to the question: Corruption is not a problem.

Figure 4. Comparison between corruption indices



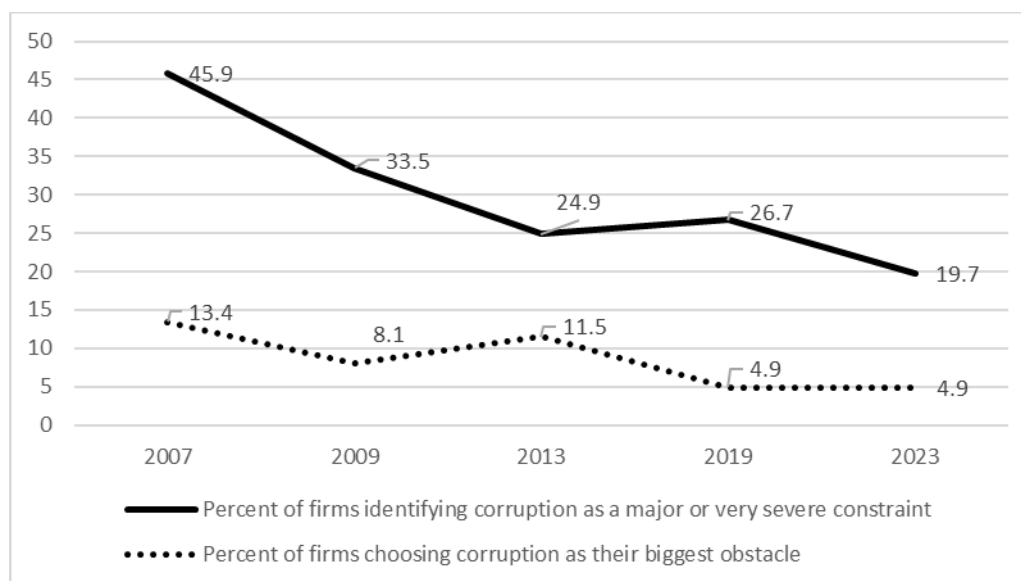
Source: Compiled by the author based on data from the Worldwide Governance Indicators and Eurobarometer – Bulgaria.

The dynamics of the two lines, with the exception of two years – 2013 and 2019, differ significantly. As a whole, the corruption control index has higher values. Except for the two years with close values, the difference between the two lines is 10-15 points from the maximum value of about 50, which is a significant deviation.

Stronger specificity and measurement of the impact of corruption on business is obtained by answering the questions to what extent corruption represents a serious limitation and the highest barrier for entrepreneurs. Information on this is provided by Eurobarometer (Figure 3).

In contrast to the commented data, a definite conclusion can be drawn here that there is a significant improvement during the analysed period. Responses to the question to what extent corruption is a serious constraint drop from nearly 46 to below 20 at the beginning and end of the period. A similar development is also observed in the answers to the question, of to what extent corruption represents the most important obstacle to business. Responses to this question fell from 13.4 to 4.9 in 2007 and 2023 respectively. Against the backdrop of maintaining the level of control of corruption in 2007-2022 (Figure 1), businesses manage to overcome this problem and did not find it as serious limitation to its development.

Figure 5. Corruption as a limitation for a firm's development



Source: Compiled by author from Enterprise Survey data.

The most widely used channel for the development of corruption is the public procurement system (Keremidchiev, 2015; Pashev, 2011). Therefore, the answers to the question about the presence of corruption in public procurement are of particular research interest (Figure 4). These Eurobarometer data are compared with the answers to the question of how widespread corruption is in the country. In 2015-2024, about 90% of businesses, with little hesitation, believe that corruption was widespread.

When the question is raised whether corruption has prevented companies from winning public contracts in the last three years, the picture seriously changes. Between 2015 and 2023, 55-60% of companies give a positive answer to this question. There is a strong polarization between opinions on this issue in 2019 and 2022, when they are almost equally divided. In the remaining years, except for 2024, between 26 and 37% of companies say that corruption did not prevent them from winning a public contract.

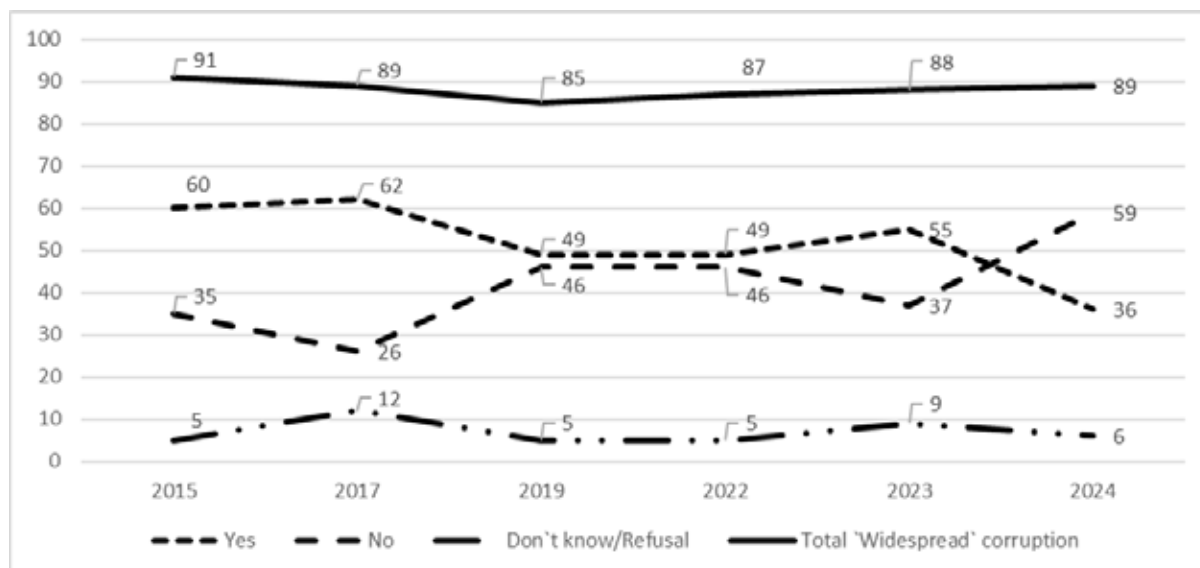
In 2024, a fundamental change occurs. Only 36% of companies give a positive answer, while 59% of them are not affected by corruption in public procurement. This dynamic is inexplicable from the point of view of the public procurement system. No significant changes have been made to it in recent years. Indeed, in 2023 and 2024, changes were made to the law on public procurement, but they did not affect the essence of the system (Narodno Sabranie, 2016). A more reasonable explanation of this phenomenon can be found in the research toolkit used. Until 2023, all companies answered the question about the presence of corruption in public procurement. In 2024, a filter will be introduced and only companies that have participated in public procurement in the last three years will answer this question.

This substantial change shows that businessmen are yielding to public suggestions and that these influence their responses, which are clearly not based on lived experience. So sociologists must carefully assess how much respondents have personal experience and how much their responses are influenced by societal prejudices.

Another interesting conclusion that can be drawn from these data is about the level of corruption in the private sector. If it is assumed that corruption in the public sector is realized through public procurement, then the difference with the data on widespread corruption represents the

amount of corruption in the private sector. This is a high level of 30-40% of the responses, which indicates the extent of this phenomenon in the private sector. Equated as a share of the spread of corruption, it turns out that 33% of it is realized in the private sector. Unlike the public sector, the corporation in the private sector is not given any attention either in national strategy documents or by business associations, research and other organizations. This should change because the two sectors interact and there is probably a spillover of corrupt practices from one sector to the other and vice versa.

Figure 6. Spread of corruption and corruption in public procurement



Note. Answers to the questions: 1. In the last three years, do you think that corruption has prevented you or your company from winning a public tender or a public procurement contract? (%); 2. How widespread do you think the problem of corruption is in Bulgaria? (%)

Source: Compiled by the author based on data from Eurobarometer – Bulgaria.

5. Conclusions

As a conclusion from the presented study, the following conclusions can be drawn:

- Measurements of business corruption are meaningful only if they provide correct results about the state and dynamics of this phenomenon. The established discrepancies in the data of the analysed sources of information indicate the existence of serious problems in the organization of the preparation and conduct of the empirical studies. They should be analysed and removed.
- It can be recommended that regular comparisons be made between different corruption surveys to identify early discrepancies and take corrective measures. It is not normal to rely only on the results of foreign research when forming national policy. The state should have a program of public opinion research on development-critical topics, on which information is constantly collected.
- Businessmen, like all other respondents, succumb to the influence of public prejudices. This should be taken into account when preparing empirical studies. It is especially important to select respondents who have personal lived experience and not rely on the opinion of their colleagues and partners.

- Contrary to the prevailing public opinion about the extent of corruption, business has found an answer to it so that it does not have a significant impact on the corporate sector.
- Last but not least, the research raised the question of corruption in the private sector, which is neither investigated nor attacked. The results show that its dimensions are not small and this harmful phenomenon should be analysed and measures should be prescribed for its treatment.

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IMPACT OF GLOBAL VALUE CHAINS ON THE INNOVATION POTENTIAL OF BULGARIAN ENTERPRISES

Abstract: For enterprises in less economically developed European countries, participation in global value chains is an opportunity to build innovation capacity. The innovation capacity depends on factors such as the resilience of the chains, collaboration between entities, barriers to entry into the chain, risks of shocks and unexpected events. The article provides data from a Delphi study on the main benefits and risks to the innovation potential of Bulgarian enterprises from participation in global value chains. Outlining them can help future mitigation through appropriate policies and strategies for sustainable innovation. The results are from a project, financed by the National Science Fund with No KII-06-H55/8.

Keywords: global value chains; innovation; Delphi-method

JEL: O30; O12; F61; F20

1. Introduction

Although innovation is a key to maintaining the competitiveness of the European Union (EU) the EU market „is not sufficiently conducive to innovation“ (Innovation Policy, EC, 2024). Global value chains (GVCs) serve as a link to geographically dispersed European production activities. They reduce production costs, increase productivity, employment and economic growth, improve innovation potential, and support the diffusion of human capacity, technology and knowledge (Gereffi, Fernandez, 2016). COVID-19 and the war in Ukraine raised serious discussions regarding the future of GVCs. At the EU level emphasis is placed on reducing the risks of shocks along the chains in the EU by taking measures to „promote the transition to more localized supply chains“ (Communication from the EC, 2020). Different kinds of microeconomic and macroeconomic issues and their direct or indirect impact on the GVCs are discussed among Bulgarian scientists as well (Keremidchiev, Rukova, 2012; Chobanova et al, 2013; Panushev, 2020; Tasev and Nestorov, 2017; Branzova and Dimitrova, 2023; Kirova, 2023). Still, to a lesser extent, questions about the impact of GVCs on the innovation potential of enterprises in Bulgaria are studied. The main research problem in the article are risks and opportunities from participation in GVCs as a factor for developing firms' innovation capacity. Outlining the most important ones could help further analysis in the field and focus the managerial and governmental policies and strategies on overcoming those risks by supporting the innovativeness of enterprises in the chains. The study aims to determine the impacts (in terms of benefits and risks) on developing the Bulgarian company's innovation potential from participation in GVCs. The main research hypothesis is that GVCs positively impact the firm's innovation potential, growth and competitiveness. At the same time, it hides significant risks in terms of creating dependence and pressure from the leading companies in the chain to the innovative Bulgarian suppliers. In the long run, it can reduce the added value of the final product and put the innovation at risk. The study presents results from broader research presented and discussed at various conferences (Georgieva, V.D., 2024)².

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2. Current State of the Problem

Participation in GVCs supports access to different regional expertise, overcoming the limitations of local sources of knowledge and competencies (Scalera et al., 2018). It enables companies to remain competitive and innovate while adapting to changing market conditions and customer requirements (Tolbert, Zucker, 1983). Geographically dispersed innovation activities create opportunities for enterprises performing low-value-added tasks to tap into international research and innovation centres and clusters. This can help diversify in-house knowledge pools and speed up the absorption of know-how from foreign sources (Cano-Kollmann et al., 2016). Suppliers can receive support from other enterprises like assistance to optimize the quality management system or skills training (De Marchi et al., 2018). The geographical division of innovation activities along the chain does not always have a positive effect on the innovation capacity of enterprises and does not automatically lead to economic growth and competitive advantages (Pisano, Shih, 2012). The know-how may be specific to the region or the country of origin, making its transfer difficult and ineffective (Jensen, Szulanski, 2004). During crises, such geographic fragmentation increases the complexity of firm operations due to the dependence of innovation activities on other suppliers. This can lead to limitations in the decision-making process (Scalera et al., 2018), delays in production and feedback collection between non-innovative and innovative stages in the value chain (Pisano, Shih, 2012). Wanting to protect their intellectual property enterprises could refuse to share knowledge, resources, and technology. The closure of international borders during crises limits the mobility of researchers and reduces cooperation and the exchange of knowledge and technology between GVCs suppliers (Kano, Oh, 2020). Hence, some experts predict diversification of GVCs (Strange, 2020), returning production to the countries of origin (Arriola et al., 2020), and regionalization. These scenarios can lead to the weakening of the chains, reduction of added value and innovation capacity. The diversity of risks and the possible new ones require effective approaches, tools and policies for sustainable GVCs management.

3. Research Methodology and Survey Results

A Delphi survey is conducted in three rounds between April 2023 and August 2023. A questionnaire of 15 questions divided into three main sections is developed and initially tested through a pilot survey. Experts from academia, public and business sectors, who study the issues of GVCs or work in companies involved in such chains are invited to participate. In the first round of the survey, twenty-three experts participated (response rate – 46%) while in the remaining two rounds – 18 experts each. A threshold for achieving agreement is set when 75% or more experts respond that they strongly agree or rather agree with a given statement. The surveyed participants state that GVCs: (1) Enable knowledge and resource sharing, increasing business efficiency and competitiveness. (2) Create synergy between different sectors in regional economies, leading to economic growth and sustainable development. (3) Create an important economic environment for innovation and competitiveness. (4) Connect the production processes and the supply of goods and services from multiple suppliers. (5) GVCs are a modern approach to creating capital gains for business owners, with significant technological, financial and environmental impacts. The experts' statements mainly focus on the positive effects on the business viewing GVCs as a factor for economic growth, sustainability, innovation potential, and competitiveness. The concept of GVCs can be further expanded as: *The global value chain is a set of joint production processes, stages and activities, at least two of which are carried out by enterprises in different countries, to create a product*

or service with high-added value. The production process covers value-adding stages along the chain, from the product idea generation to production, sales, distribution and after-sales customer service. It improves the company's productivity, competitiveness, sustainability, personnel qualification, diffusion of knowledge and technology, access to new markets and partners' networks, and building innovation potential.

Table 1. Impact of GVCs on the company's innovation potential, second round of the Delphi survey (%)

Statements	Strongly agree	Rather agree	Neither agree, nor disagree	Rather disagree	Totally disagree	Level of agreement
Enables access to good practices, innovation, experience and obtaining know-how useful for both the enterprise and the region	44	50	0	6	0	94
Stimulates the development of competitive products/services	39	50	6	6	0	89
Stimulate the development of the company's innovative potential through the need to solve non-traditional problems in the interaction with foreign partners	39	50	6	0	6	89
Enables technology import/transfer, innovation and knowledge exchange, and sharing good practices	44	44	11	0	0	89
Promotes R&D, innovation capacity building and the development of an innovative culture	28	56	11	0	6	83
Development and improvement of the staff qualification	28	56	11	6	0	83
Reveals new horizons and new partnerships	33	50	11	6	0	83
Firms can conquer new markets for innovation launch	28	56	17	0	0	83
Companies can implement new and/or more efficient technological processes, and infrastructure improvements	33	50	6	11	0	83
Increase financial resources and increase the quality of human capital	33	44	11	11	0	78
Promotes the business policy of companies in managing innovation and finding market niches	44	33	11	11	0	78
Provides access to customers at various stages of new product development	44	33	22	0	0	78
Encourages the updating of internal policies and compliance with additional standards to improve the value added along the chain	5	28	22	0	0	78

Source: own calculations, N=18.

During the first round of the Delphi survey, 66 statements on the impact of GVCs on the innovativeness of enterprises were collected (the summarized opinions are shown in Table 1). The participants unanimously agreed on all statements in the second round. During the third round, the experts select the three most important to them. They unite around the opinions that the GVCs support enterprises' access to good practices and innovation, and provide an opportunity for companies to gain experience and obtain know-how (indicated by 9 experts). Additionally, they support the statement that participation in GVCs stimulates the development

of innovation potential based on the need to solve non-traditional problems during interaction with foreign partners (indicated by 8 experts). For a third of the experts, GVCs influence the enterprises' innovation potential by „stimulating the provision of competitive products/services to the end customers“. It also enables „entry into new markets, creation of new partnerships, transfer of new technologies, and exchange of innovation, knowledge and good practices“. The impacts indicated by the experts are mostly positive and can be considered general (unrelated to shocks in the chain).

Complex value-added chains offer significant risks and challenges to innovative enterprises. During the first round of the Delphi study, the experts identified 60 risks for the Bulgarian companies' innovation potential. The summarized risks are:

- Data leakage, theft of intellectual property and business ideas.
- Legal risk, complex regulations and adverse regulatory changes.
- Wage inequality between researchers from different countries.
- Dependence on other companies, putting the success of the innovation into doubt.
- Inability to absorb new knowledge and technologies due to a lack of qualified employees.
- Limiting freedom of decision-making.
- Untimely development of innovation and preemption by competitors.
- Disruption of R&D processes or contraction of chains.
- Reluctance to share knowledge and technology along the chain.
- Insufficient supply of raw materials needed for the innovation process.
- GVCs can be affected by customs rules and tariffs, changing the prices of goods or delaying deliveries.
- Risk of insufficient information and coordination.
- Reputational risk or ethical issues.
- Many participants in the GVCs is a prerequisite to more issues during crises.
- Impossibility of tracking all actors along the chain and holding them accountable for the innovation process.

At the end of the survey, the experts united that the main risk from participation in GVCs is that the suppliers performing low value-added tasks could become dependent on the enterprises performing high value-added tasks, which can lead to losing suppliers' identity. The limitation of freedom of decision-making and risks related to the regulatory framework are also among the opinions with the highest level of agreement around which the participants unite.

4. Conclusions

GVCs offer benefits for Bulgarian enterprises, mainly access to new knowledge and partners, diffusion of good practices, technologies and know-how. This increases the company's competitiveness and is a factor for economic growth. The transfer of knowledge and interaction with foreign partners is associated with geographical, cultural and pay gap risks. The survey results show that the main threats are losing the company's identity, creating dependence on other suppliers and limiting the freedom of decision-making. Those risks are mostly

management-organizational by nature. The profile of innovative Bulgarian enterprises is essentially micro and SMEs. Their participation in GVCs depends on the internal and external environment conditions to achieve maximum independence from the restrictions of the other suppliers in the network. The new digital tools, including „big data“ and the introduction of artificial intelligence offer many opportunities but also challenges for the GVCs. Digital platforms support the flexible transfer of knowledge, the development of innovations and the creation of new forms of globally added value. However, complex regulations, data leakage, and intellectual property theft are also among the barriers to the innovative development of enterprises. This requires proactive measures to reduce the potential intellectual data theft and cyber-attacks.

The idea of bringing the production back to its country of origin leads to new potential risks. COVID-19 and the war in Ukraine have shown weaknesses in GVCs which should be seen as an opportunity to improve chains' sustainability. The barriers to the innovation potential of enterprises from unexpected events can be overcome through appropriate strategies, policies, laws, and effective management. Existing regional and national networks with an ongoing process of diffusion of knowledge, R&D and technology, as well as trust and effective cooperation among the partners, should be strengthened. The company's management of innovation activities along the chains should focus on systematic risk management of the individual stages of the innovation process. This requires improving the educational system to provide the necessary knowledge and skills for operating in GVCs environment and a regulatory framework stimulating activities along the chains. Enterprises can also implement appropriate strategies for maintaining greater liquidity, proactive risk management and support innovation cooperation during crises.

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SOCIOECONOMIC ANTHROPOLOGY OF INNOVATIVE ATTITUDES IN THE CONTEXT OF ECONOMIC-HISTORICAL DETERMINATION

Abstract: *The main idea is to identify and analyze the development of innovative attitudes and innovation potential within business structures, depending on the specifics of national and organizational cultures in the economic-historical development of the country. In the context of an increasingly global world and the inevitable influence of cultural diversity in multicultural societies, there are even more opportunities to study the dynamics of contemporary cultural indices of societies and their correlation with the economic development of these societies from a historical perspective. This fact has sparked our interest in studying this process in the Bulgarian context. Such a discourse implies identifying the significance, role, and influence of very specific economic-historical processes in Bulgaria, where not only universal economic formations and phenomena are shaped but also a specific cultural code is generated.*

Keywords: *socioeconomic anthropology; economic-historical determinism; innovation; innovative attitudes; national-cultural dimensions; organizational cultural dimensions*

JEL: *O10; Z1; Z10*

1. Introduction

The complex and deep cultural profile of a nation or a specific institutional entity is distinctly shaped by its economic-historical development, which also includes cultural development. The innovation potential, whose development depends on innovative attitudes, represents an existing but still unrealized opportunity for an organization to implement innovative transformations aimed at maintaining and enhancing its competitiveness. As highlighted by the authors (Milanova, Naydenova, 2024), the specifics of the two concepts – culture and innovation – place them in a peculiar kind of contradiction: on the one hand, culture is conservative, expressing traditional views and perceptions that have accumulated over the years, while on the other hand, innovation represents change, i.e. it is a carrier of transformation through new developments.

In the context of the emerging global society and the inevitable influence of cultural diversity in multicultural societies, the need to study the dynamics of contemporary cultural indices and their relation to the economic-historical development of these societies becomes even more pressing. Recent updates in the values of the main indices of national cultural dimensions reveal significant and equally intriguing dynamics in certain cultures (Hofstede Insights / The Culture Factor Group). This fact has prompted our interest in exploring the relationship between cultural and innovative status in the Bulgarian context.

According to the 2023 edition of the Global Innovation Index (GII), published by the World Intellectual Property Organization (WIPO), Bulgaria ranks 38th.

This global index, which includes a dataset of 80 indicators from various sources – private, international, and public – covers 132 economies and reveals global innovation trends (Global Innovation Index, 2023). Bulgaria's overall score places it behind countries such as Hungary and Latvia but ahead of Turkey, India, and Poland, for example. It is interesting that with such a result; despite not being categorized among the „exemplary“ countries, Bulgaria has reason to be defined as an innovative economy, as a country developing in an innovative direction. It

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is evident that there is a clear aspiration for innovation, which is now being synchronized with the corresponding capacity.

2. State of the Problem. Literature Review

In numerous studies by the authors' team, as well as other scholars, it has been confirmed that in the new economy of recent decades, a trend has emerged and been reproduced, where national cultural dimensions tend to dominate organizational ones, which in principle, often blocks the creation of a new organizational cultural profile within economic units. Sometimes, rather turbulent processes arise in the establishment of what is claimed to be new and a novel civilizational horizon. In this sense, the authors consider it necessary and appropriate to trace the economic-historical development of the country, particularly in the period after the Liberation, to assess how reasonable it is to speak of economic-historical determinism in the construction and manifestation of the national economic genotype.

The idea is to identify and analyze the role of this development, specific to Bulgaria, with all its perturbations, tensions, and search for a balance between rationality and irrationality, to explain the peculiar attitude toward the new, which sometimes leads to irrational imitations and, in other cases, to their entirely reasonable adaptation.

The characteristics of the organizational environment, as well as the combination and interaction of these characteristics, defined as a contemporary business ecosystem (Moore, 1993), influence an organization's decision to realize its innovation potential, i.e., to innovate. Increasingly, the idea is gaining ground that the genesis and spread of innovations depend on the density of cognitive and market relationships between individuals, organizations, and institutions at both the micro- and macroeconomic levels. It is highlighted as necessary to examine the nature of these relationships, which include collaboration, competition, power, and more (The Genesis of Innovation, 2008). In other words, fundamental research in this area focuses on the economic and social origins of innovation.

The very emphasis on the role and importance of cognitive and economic connections in the evaluation and analysis of innovations within enterprises, within national economies, and internationally gives us reason to postulate that the specifics of organizational culture, regardless of whether and to what extent it is influenced by national culture and its particular dimensions, is a determining and prerequisite factor for realizing the available innovation potential.

It is a fact that the social system is an extremely complex and multilayered phenomenon, constantly in motion, involving various components. Our view is that the specific national cultural matrix, regardless of its level of dynamism, should be considered as a separate factor. For this reason, we also examine the manifestation of the socioeconomic anthropology of the innovation process.

One of the main conclusions of the present study, focused on the Bulgarian context, is that the desire for renewal appears to be weaker than the growing sense of anxiety and unease. This demonstrates a specific „solidarity“ against uncertainty, indeterminacy, and life's unpredictability, which is also the basis for further deviations in the imposition of different cultural models. The very focus on morality rather than business ethics creates additional self-imposed barriers to innovative attitudes and the evident „protective“ defensive model of social and economic behaviour proves to be very resilient.

Defining the parameters of business formation and its transmission over the decades is not only an economic but also a cultural issue – a general trend toward civilizational distortion and, consequently, the marginalization of new economic structures seeking self-affirmation.

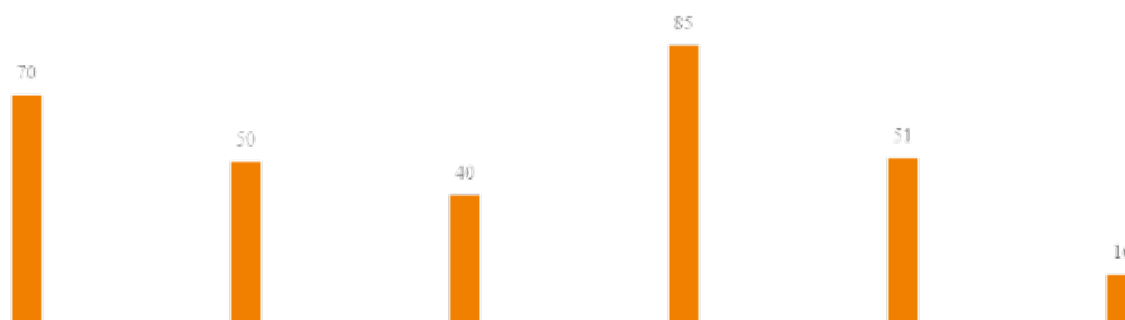
The evolution of Bulgaria's economic-historical development reproduces established attitudes rather than radically modifying and adapting them to the modern world. Immediately after the Liberation, the big question arose whether it was reasonable, and if so, to what extent, to imitate the Western model – what the benefits would be and what limitations such imitation should have, as it could turn into a caricature or prove inefficient and ineffective. In fact, this dilemma remains relevant today.

At a later stage, despite the adoption of laws and imposed organizational norms, the conclusion emerged that the Oriental atmosphere did not favour the adoption of Western economic values and entrepreneurial culture. Nevertheless, a more precise identification of the concept of an Oriental environment is needed, and why and to what extent it finds space for expression and reproduction.

Value encapsulations became even more pronounced, and other interesting value-cultural characteristics were added in the following decades. During socialism, specific accumulations emerged in Bulgarian economic culture – directly dependent on the imposed ideological characteristics of the totalitarian system. Despite the continuing shortages in the economy, a specific format of cultural attitude, „primitive quantitative hedonism“, manifested itself, which largely distorted the rational entrepreneurial thinking of Bulgarians (Kolev, 2017). Parallel to this, at a certain point, the privileges and tolerance toward certain members of society motivated the ordinary Bulgarians to reconsider their goals, and from there, their own standard of living. However, this process logically faced egalitarian consciousness – a fear of the uncertain, the new, and the different, which logically led to observed deviations in the positive trends in economic culture. And the conflict between the industrial and agrarian mentality continues, reflecting on the economic thinking and behaviour of individuals.

In modern terms, it is evident that our national economic culture is undeniably strongly influenced by these historical layers, their encapsulation, and potential dynamic processes, despite the presumed conservative nature of the culture.

Figure 1. Indices of the main national cultural dimensions for Bulgaria



Where:

Power Distance = 70

Individualism = 50

Masculinity (Motivation towards Achievement and Success) = 40

Uncertainty Avoidance = 85

Long Term Orientation = 51

Indulgence = 16

Source: <https://www.hofstede-insights.com/country-comparison>

Fundamental studies and contributions in the field of social anthropology, which have now been quite relevantly integrated into economic and social analyses in our country, have made it possible to profile national and organizational cultures at different moments and stages of development. The overall picture of the Bulgarian national cultural matrix today can be identified and analyzed in the following way.

It can be seen that due to some considerations, the team continuing Hofstede's work has changed the name of the masculinity or femininity dimension of cultures.

3. Methodology

In this article, which presents a conceptualization of the idea of identifying the organizational culture of each business unit to draw expectations about realizing its innovation potential, we build upon the methodology developed by G. Hofstede and his team for researching cultural and particularly economic-cultural matrices, focusing on the four main indicators. Similar to our previous research on the study and analysis of innovation potential in the field of Bulgarian education, we rely on this methodology. The considerations are that with long-term orientation, also known as Confucian dynamism, which is classically defined according to the specific cultural differences between East and West, certain ambiguous manifestations and even deviations can be observed in our own and other cultural models that differ from Eastern ones.

The sixth dimension is still quite new, and in this particular case, due to a lack of relevant dynamics, it is not taken into account. Regarding indulgence versus restraint, the indicator value remains at 16 points, which determines the degree to which people attempt to control their desires and impulses based on the way they were raised. In this case, we analyze the degree of self-control, and we refer to relatively weak control with a positive attitude and satisfaction, as well as relatively strong control with the suppression of the aforementioned categories, characterizing the culture as restrained. Clearly, the value of the indicator identifies Bulgaria's culture as a highly restrained one in this respect. Societies with low scores in this dimension tend to show higher degrees of pessimism.

When examining the dynamics of the indices, we base our comparisons on compilations with the development of other economies (Hofstede et al., 2010; Hofstede Insights), as well as specific studies conducted by our research team in this direction (Milanova, Naydenova, 2024). In this context, the main points that are analysed and conceptualized can be formulated as follows:

- Innovations are accepted if they are promoted by certain authorities within a specific economic structure.
- The innovation potential could be expanded and developed if it is tolerated by the authority that has established itself and is perceived as indisputable within the respective socio-economic community.
- The specificity of innovation potential when there are signals of deviations in team collaboration.
- The specificity of innovation potential in the presence of collectivist attitudes, which generally generate greater exclusivity, i.e., the easy labelling of certain individuals as outsiders due to their divergence from the “in-group” matrix further nurtures the characteristic defensive cultural profile in our context.
- The specificity of innovation potential, particularly with regard to personal responsibility within collectivist attitudes.

The conceptualization of these issues will be tested through a longitudinal study in specific business units. The longitudinal method is primarily interpreted as an organizational method applicable in medicine, psychology, and sociology. Examples of longitudinal studies in our country can be found in areas such as the social consequences of ethnic differences, Bulgarian folk psychology, the socio-economic impacts of tourism development, and more. The authors' team has decided to experiment once again and conduct a longitudinal study to test the conceptualizations mentioned in the article.

4. Results and Conclusions

At present, the first stage of the study is being finalized, and the identification of certain trends will likely be confirmed during the second stage. The key interpretations can be summarized as follows:

- Innovative attitudes are filtered through the values of the in-group, without these values necessarily being aligned with contemporary ones.
- Innovation potential is shaped by the moral and ideological perceptions and imperatives of the in-group.
- Innovative attitudes depend on the degree of ambition and persistence and can be strongly influenced by social factors in certain cultures. In some cases, the social narrative serves as an excuse for not making greater efforts, but it is certainly prominent in softer cultures.
- The threshold of tolerable stress in different cultures defines the limit of realization for innovative attitudes and, accordingly, innovation potential. Innovations themselves are of interest in cultures that do not exhibit an unnatural discomfort in stepping outside the comfort zone when undertaking innovative projects that involve unpredictable risks.
- The combination of specific national cultural dimensions (cultural constellations) is an important factor in the operational development of innovation potential.

Examining these interactions offers insights into the extent to which the behaviour and culture of Bulgarian managers meet the requirements for carrying out successful innovation activities. The formation of a relevant business culture and the implementation of corresponding policies create comparative competitive advantages, aligned with the particularities of cultural identity.

The sociocultural discourse is an exceptionally accurate and scientifically grounded approach for objectively analysing and impartially understanding the deviations in the realization of the innovation potential of each business unit and/or organization. This approach proves the universality of the framework. Since the perspective on the relationship between innovation potential and a specific organizational culture implies a fundamentally different approach from those typically applied in orthodox economic theory, its nature and manifestations require more specific attention. The focus is placed within the strict scientific framework of socioeconomic anthropology and its operational relevance to management science.

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FEATURES OF THE EXPORT ACTIVITY OF BULGARIAN COMPANIES

Abstract: *The specifics of the firms that carry out a country's foreign trade activities are an important indicator of their degree of internationalization. This study aims to reveal the role of different categories of Bulgarian firms, according to their size, in the realization of Bulgarian exports. The result is that the tendency of most Bulgarian foreign trade companies to carry out transactions mainly in other EU countries rather than in third countries is noticeable. It is also noteworthy that, in general, the share of exports in the turnover of enterprises increases as the number of employees increases. Overall, the degree of internationalization of Bulgarian firms is at a good level, but still below the EU average.*

Keywords: *international trade; export; firms*

JEL: *F13; F14; F19*

1. Introduction

The specifics of the firms that carry out a country's foreign trade activities are an important indicator of their degree of internationalization. This study aims to reveal the role of different categories of Bulgarian firms, according to their size, in the realization of Bulgarian exports. The analysis focuses on the latest data published by Eurostat on the foreign trade activity of firms – the data for 2022.

2. Status of the Problem

The foreign trade activity of Bulgarian companies can be characterized by indicators of the participation of different groups of companies in the realization of exports from the country. Eurostat collects information on firms' exports according to the number of persons employed in them. The indicators for firms are divided into up to 10 persons, from 10 to 49 persons, from 20 to 249 persons, and over 250 persons.

3. Methodology / Methodological Approaches

The tools of descriptive statistics were used to characterize the peculiarities of Bulgarian export enterprises. Comparisons of the main characteristics of the enterprises are made with the different category firms in Bulgaria and the same categories of enterprises – on average for the whole European Union.

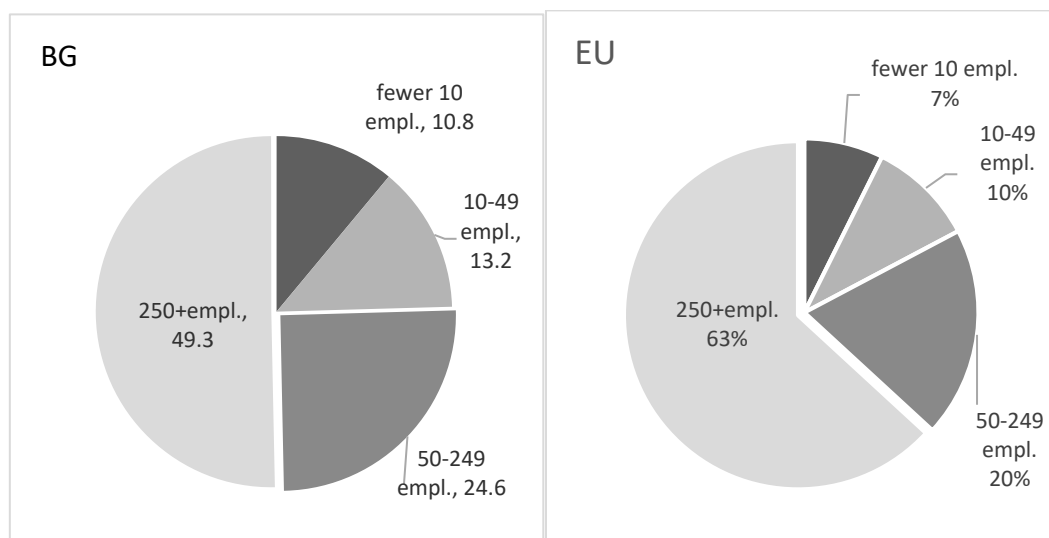
4. Results of the Study

Firstly, the participation of different-sized firms in the realization of exports from Bulgaria is examined. Figure 1 shows that on average for the EU27, firms with up to 10 employees account for nearly 8% of exports. Larger firms, those with 10-49 employees, logically account for a

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larger share – 10%. Medium-sized firms with 50 to 249 employees export 20% of goods. Firms with over 250 employees account for 60%. Comparatively speaking, Bulgarian firms have a different share in Bulgarian exports.

Figure 1. Share in export volume, by number of employees – Bulgaria, 2022

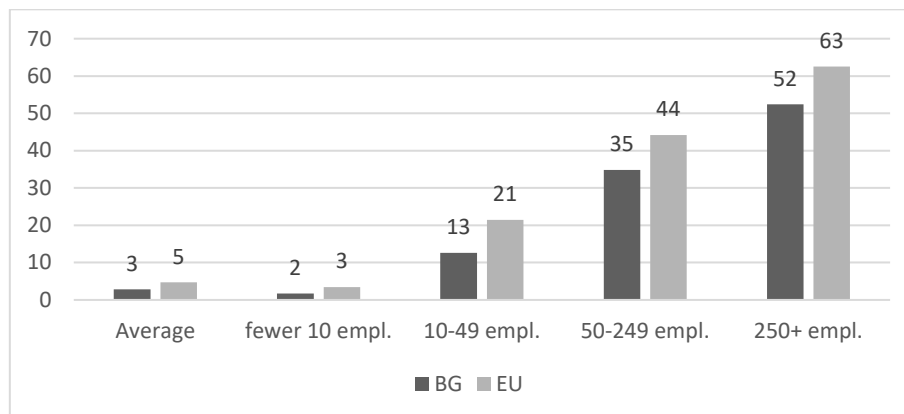


Source: Eurostat.

The structure of firms exporting from Bulgaria differs significantly from the structure of firms exporting on average across the EU. Bulgarian micro-enterprises (up to 10 employees) account for over 10% of the country's exports, compared to an EU average of 7%. For firms with 10-49 employees, the shares are 13% for Bulgaria and 10 for the EU average, respectively. Firms with 50-249 employees account for nearly 25% of exports in Bulgaria, while on average EU firms with 50-249 employees account for 20%. There is also a significant difference for large firms – with less than 250 employees. In Bulgaria, they are responsible for nearly 50%, while in the EU large firms account for over 63%. This is probably a consequence of the structure of Bulgarian firms, which differs from the European average, as well as the structure of Bulgarian exports, which differs significantly from the structure of exports of the whole EU.

Second, the number of firms in each category that engage in export transactions was examined (Figure 2).

Figure 2. Share of exporting firms of all firms in each category, by number of employees in the enterprises – Bulgaria and EU, 2022

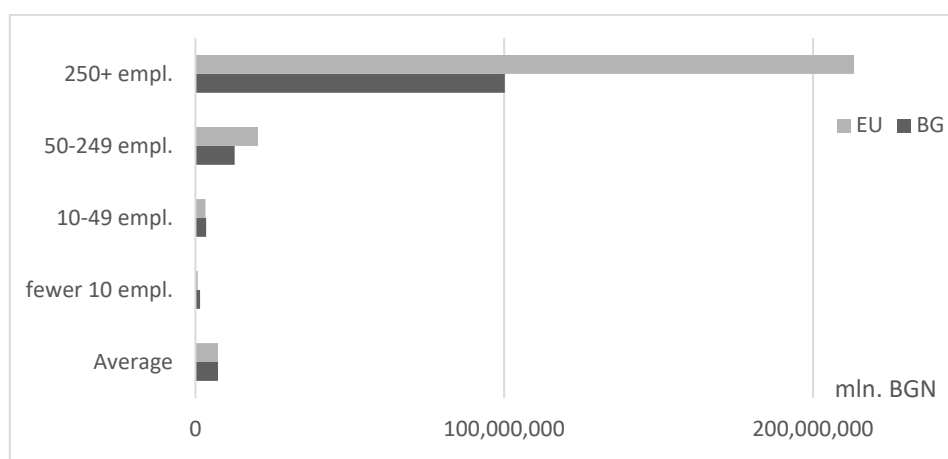


Source: Eurostat.

There is strong internationalisation in firms with more than 250 employees. More than half of the firms in Bulgaria that fall into this category export. The share of Bulgarian firms with 50-249 employees is also high. Nearly a third of them, 35%, export. For firms with 10-49 employees, the share of exporters is 13%. Only 3% per cent of firms with up to 10 employees carry out export transactions from the country. For all categories of firms, the shares of exporters are close to, but lower than, the European average.

In turn, the average export turnover of a firm exporting is an indicator of the internationalization of firms. Figure 3 shows a graphical representation of the average turnover from sales abroad per firm, according to the number of employees in the firm – for Bulgarian firms and for firms on average in the EU.

Figure 3. Average annual export turnover per firm, by number of employees – Bulgaria and EU, 2022



Source: Eurostat

In the case of companies with up to 10 employees, which export, the average annual sales abroad amount to BGN 1.5 million. In the case of small Bulgarian exporting enterprises, the transactions amount to BGN 3.5 million. Both micro and small enterprises exceed the European average in this indicator. The trend is reversing and medium and large Bulgarian enterprises make on average fewer foreign sales. BGN 12.7 million and BGN 100 million respectively. The difference with the average European levels is significant, with the difference more than double for large companies. This is also studied by Marinov (2017).

The picture of the foreign trade activity of Bulgarian firms is complemented by the data provided on the directions of the transactions of the enterprises that export.

The leading trade partners of Bulgarian manufacturers are among the countries of the European Union. Eight of the top ten countries in terms of share in Bulgarian exports are EU members – Table 1².

The distribution by firm size and direction of transactions – in the EU and to third countries is presented in Figure 4.

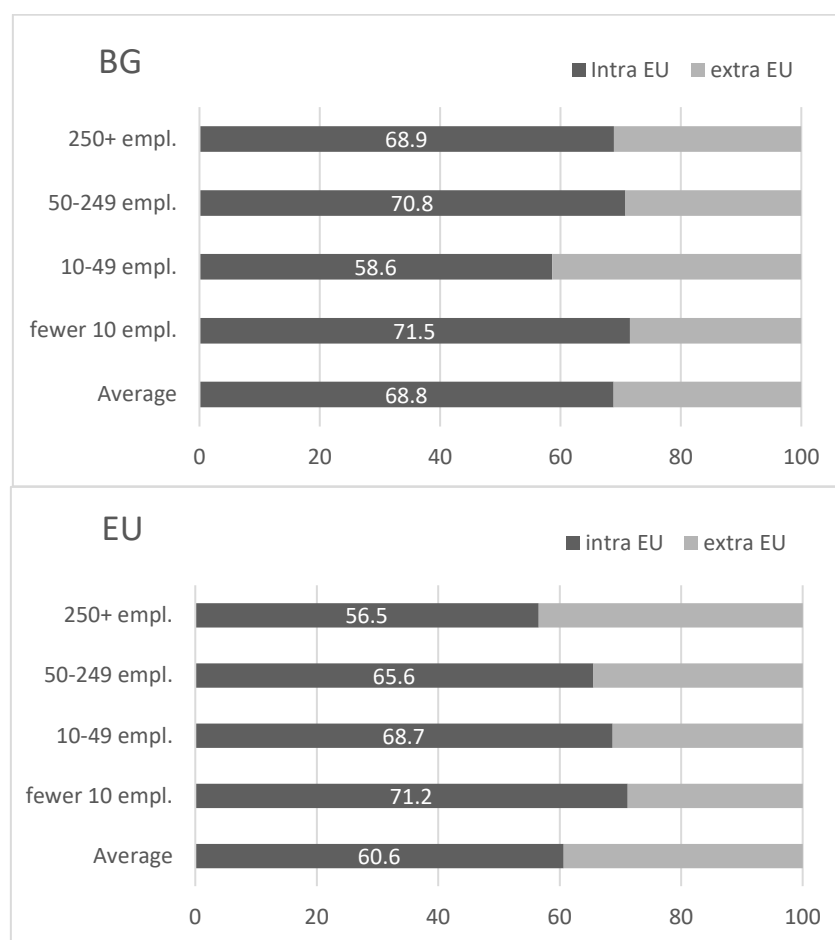
² For data from previous years see the study of Tasev, 2012.

Table 1. Bulgaria's leading export trading partners, 2022

Rank	Export partner countries of Bulgaria	Share (%)
1	Germany	14
2	Romania	10
3	Italy	7
4	Greece	6
5	Turkey	6
6	France	3
7	Spain	2
8	Netherlands	3
9	Belgium	3
10	China	2

Source: according to data at the National Statistical Institute of Bulgaria.

Figure 4. Distribution of export transaction volumes by destination and by number of employees in exporting enterprises, Bulgaria and European Union average, 2022



Source: according to data of the National Statistical Institute of Bulgaria.

According to the distribution of the transactions by direction, the preferences of the Bulgarian exporting companies to carry out export transactions mainly within the EU are clear. The high concentration of all exporting firms in the EU to trade mainly within the single market is remarkable. From these data, it can be concluded that the facilities provided by the countries' EU membership can be interpreted as an important determinant of the internationalisation of SMEs.

5. Conclusions

It is found that there are more than 22 thousand Bulgarian companies exporting. The participation in the export of different groups of Bulgarian companies, according to the number of persons employed in them, differs from the average European level.

The tendency of most Bulgarian foreign trade companies to carry out transactions mainly in other EU countries rather than in third countries is noticeable. It is also noteworthy that, in general, the share of exports in the turnover of enterprises increases as the number of employees increases. Overall, the degree of internationalisation of Bulgarian firms is at a good level, but still below the EU average. It can be recommended that companies establish more trade contacts with non-EU countries in order to make their activities less affected by the economic situation in the EU.

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ДИГИТАЛНА ТРАНСФОРМАЦИЯ В БЪЛГАРИЯ – СТРАТЕГИЧЕСКИ ПРИОРИТЕТИ И ПЕРСПЕКТИВИ

DIGITAL TRANSFORMATION IN BULGARIA – STRATEGIC PRIORITIES AND PERSPECTIVES

Резюме: Политиката на България по отношение на дигитализацията и дигиталната трансформация следва политиката на Европейския съюз и има конкретни стратегически цели. Отразяването им при очертаването на мерки, улесняващи процесите за дигитализация и дигитална трансформация на малките и средни предприятия ще доведе до последователност на действията (от стратегия до практика) и намиране на реално приложими решения в помощ на бизнеса. Основна цел на настоящата статия е да се направи обзор на стратегическите приоритети, които определят посоката на България по отношение на цифровизацията и дигиталната трансформация в следващото десетилетие, да се идентифицират проблемните области и на тази база да се изведат препоръки за бъдещи действия. В резултат са адресирани предизвикателствата, свързани с дигитализацията и дигиталната трансформация пред малките и средни предприятия и са предложени редица мерки.

Ключови думи: дигитализация; дигитална трансформация; стратегии за дигитализация

Abstract: Bulgaria's Policy on Digitalization and Digital Transformation aligns with the European Union's strategies and includes specific strategic goals. Implementing measures that facilitate the digitalization and transformation of small and medium-sized enterprises is essential to ensure consistency between strategic objectives and practical applications, ultimately leading to viable solutions that support business development. The main objective of this article is to provide an overview of the strategic priorities shaping Bulgaria's direction in terms of digitalization and digital transformation over the next decade. Furthermore, the article aims to identify key challenges and, based on this analysis, propose actionable recommendations for future initiatives. In particular, the challenges facing SMEs in their digitalization and transformation efforts are addressed, and a range of measures are proposed to overcome these obstacles.

Keywords: digitization; digital transformation; digitization strategies

JEL: O30

1. Увод

Дигиталната трансформация като „процес, при който организации и индустрии интегрират цифрови технологии във всички аспекти на своята дейност като например автоматизация на процесите, използване на изкуствен интелект, цифрови платформи, Интернет на нещата (IoT) и други иновации, които подобряват ефективността, производителността и конкурентоспособността“ (European Commission, 2022) има ключово място в стратегиите на Европейския съюз за страните, които се стремят към устойчиво развитие. Политиката на България по отношение на дигиталната трансформация следва политиката на Европейския съюз и има конкретни стратегически приоритети и цели.

2. Състояние на проблема

В този контекст Европейската комисия си поставя за цел настоящото десетилетие „да се превърне в цифровото десетилетие на Европа“ (European Commission, 2022). Като страна

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членка на ЕС, България трябва да следва стратегическите приоритети и да спазва наложените изисквания, мерки, програми и инициативи в областта на цифровизацията и дигиталната трансформация във всички сфери на обществения живот. Независимо от бавното темпо, очакванията са, че България постепенно ще се развие точно в тази посока – внедряване на дигитални решения, съответно намаляване на неквалифицираната работна ръка и увеличаване на специалистите, които имат технически познания в областта на дигиталната трансформация и могат да работят с иновации.

3. Методология / методологични подходи

Основна цел на настоящата статия е да се направи обзор на стратегическите приоритети, които определят посоката на България по отношение на цифровизацията и дигиталната трансформация в следващото десетилетие, да се идентифицират проблемните области и на тази база да се изведат конкретни препоръки за бъдещи действия.

Основните задачи са:

1. Преглед и синтез на важни стратегически документи на национално и европейско ниво, свързани с цифровизацията и дигиталната трансформация с цел систематизиране и конкретизиране на основните насоки за действие по отношение на малките и средни предприятия.
2. Анализ на настоящото състояние и идентифициране на проблемни области, свързани с цифровизацията и дигиталната трансформация.
3. Извеждане на насоки за действие и мерки за промяна.

4. Резултати от изследването

Стратегическите приоритети, регламентирани в стратегии, планове и програми², свързани с цифровизацията и дигиталната трансформация на малки и средни предприятия на европейско и национално равнище могат да бъдат обобщени и синтезирани в следните направления:

Цифровизация и дигитална трансформация – Програма „Цифрова Европа“ (Регламент (ЕС) 2021/694); Стратегия на Европейската комисия за конкурентноспособна в световен мащаб, екологична и цифрова Европа” (European Commission, 2020a); Цифров компас до 2030 (European Commission, 2021a); Механизъм за свързване на Европа за цифрова инфраструктура (Регламент (ЕС) 2021/1153); Националната програма за развитие „България 2030“ (Ministerstvo na finansite, 2020); Цифрова трансформация на България за периода 2020-2030 г. (Ministerski savet, 2020); Програма „Цифрово десетилетие“ до 2030 г. – Пътна карта на България (Ministerstvo na transporta, informatsionnitate tehnologii i saobshteniyata, 2022); Концепцията за развитието на изкуствения интелект в България до 2030 г. (Ministerstvo na elektronnoto upravlenie, 2021); Концепция за цифровата трансформация на българската индустрия (Индустрия 4.0) (Ministerstvo na ikonomikata i industriyata, 2017).

Предоставяне на цифрови услуги – Разработването и разпространението на иновативни цифрови услуги на вътрешния пазар (Регламент (ЕС) 2022/2065).

² Посочените документи са с национална значимост, но поради ограниченията за обем списъкът не бива да се приема за изчерпателен.

Развитие на цифрови пазари – Достъпни и справедливи пазари в цифровия сектор (Регламент (ЕС) 2022/1925); Програма в областта на цифровите технологии за Европа за десетилетието 2020-2030 (European Commission, 2020c); Стратегия за мястото на МСП в устойчива и цифрова Европа (European Commission, 2020c).

Възстановяване и устойчивост – Механизъм за възстановяване и устойчивост (Регламент (ЕС) 2021/241); „План за възстановяване на Европа“ (European Commission, 2021b); Национален план за възстановяване и устойчивост (Mimisterski savet, 2022).

Разработване на научни изследвания и иновации в областта на цифровизацията и дигиталната трансформация – Хоризонт Европа (European Council, 2021).

Таблица 1. Дигитализация и дигитална трансформация – заложенi цели и настоящо състояние в България

	Цели	България
Цифрова трансформация	75% от предприятията в ЕС да използват облачни изчисления, 75% изкуствен интелект; 75% големи данни до 2030 г.	10% от предприятията в България използват облачни изчисления; 3.3% – изкуствен интелект; 6.3% – големи данни (2021 г.)
Цифровизация на обществените услуги	Основни обществени услуги: 100% онлайн Електронно здравеопазване: 100% от гражданите с достъп до медицински досиета онлайн	Основни обществени услуги: 35.4% онлайн Електронно здравеопазване: 77.2% от гражданите с достъп до медицински досиета онлайн (2024 г.)
Цифрови умения	80% от населението на възраст 16-74 години с поне основни цифрови умения до 2030 г.	35.5% от работната сила (16-74 г.) с поне основни дигитални умения; 7.7% – над основни дигитални умения (2024 г.)
Възприемане на цифрови технологии от малки и средни предприятия	75% от предприятията да използват големи информационни масиви; 75% услуги в облак; 75% изкуствен интелект до 2030 г.	6% от българските предприятия използват големи информационни масиви; 10% услуги в облак; 3% изкуствен интелект (2023 г.)
Иновативни предприятия (еднорози)	Удвояване на броя на предприятията еднорози в ЕС – 249 бр. за 2022 г.	0 еднорози (2023г.)
Цифров интензитет	Над 90% от МСП, с основно ниво на цифров интензитет	28.4% с основно ниво на цифров интензитет (2023 г.)
Специалисти в областта на ИКТ, с конвергенция между половете	10% от работната сила	4.3% от работната сила (2023 г.)
Гигабитова и 5G свързаност	100% от населението	86% от населението има достъп до оптично влакно до помещенията 67% – 5G (2023 г.)
Цифрови умения на младежи	Броят на лицата с ниски резултати по компютърна и информационна грамотност да стане по-малко от 15% (2030 г.)	Броят на лицата с ниски резултати е 34% (2018 г.)
Дигитална инфраструктура	100% (2030 г.)	86% (2023 г.)

Източник: Собствена разработка на автора на база представените стратегически документи и DESI (2024).

Развиване на цифрови умения и компетентности – Бяла книга за изкуствения интелект (ЕК, 2020); „Цифрови умения и компетентности и успешно цифрово образование и обучение – подготвени за цифровата ера“ (European Council, 2023); Европейската програма за умения (European Commission, 2022a); План за действие за цифрово образование 2021-2027 (2020); Програма „Развитие на човешките ресурси“ 2021-2027; Стратегия по заетостта на Р. България 2021-2030 (Ministerski savet, 2022).

Напредъкът на държавите по заложените приоритети се следи периодично като един от основните методи е индексът DESI (DESI, 2024). В Таблица 1 е представена обобщена информация за основните стратегически цели, свързани с дигитализацията и дигиталната трансформация и данни за настоящите стойности в България, отчетени в DESI.

5. Изводи

Представените данни показват, че България се развива относително добре по отношение на гигабитова свързаност – 86% от населението има оптично влакно до помещенията, което е много по-високо от средното за ЕС от 56% (European Commission, 2022). За 5G общото покритие на България е 67%, което е под средното за ЕС ниво от 81%. Селските райони са изправени пред още по-големи предизвикателства, със значително по-ниски нива на покритие.

Като проблемни области се очертават възможностите на бизнеса да предоставя онлайн услуги, да извършва обичайната си дейност в дигитална среда, да инвестира в дигитализация и дигитална трансформация. Област със сериозна нужда от подпомагане е развиването на цифрови умения и компетентности, тъй като там се наблюдава сериозен дефицит. В подкрепа на това твърдение могат да се добавят данните от Националния доклад за цифровото десетилетие (European Commission, 2023), в който при съпоставка на данните за България с тези за ЕС ясно се вижда, че по отношение на нивото на дигитални умения разликите все още са значителни: 31% притежават поне базови дигитални умения (ЕС – 54%); средно ниво на дигитални умения – 8% (ЕС – 26%); дигитални умения за създаване на съдържание – 44% (ЕС – 66%); предприятия, които предоставят ИКТ обучение – 9% (ЕС – 22%). На този фон прави впечатление, че възможностите на пазара на труда да предостави ИКТ специалисти са забележителни – завършилиите ИКТ са 4.9% към 4.2% за ЕС – данните за България са повече от удовлетворяващи.

Данните показват още, че изоставаме и по отношение на дигитализацията на публичните услуги, макар че разликите с ЕС в тази област не са толкова значителни.

По отношение на инвестициите на фирмите в човешки капитал, свързани с натрупването на дигитални умения, прави впечатление, че интересът е изключително слаб – само 9.1% от фирмите правят фирмени обучения (по данни от НСИ, 2023). Това има своето обяснение, като се имат предвид данните за активността на предприятията в дигитална среда – 50.4% от предприятията имат уебсайт; 38% имат социални мрежи; 17.5% имат платени услуги в облак. В таблицата по-горе е указано, че дигиталният интензитет на България е 47%, докато в ЕС значително по-висок – 69%. Ускоряването на процесите по дигитална трансформация изисква мерки и инициативи, които да мотивират малките и средни предприятия да оценят възможностите на електронната среда и да навлязат по-сериозно в нея като инвестират по-целенасочено в човешки капитал именно сега, тъй като „результатите от направените инвестиции в човешки капитал се проявяват с лаг във времето“ (Pandurska, 2021).

За преодоляване на предизвикателствата, свързани с постигане на заложените стратегически приоритети, могат да бъдат предложени редица мерки:

- консултантска помощ за разработване на стратегии за дигитализация и устойчивост;
- технологични мерки за внедряване на модерни ИТ системи, сървъри, мрежи и технологии, облачни услуги, софтуер за автоматизация на ключови бизнес процеси, използване на софтуерни работи за автоматизиране на рутинни задачи, внедряване на IoT устройства за мониторинг и управление на производствените процеси в реално време и др. В тази връзка е би било полезно „да се работи върху по-добра оценка на рисковете, произтичащи от нови продукти и бизнес модели“ (Todorov, 2023).
- мерки, свързани с УЧР – въвеждане на програми за обучение на служителите, насочени към дигитални умения и управление на данни и използване на нови технологии;
- мерки, свързани с организационната промяна;
- мерки, свързани с осигуряване на допълнително финансиране чрез европейски и национални програми за финансиране на дигитални и зелени технологии, използване на възможностите за данъчни облекчения и субсидии за проекти и др.;
- мерки, свързани с оптимизиране на разходите – провеждане на анализ за разходите и ползите от внедряването на нови технологии и устойчиви практики и др.;
- мерки за осигуряване на киберсигурност;
- мерки, свързани с дигитализация на услугите, предоставяни от държавната администрация.

Една от основните причини за забавянето на цифровизацията в България не е липсата на конкретни стратегии за управление на дефицитите, свързани с дигитализацията и дигиталната трансформация, а недостатъчната мотивация за широкомащабното им прилагане в малкия и средния бизнес, така че мерки и в тази посока са силно препоръчителни.

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DIGITAL TRANSFORMATION STRATEGIES IN THE ORGANIZATION: THE IMPACT OF RESEARCH & DEVELOPMENT AS A STRATEGIC FACTOR

Abstract: Digital transformation profoundly changes organizations, creating new business opportunities, while also imposing new challenges to strategic management. This paper explores how digital transformation strategy is related to the functional organizational strategy through analysis of the relationship between the adoption of digital technologies and research and development investments of the firm. Results show that there is a positive relationship between the digital transformation of an organization and its investments in research and development, suggesting that organizations engaged in research and development activities have digital transformation strategies impacted by decisions on the functional strategy level. The applications of the results are towards 1) explaining firms' digital transformation strategies and associated outcomes, and 2) supporting firms in selecting and implementing digital transformation strategy that fits their strategic goals on the functional level.

Keywords: digital transformation; organization; strategy; R&D

JEL: M10; M15; L10

1. Introduction

Digital transformation has emerged as a critical management priority for organizations across various industries, regardless of size or operational sector. It is a strategically important issue, fundamentally altering customer relationships, internal processes, and value-creation mechanisms. However, this imperative also introduces multiple challenges, as managers must craft a digital transformation strategy that best aligns digital technology adoption with organizational goals and performance outcomes. The digital transformation strategy is not isolated from other strategic activities of the organization as it is related to decisions on the corporate, business and functional strategic levels (Matt et al., 2015).

The paper focuses on the interplay between the digital transformation strategy and the functional-level strategy. R&D is one of the strategic factors on the functional level, as it contributes to the enhancement of technological capabilities (Wu et al., 2023). Scientific literature suggests that there is a relationship between the adoption of digital technologies in the organization and R&D investments. Thus, in the paper, we examine how R&D investments impact the adoption of digital technologies in firms to uncover more about the digital transformation strategy.

2. Theoretical Background

Strategy as a tool for organizational management

A fundamental view is that strategy defines the primary long-term goals and objectives of an organization, guiding the selection of courses of action and the allocation of resources required to achieve these goals (Chandler, 1962). Strategy is a comprehensive, long-term plan developed to achieve organizational objectives and secure a competitive advantage. This plan outlines how

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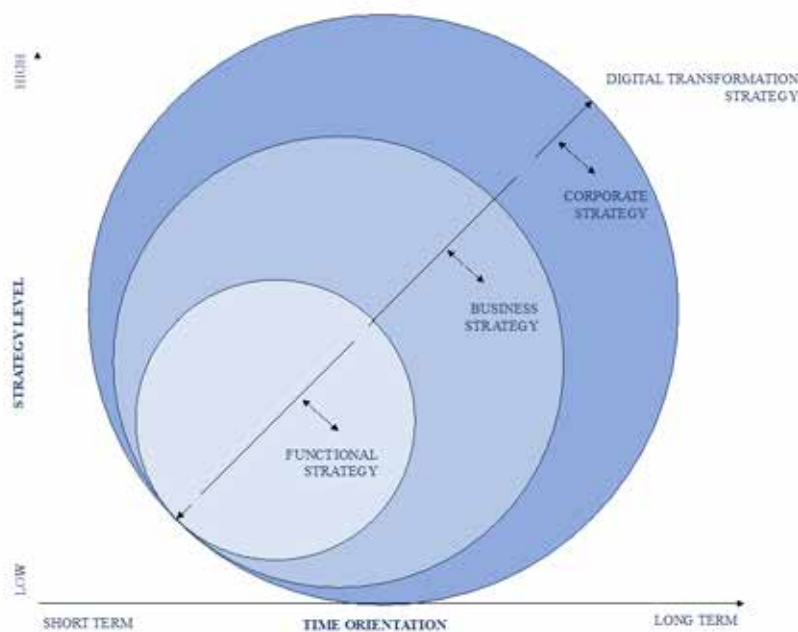
resources will be allocated and activities coordinated to fulfil key goals and establish a strategic direction (Mintzberg, 1987).

Digital transformation and strategy

Digital transformation is a process of fundamental change achieved through the innovative application of digital technologies, coupled with the strategic use of key resources and capabilities, aimed at significantly enhancing the organization's operations and shaping its value proposition to stakeholders (Gong, Ribiere, 2021). This definition supports the assertion that strategy, rather than technology alone, serves as the primary driver behind successful digital transformation (Kane et al., 2015).

However, challenges stem from the extensive scope and profound impact that digital technologies exert on organizations. As Figure 1 represents, digital transformation intersects with multiple levels of organizational strategy – corporate, business, and functional – and must align with these levels to be effective (Lazarov, 2024).

Figure 1. The Digital transformation strategy in the context of other organizational strategies



Source: Authors' elaboration.

R&D, functional strategy and digital transformation

Research and development (R&D) aims at developing new products, services, process innovations, or organizational improvements. Investments in R&D facilitate the development of unique organizational capabilities that create and help sustain a competitive advantage (Barney, 1991). By fostering an environment that promotes continuous innovation, they explore emerging technologies and create solutions that drive digital transformation, leading to sustainable growth and strategic advantages. This can also be viewed from a negative

perspective – imbalances in the funding of R&D can cause a reduction in innovation in the organization, respectively lower levels of technological renewal (Chobanova, 2023a).

In addition, R&D creates a culture of continuous learning and improvement, equipping organizations to be resilient, adaptable, and capable of leveraging digital technologies to achieve their strategic objectives (Gaglio et al., 2022). Organizations seek to innovate to protect their competitive position and this is the incentive to create and use new knowledge for economic development (Chobanova, 2023b).

Based on the above observations the following hypothesis is formulated:

H1. *There is a relationship between the digital transformation of the organization and its R&D investments*

3. Methodology

Quantitative analysis based on empirical data about the digital transformation and business performance of organizations is applied. Primary analysis involves descriptive statistics and other statistical techniques to explore interrelationships and tests of significance. An ordinary least squares (OLS) regression analysis is used to evaluate the possible functional dependencies between the variables of the study and to test the hypothesis.

Data

The study used data from the survey „*ICT Usage in Enterprises*“, conducted by National Statistical Institutes among organizations within the framework of business statistics surveys and on the basis of annual implementation of the regulations of the European Commission. The dataset included records for 4739 private non-financial organizations in Bulgaria for the year 2022 (with 335 entities that invest in R&D), the information being collected through a harmonized Eurostat questionnaire that is updated every year to reflect the rapid development in the field of information and communication technologies.

Dependent variable

The „*ICT Usage in Enterprises*“ survey results were used in the construction of the dependent variable *Digital transformation index* (DIGITAL). The survey asked organizations to provide information about technologies used in their business – from fixed internet connection, company website and social media, through ERP systems, CRM applications, and Cloud to advanced AI technologies. Altogether, 25 questions from the survey were used to construct the Dependent variable DIGITAL, where answers were coded with 1 for *yes* and 0 for *no* (questions represented as q_i in the equation below). A simple aggregate method was used to create the index DIGITAL where equal weight is given to each of the 25 questions. The final variable is with a maximum value of 100 (positive answer to all questions) and a minimum value of 0 (negative answer to all questions).

The equation of the index:

$$DIGITAL_i = (\sum_0^n q_i)/n*100 \quad (1)$$

Independent variable

In addition, data from the annual business statistics was used for the Independent variable *Research and development expenses* (RND). The data is also comparable between all EU member states and is collected according to a uniform Eurostat methodology.

In the original dataset, the expenses for R&D by each organization were represented in groups ranging from 0 – no expenses, 1 – *below 50* to 5 *over 1,000 thousand, BGN*. For the analysis, a dummy variable was created, where organizations with no R&D investments remained coded as 0, while all other groups (1 to 5) were assigned a value of 1.

Control variables

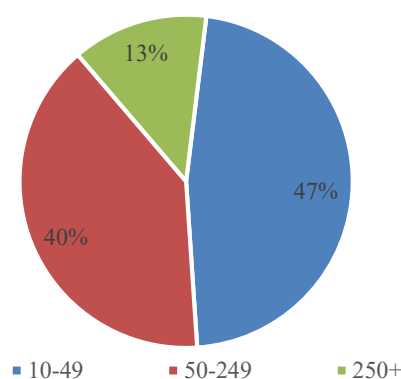
This study included two Control variables that can affect the digital transformation – firm size (SIZE) and firm age (AGE). It is suggested that organizations with access to more resources can use them to implement new digital technologies, as they are often predisposed to invest more in innovation compared to smaller organizations (van de Vrande et al., 2009). Therefore, SIZE was included to control the effect of firm size on its digital transformation, where it is represented in three groups according to the number of employees, coded as 1 – *10-49 employees*, 2- *50-249 employees*, 3 – *over 250 employees*. This representation is in line with the EU definitions for small, medium and large enterprises (European Commission's *SME Definition – User Guide 2020*).

In addition, older organizations are inclined to become inflexible and not suited to appropriately reacting to a changing environment (Barron et al., 1994) as is the case with digital transformation. Therefore, AGE was included to control the effect on digital transformation, where it represents the number of years since the company's initial listing until the survey was conducted (2022).

Descriptive statistics

In this section, descriptive statistics of the variables of interest are presented. In terms of firm size (Figure 2) the largest proportion of firms consists of those with 10 to 49 employees, representing 47% of the observations, followed by firms with 50 to 249 employees at 40%. Firms with more than 250 employees constitute the smallest group.

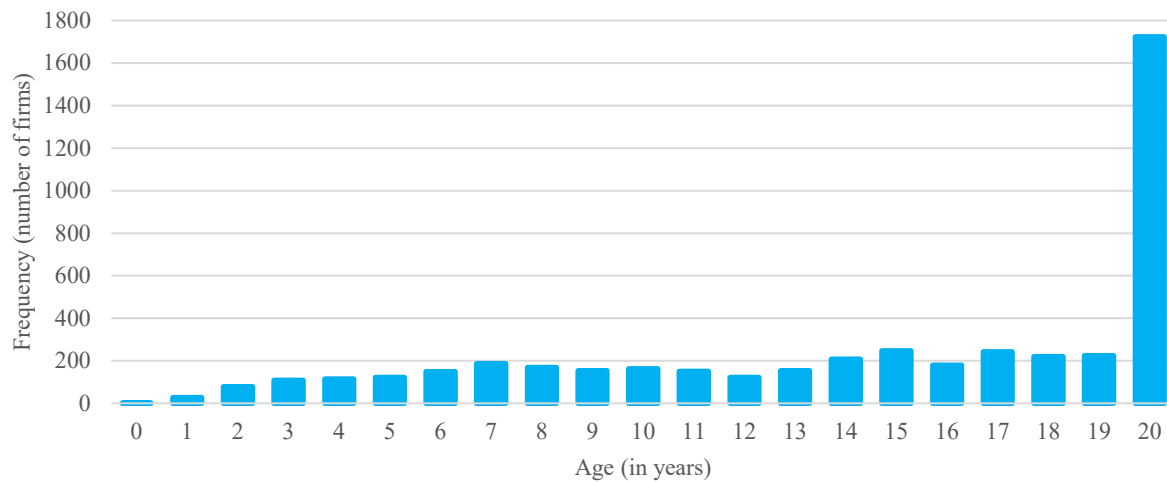
Figure 2. Size of firms (in number of employees) – SIZE



Source: Authors' calculations.

Regarding the age of the firms (Figure 3), over one-third of them are more than 20 years old with the average firm age in the sample being approximately 15 years.

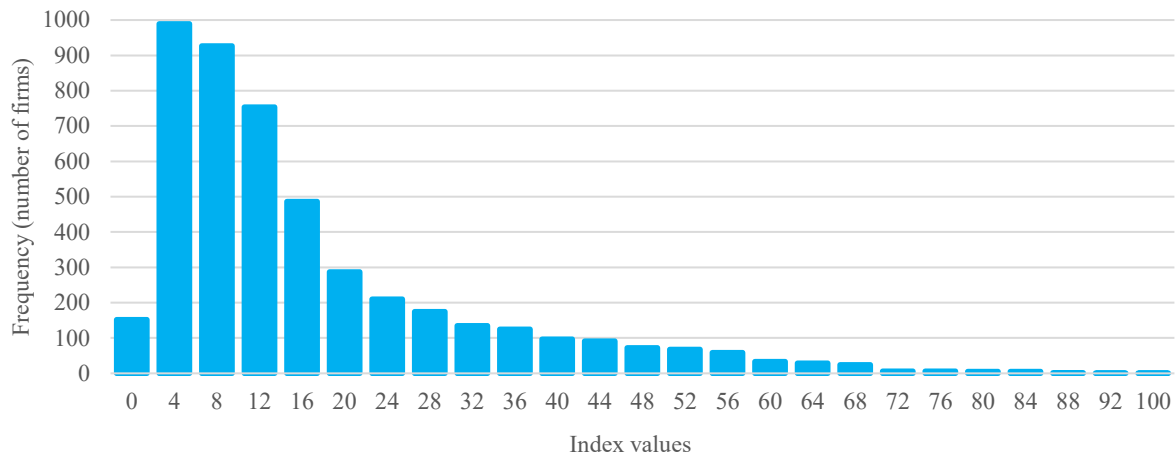
Figure 3. Age of firms (in years) – AGE



Source: Authors' calculations.

When considering the Dependent variable DIGITAL (Figure 4), the distribution is right-skewed, indicating a concentration around the low values of the index. The mean value is 16.5 out of 100 and the median is even lower – 12. These statistics suggest that the digital transformation of Bulgarian businesses is still in its early stages.

Figure 4. Distribution of the firms based on Digital Transformation Index – DIGITAL



Source: Authors' calculations.

Estimation model

To examine the proposed relationships, the research used OLS regression. The testing model for the relationship between R&D investments and the digital transformation of the company was formulated as follows (H1):

$$DIGITAL_i = C + \beta_1 RND\_DUMMY_i + \beta_2 SIZE_i + \beta_3 AGE_i + \varepsilon_i \quad (2)$$

Given the right-skewed distribution of the dependent variable, we suspected the presence of heteroskedasticity, which was confirmed through the White test. To address this issue, we applied Huber-White-Hinkley heteroskedasticity-consistent standard errors.

4. Results

The results of the linear regression model (Table 1) show that research and development expenses (denoted as RND DUMMY) have a positive and statistically significant impact on digitalization. Specifically, firms that invest in R&D, when compared to those that do not, tend to have a 6.34-point higher average in the DIGITAL index. This suggests that R&D investment is a key factor driving higher levels of digitalization in firms.

Table 1. Linear regression results

Dependent Variable: DIGITAL		
Variable	Coefficient	Std. Error
C	5.62***	(0.69)
RND DUMMY	6.34***	(0.95)
SIZE	7.26***	(0.33)
AGE	-0.11**	(0.04)
Adjusted R-squared: 0.13		
Huber-White-Hinkley heteroskedasticity consistent standard errors in parentheses		
Method: Least Squares		
Observations: 4739		

*p < 0.05; **p < 0.01; ***p < 0.001

Source: Authors' calculations.

5. Conclusion

Key findings and contributions

The study's results support the hypothesis (H1) – there is a relationship between the digital transformation of an organization and its R&D investments. Indeed, firms that invest in R&D are expected to have a higher level of digital transformation.

On the one hand, this aligns with previous research that highlights the critical role of R&D investments in enhancing an organization's ability to innovate and adapt to the rapidly evolving digital landscape (Brynjolfsson, Hitt, 2000). Organizations that allocate resources towards R&D are better positioned to adopt and integrate advanced digital technologies, leading to improved efficiency, competitive advantage, and long-term growth.

On the other hand, the results underline the overall interdependence between functional and digital transformation strategies. R&D acts not only as a catalyst for digital transformation but also reinforces the strategic link between functional and digital strategies. Consequently, organizations need to integrate their digital transformation strategy within a broader strategic framework that incorporates corporate, business, and functional strategies.

Limitations and further research

Although, the dataset for this study is comprehensive and harmonized, it only includes data from organizations in Bulgaria for the year 2022. This limitation may restrict the generalizability of the findings to other countries or regions with different economic, technological, or regulatory environments. Future studies should incorporate a broader dataset

that includes multiple countries or longitudinal data to verify the findings across diverse contexts. This will provide comparability of the findings between organizations from different EU member-states, with more insights to suggest improvements in the public policy to foster digital transformation.

While the study examines R&D investments, there are other functional factors, such as training and development, IT infrastructure investments and others that may also play critical roles in the digital transformation process. The exclusive focus on R&D may overlook these other factors, limiting the scope of the analysis. Expanding the research to include additional functional variables could provide a more comprehensive understanding of how different aspects of the functional strategy contribute to the digital transformation strategy.

Practical considerations for firms

Businesses can benefit from strategically investing in R&D to enhance digital capabilities – organizations should prioritize and allocate resources to R&D activities as a means to accelerate their digital transformation. The findings of the study suggest that R&D investments are a key driver for adopting advanced digital technologies and fostering innovation.

The positive relationship between R&D investments and digital transformation also suggests that it is essential for organizations to align their digital transformation strategy on the functional strategic level of the firm. This involves integrating digital goals with broader functional initiatives, ensuring that digital projects are not pursued in isolation but rather as a key component of the organization's goals on a functional level.

The insights from this study provide a foundation for future research to explore further the interplay between functional strategies and digital transformation efforts, particularly how organizations can optimize this relationship for sustainable growth and competitiveness.

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ТЕОРЕТИЧНИ АСПЕКТИ НА ФИНАНСИТЕ НА МСП ПРИ ИКОНОМИЧЕСКА КРИЗА

THEORETICAL ASPECTS OF SME FINANCE IN ECONOMIC CRISIS

Резюме: Статията изследва теоретичните аспекти на финансирането на малките и средни предприятия в условията на икономическа криза. Разглежда и ключовата роля на малките и средните предприятия за икономиката, за създаването на работни места и за стимулирането на иновациите и икономическия растеж. Анализира структурата на техните финанси по източници на финансиране, управление на капитала и специфични финансови предизвикателства. Статията разглежда понятието „икономическа криза“ от гледна точка на три основни икономически теоретични направления: класическата школа, кейнсианската школа и монетаризма. Предлага ключови изводи, подчертавайки необходимостта от адаптиране на финансовите стратегии на малките и средните предприятия и от разработване на устойчиви механизми за подкрепа, които да смекчат негативните ефекти от икономическите сътресения. Предлага идеи за бъдещи изследвания и политики, насочени към укрепване на финансовата устойчивост на малките и средните предприятия.

Ключови думи: финанси на предприятието; малки и средни предприятия; икономическа криза; икономически теории; устойчивост

Abstract: The article examines the theoretical aspects of financing small and medium-sized enterprises in the context of an economic crisis. It also considers the key role in the economy, highlighting their importance for creating jobs and promoting innovation and economic growth. The article analyses the financial structure of medium-sized enterprises, covering sources of financing, capital management, and the specific financial challenges faced by these enterprises. I explore the concept of „economic crisis“ from the perspective of three main economic theoretical schools: the classical school, Keynesianism, and monetarism. The research offers key conclusions, emphasizing the need to adapt the financial strategies of medium-sized enterprises and develop sustainable support mechanisms to mitigate the negative effects of economic shocks. The article provides recommendations for future research and policies aimed at strengthening the financial resilience of small and medium-sized enterprises.

Keywords: enterprise finance; small and medium-sized enterprises; economic crisis; economic theories; sustainability

JEL: E51; E65; G

1. Увод

В съвременната глобална икономика, белязана от бързи промени и нарастваща несигурност, малките и средните предприятия (МСП) играят ключова роля за икономическата стабилност и растеж. Въпреки важността си за иновациите и заетостта, те са изключително чувствителни към икономическите кризи. Финансовата устойчивост на МСП е критичен фактор за тяхното оцеляване и просперитет, особено в условията на икономически сътресения.

Статията разглежда теоретичните основи на финансовото управление на МСП в контекста на икономическите кризи, като анализира и структурата на техните финанси, включително източниците на финансиране, управлението на капитала и специфичните финансови предизвикателства. Изследва необходимостта от адаптиране на финансовите

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стратегии на МСП и от разработване на устойчиви механизми и политики, които могат да смекчат негативните последици на икономическата криза.

2. Състояние на проблема

В контекста на икономическите кризи познаването на теоретичните аспекти на финансите на МСП и тяхната динамика по време на икономически сътресения предлага солидна основа, върху която те могат да изградят и формулират стратегии за справяне с нарастващите и все по-динамични предизвикателства. Класическата икономическа школа, кейнсианството и монетаризмът, предлагат актуални идеи за формирането на конкурентно поведение на МСП в периоди на икономическа несигурност чрез оптимизиране на източниците и структурата на финансиране и тяхното управление.

МСП играят ключова роля в българската икономика, като допринасят значително за икономическия растеж, заетостта и иновациите. Те представляват 99.8% от всички предприятия в България и осигуряват работа на 75.7% от заетите лица в тях.

МСП имат уникалната способност да се адаптират бързо към променящите се пазарни условия. Тази гъвкавост е особено ценна в условията на икономическа нестабилност и кризи.

3. Методология / методологични подходи

Кабинетното проучване, проведено за нуждите на тази статия, извърши задълбочен преглед и анализ на съществуващата академична литература и теоретични концепции, свързани с финансите на МСП и икономическите кризи.

4. Резултати от изследването

Координацията и сътрудничеството между различни икономически субекти и институции са от съществено значение за укрепване на финансовата устойчивост на МСП и от тази гледна точка е важно да се отдели внимание на насоките за разработване на политики, които да осигурят по-стабилна и устойчива среда за развитие на МСП.

Икономическата криза е сложен феномен, който може да бъде анализиран от различни ъгли и дефиниран по различни начини. Терминът често се свързва с цикличните колебания в икономиката и може да бъде предизвикан от вътрешни или външни фактори, като например финансови кризи, политическа нестабилност или природни бедствия. Икономическите кризи могат да имат дългосрочни последици за обществото като задълбочаване на социалното неравенство и увеличаване на държавния дълг. Икономическата криза представлява период на значителни сътресения в икономическата система, водещи до дисбаланси в основните макроикономически показатели, нарушаване на производствените вериги и влошаване на финансовата стабилност на държавата и домакинствата, както и до сериозно нарушение на макроикономическото равновесие, рязко свиващо съвкупното търсене и предлагане, което се отразява негативно върху всички сфери на обществения живот (Vasilev, 2014).

Анализът на понятието „икономическа криза“ през призмата на Класическата школа разкрива интересна перспектива, която е едновременно оптимистична и детерминистична. Класиците, водени от идеята за „невидимата ръка“ на Адам Смит,

вярват в саморегулиращата се природа на пазарите. Според тази концепция икономическите кризи са временни отклонения от естественото равновесие, които пазарът сам коригира. Кризите са неизбежна фаза, като естествен механизъм за пречистване на икономиката от неефективни елементи и преразпределение на ресурсите. (Chobanova, 2012). Фигура 1 обобщава причините, проявленията, държавната политика и правилната реакция на предприятията при икономическа криза според Класическата школа.

Фигура 1. „Икономическата криза“ през призмата на Класическата школа

Причини	Причините за настъпване на икономически кризи са комплексни, но основно се свеждат до свръхпроизводство в определени сектори и/или недостатъчно търсене и/или технологични промени, водещи до структурни изменения в икономиката.
Проявления	Проявленията на икономическата криза според класическата школа включват: спад в производството, увеличаване на безработицата, намаляване на инвестициите, дефлация и други.
Държавна политика	Класиците са привърженици на минималната намеса на държавата в икономиката. Според тях държавната намеса само ще забави необходимите структурни промени и адаптация на икономическите субекти към новите реалности (Yotsov, 2013). Въпреки че класическата школа препоръчва пенална, съвременните интерпретации признават необходимостта от ограничени държавни интервенции за смекчаване на най-тежките последици от кризите (Dimitrov, 2009). Според класиците, кризата е като буря - колкото и да е страшна, рано или късно ще отминне, оставяйки след себе си обновена и по-устойчива икономическа среда. Подобно на природата, циклите на растеж и спад са неизбежна част от функционирането на пазарната икономика. Относно държавната политика във време на икономическа криза, те препоръчват: минимална намеса на държавата в икономиката, осигуряване на прозрачност и свършена конкуренция на пазара, чрез поддържане на стабилна правна и регулаторна рамка.
Микро ниво	На микро ниво класическата школа учи, че в условия на икономическа криза предприятията трябва да се фокусират върху гъвкавост в адаптирането към променящите се пазарни условия, разумно управление на ресурсите, ефективност и иновации.

Източник: Собствено изследване.

Класическата школа разглежда икономическите кризи като естествена част от бизнес цикъла, в която периодите на растеж неизбежно са последвани от спадове. Тяхната вяра в саморегулиращите се пазарни механизми ги води към препоръки за минимална държавна намеса и адаптация на предприятията към променящите се условия. Този подход, въпреки критиките, остава влиятелен в съвременните икономически дискусии.

Анализът на понятието „икономическа криза“ през призмата на Кейнсианската перспектива (Фигура 2) разкрива коренно различен подход от този на Класическата школа. Кейнсианството, родено от Великата депресия, поставя акцент върху активната роля на държавата в преодоляването на икономическите кризи.

Въпреки че има своите предизвикателства и критики, Кейнсианската теория остава ключов елемент в съвременната икономическа мисъл и антикризисното управление, особено в периоди на остри кризи. Тя предлага проактивен подход към управлението на икономиката, базиран на държавна намеса и координирани усилия между публичния и частния сектор. Тя подчертава важността на поддържането на съвкупното търсене и използването на фискални и монетарни инструменти за стабилизиране на икономиката.

Монетаристкият подход към понятието „икономическа криза“ (Фигура 3) поставя акцент върху ролята на паричната политика като основен инструмент за управление на икономическите цикли. За монетаристите кризите се коренят в нарушения на паричното обращение и неправилното провеждане на парична политика.

Фигура 2. „Икономическата криза“ през призмата на Кейнсианската школа

Причини	Основните причини за възникване на икономически кризи според кейнсианците са: недостатъчно съвкупно търсене, нестабилност на инвестициите, както и психологически фактори, водещи до песимизъм сред инвеститорите и потребителите.
Проявления	Проявленията на икономическата криза според кейнсианската школа включват: рязък спад в производството и заетостта; намаляване на икономическата активност, инвестициите и потреблението; дефлационен натиск; обща икономическа несигурност.
Държавна политика	Кейнсианците са твърди привърженици на активната държавна намеса. Кейнсианската теория препоръчва използването на фискални стимули, увеличаване на публичните разходи и намаляване на данъците като ключови инструменти за преодоляване на кризи (Rangelova, 2015). Относно ефективната държавна политика в условия на икономическа криза, препоръките на кейнсианците включват: увеличаване на публичните разходи за инфраструктура и социални програми; намаляване на данъците за стимулиране на потреблението; провеждане на експанзионистична парична политика.
Микро ниво	Кейнсианството препоръчва на предприятията работещи във времена на икономическа криза: фокус върху запазване на работни места и поддържане на производствен капацитет; гъвкавост и готовност за адаптиране към промени в държавната политика; използване на възможностите, предоставени от държавните стимули и програми. Кейнсианският подход подчертава важността на координацията между публичния и частния сектор за ефективно преодоляване на кризите. Предприятията трябва да са готови да си сътрудничат с държавата и да участват активно в антикризисните мерки (Dimitrov, 2014). Кейнсианството ни учи на икономическа солидарност. Кризата е като голям пожар - всички трябва да участват в гасенето, а държавата е главният пожарник, координиращ усилията. Важно е да отбележим, че прекомерното разчитане на държавна намеса може да доведе до натрупване на публичен дълг и да създаде нови икономически проблеми в дългосрочен план (Minasyan, 2012).

Източник: Собствено изследване.

Фигура 3. Монетаристки подход към понятието „Икономическа криза“

Причини	Според монетаристите, основните източници на икономически кризи са: неправилно провеждане на парична политика от Централната банка; резки промени в паричното предлагане и/или нестабилност в банковата система. Монетаристкият подход акцентира върху ролята на парите като двигател на икономическите цикли и, съответно, на парично-кредитната политика като ключов инструмент за стабилизиране на икономиката (Dimitrov, 2009).
Проявления	Проявленията на икономическата криза според монетаристите включват: ускоряване на инфлацията; спад в реалния БВП и заетостта; нестабилност на финансовите пазари; намаляване на инвестициите и потреблението.
Държавна политика	Що се отнася до мерките, които трябва да се предприемат, монетаристите поставят основен акцент върху паричната политика. Монетаристкият подход препоръчва Централната банка да провежда стриктна контролирана парична политика, фокусирана върху поддържане на ценова стабилност и контрол върху паричното предлагане (Rangelova, 2015). Монетаристите виждат икономиката като "часовников механизъм", чието правилно функциониране зависи от точната настройка на паричните лостове. Кризата е като повреда в този механизъм, която трябва да бъде отстранена с прецизни парични интервенции. Прецизното настройване на лихвените проценти и паричната маса е от решаващо значение за предотвратяване на кризи. По отношение на ефективната държавна политика по време на икономическа криза монетаристите препоръчват: независима Централна банка, фокусирана върху ценова стабилност; строг контрол върху паричното предлагане и лихвените проценти; минимизиране на фискалните дефицити. Освен това, монетаристите препоръчват активно сътрудничество между Централната банка и правителството, за да се избегне "размиване" на ефекта от паричната политика поради противоречиви фискални решения. Балансиранят подход между парична и фискална политика е ключът към преодоляване на икономическите предизвикателства.
Микро ниво	Монетаристкият подход насърчава предприятията в условията на криза към следните мерки: бързо адаптиране към промените в паричната политика; поддържане на финансова дисциплина и ликвидност; инвестиции, които се вписват в макроекономическата среда. В духа на алегорията, която направихме по-горе, според монетаристите, предприятията трябва да бъдат "синхронизирани часовници", които реагират бързо и ефективно на промените в паричната политика. Финансовата дисциплина, ликвидността и адаптивността са ключови за оцеляването в среда на променливи лихвени проценти и парична маса.

Източник: Собствено изследване.

Монетаристкият подход акцентира върху ролята на паричната политика като основен инструмент за управление на икономическите кризи. Според него стабилната и предвидима парична политика, насочена към контрол на инфлацията и банковата

система, е ключът за ограничаване на дестабилизиращите ефекти на цикличните сринове. Това виждане оказва значително влияние върху съвременните дебати за икономическата политика.

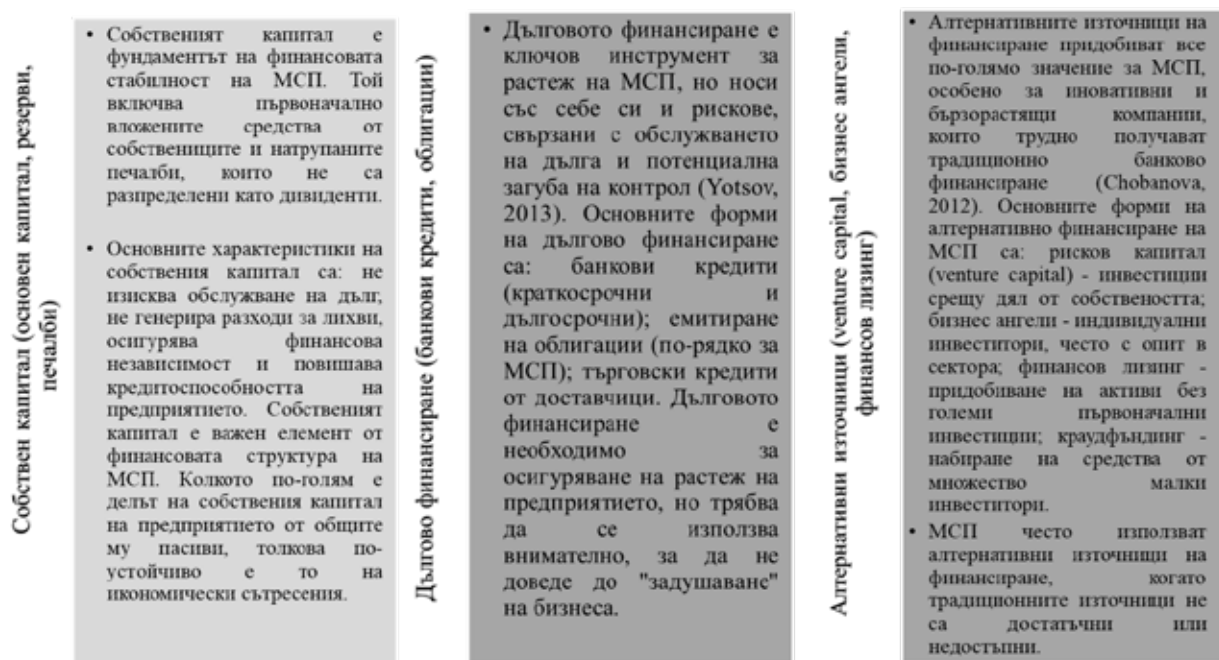
След задълбоченото теоретично разглеждане на понятието „икономическа криза“ през призмата на различни икономически школи, ще насочим вниманието си към финансите на МСП.

МСП са гръбнакът на всяка съвременна икономика, но често се сблъскват със специфични финансови препятствия, които могат да бъдат задълбочени по време на икономически кризи. МСП се характеризират със силна зависимост от външни източници на финансиране, ограничен достъп до капиталови пазари и значителни предизвикателства при управлението на оборотния капитал (Fartsov, 2016).

Разглеждайки структурата на финансите на МСП, можем да открием два основни компонента: източници на финансиране и ефективно управление на капитала.

Източниците на финансиране на МСП (Фигура 4) представляват ключов фактор за тяхното оцеляване, растеж и развитие.

Фигура 4. Основни категории източници на финансиране



Източник: Собствено изследване.

Изборът на подходящи източници на финансиране зависи от множество фактори, включително: фаза на развитие на предприятието, браншова определеност на дейността, финансово състояние и кредитна история, цели за растеж и развитие, готовност на собствениците да споделят контрола върху бизнеса. Оптималната структура на финансиране за МСП е динамична и трябва да се адаптира към променящите се нужди на бизнеса и условията на пазара (Petranov, 2015).

Ключът към успешното финансиране на МСП е в балансирането между различните източници, минимизирането на рисковете и максимизирането на възможностите за растеж. Това изисква не само финансова експертиза, но и стратегическо мислене от страна на ръководството (Yotsov, 2018).

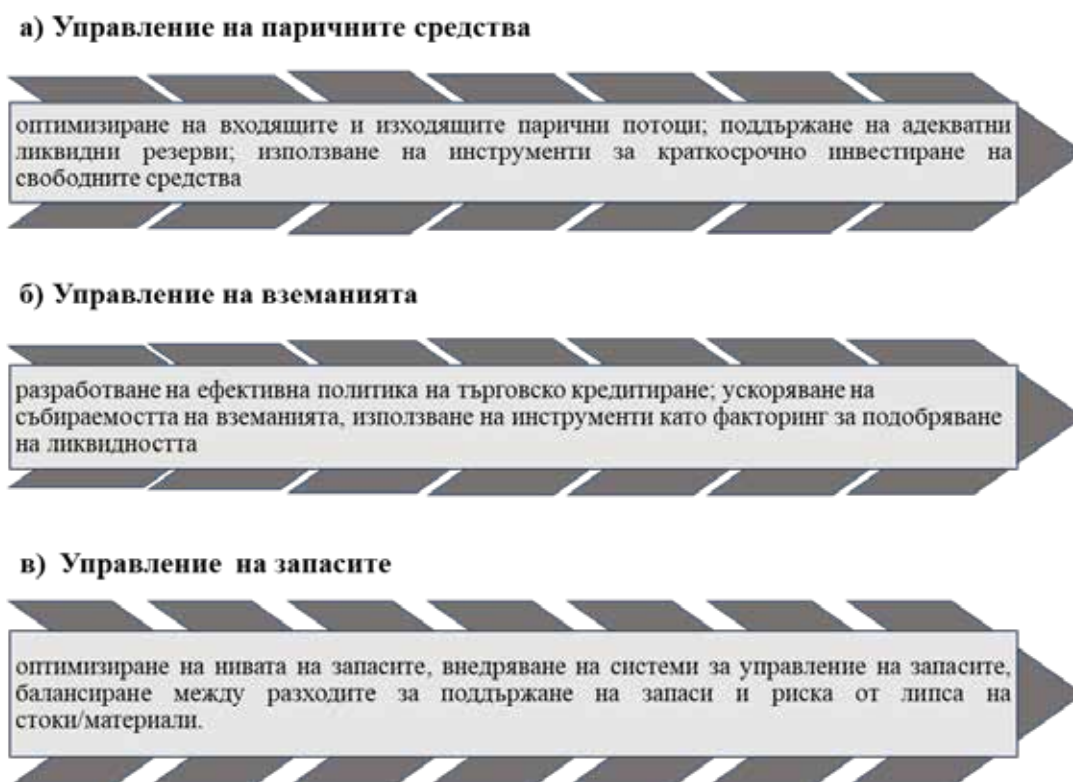
След като разгледахме източниците на финансиране за МСП, естественият следващ етап е да се фокусираме върху ефективното управление на привлечените средства. Ефективното управление на капитала е толкова важно за успеха на МСП, колкото и неговото привличане. То включва балансирано управление на оборотния капитал, разумно инвестиране и оптимизиране на капиталовата структура.

Нека разгледаме подробно тези ключови аспекти:

- Ефективно управление на оборотния капитал (парични средства, вземания, запаси)

Оборотният капитал е кръвоносната система на всяко МСП. Ефективното управление на елементите му (Фигура 5) може да бъде разликата между оцеляване и фалит, особено в периоди на икономическа нестабилност (Yotsov, 2018).

Фигура 5. Елементи на оборотния капитал



Източник: Собствено изследване.

Ефективното управление на оборотния капитал означава постоянен баланс между различните елементи.

- Балансиране на дългосрочни и краткосрочни инвестиции

МСП трябва да намерят оптимален баланс между краткосрочните нужди от ликвидност и дългосрочните инвестиции за растеж и развитие (Фигура 6). Това е ключово за устойчивото развитие на бизнеса (Chobanova, 2012).

Балансирането между краткосрочни и дългосрочни инвестиции е като „изграждане на мост между настоящето и бъдещето на бизнеса“. Трябва да се осигури стабилност в момента, без да се жертва потенциалът за бъдещ растеж.

Фигура 6. Ключови аспекти при балансиране на инвестициите

а) При краткосрочните инвестиции

да са фокусирани върху поддържане на ликвидност и оперативна ефективност; да са инвестиции в оборотен капитал и краткосрочни финансови инструменти; да са предназначени за бързо реагиране на пазарни възможности

б) При дългосрочните инвестиции

да са насочени към устойчив растеж и конкурентоспособност; да са инвестиции в дълготрайни активи, технологии и иновации; да са стратегически проекти за разширяване на бизнеса

Източник: Собствено изследване.

- Оптимизиране на капиталовата структура

Оптималната капиталова структура за МСП (Фигура 7) е тази, която минимизира цената на капитала и максимизира стойността на предприятието, като същевременно осигурява необходимата финансова гъвкавост (Petranov, 2015).

Фигура 7. Ключови аспекти при оптимизирането на капиталовата структура

а) Съотношението собствен капитал/привлечен капитал

Анализ на ползите и рисковете от различни източници на финансиране; отчитане на данъчния ефект от използването на дълг; съобразяване с отрасловите специфики и фазата на развитие на предприятието

б) Управление на финансовия лост

Балансиране между потенциала за по-висока извънредност и увеличения финансов риск; анализ на влиянието на финансовия лост върху печалбата на акция

в) Съобразяване с финансовата гъвкавост

Поддържане на резерв от неизползван дългов капацитет; осигуряване на възможности за бързо реагиране на пазарни възможности.

Източник: Собствено изследване.

Ефективното управление на капитала в МСП изисква балансиран подход към оборотния капитал, инвестициите и капиталовата структура. Успешното финансово управление в МСП е комплексна задача, изискваща както задълбочени теоретични познания, така и практически умения за адаптация към динамичната бизнес среда. То е ключово за оцеляването и растежа на предприятията, особено в условията на икономическа несигурност.

Ефективното управление на капитала в МСП е динамичен процес, който трябва постоянно да се адаптира към променящите се пазарни условия и регулаторни изисквания. То е ключово за изграждането на устойчиви и конкурентоспособни предприятия в динамичната глобална икономика (Angelov, 2020).

В условията на икономическа криза МСП трябва да разработят и приложат комплекс от финансови стратегии, които да им позволят не само да оцелеят, но и да се позиционират за бъдещ растеж след отминаването на кризата (Rangelova, 2022).

5. Изводи

Статията систематизира теоретичните аспекти на финансирането на МСП в контекста на икономическа криза и разкрива ключовата роля на МСП за българската икономика, подчертавайки значението им за създаването на работни места, стимулирането на иновациите и икономическия растеж. За да се постигне разбиране на трудностите, с които се сблъскват МСП по време на икономически кризи, са анализирани основните икономически теории: класическият подход, кейнсианството и монетаризмът. Анализът на структурата на финансите за МСП, обхващащ източници на финансиране, управление на капитала и специфичните финансови предизвикателства пред МСП, показва, че финансовата устойчивост на МСП е критичен фактор за тяхното оцеляване и просперитет. Изследването отбелязва необходимостта от адаптиране на финансовите стратегии на МСП, както и от разработване на устойчиви механизми за подкрепа, които да смекчат негативните ефекти от икономическите сътресения. Доколкото то има ограничен обхват, няма претенции да представи изчерпателен анализ на всички аспекти на финансите на МСП. Следователно са необходими допълнителни изследвания, които да се фокусират върху конкретни аспекти на финансите на МСП в условията на криза.

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EUROPEAN INTEGRATION AND THE NEED TO USE INNOVATIVE TECHNOLOGIES IN ACCOUNTING

Abstract: European integration, understood as a process of political, economic, and legal cooperation between European countries, along with digital transformation, creates the prerequisites for increasing the efficiency and productivity of accountants through the implementation of digital technologies. In the context of initializing a 'Single Digital Market' and efforts to digitize businesses and public administration, accountants can optimize their activities through digital data management tools, automated financial reporting, and real-time analytics. Innovation in accounting contributes to the improvement of financial services within the consolidated European economy while reducing the firm's expenses and ensuring compliance with Pan-European regulations. The primary goal of this study is to evaluate the potential benefits of implementing innovative digital solutions in accounting, such as reducing the time accounting staff spends on routine tasks in specialized accounting companies in Bulgaria. The object of the research is the specialized accounting companies in Bulgaria, as users of digital technologies. The subject of the research is the attitude of business owners and employees towards the usage of new digital solutions in daily operations. The research results indicate a statistically significant but weak correlation between the adoption of innovations in specialized accounting companies and the reduction of working time devoted to routine activities.

Keywords: accounting; innovation; digitalization

JEL: M41; O33; Q55

1. Introduction

Joseph Alois Schumpeter is considered to be the first to emphasize the importance of innovation in economic growth and development, arguing that innovations contribute to economic growth by improving productivity, increasing competitiveness and stimulating the entrepreneurial spirit (Georgieva, 2013).

In today's technological world, accounting activities are carried out through software solutions that potentially increase the speed and efficiency of processes. Given the above, specialized accounting companies in Bulgaria can reduce labour costs and time spent performing routine and repetitive activities by implementing new digital products, while at the same time complying with the numerous regulations introduced in recent decades by the European Union. Despite this, obstacles are preventing digital transformation in the sector. Part of these obstacles are related to organizational culture and staff motivation to work with new digital tools.

The main goal of the article is to study the potential benefit of implementing innovative digital solutions in accounting activities and the reduction of working time for accomplishing routine tasks by staff in specialized accounting enterprises in Bulgaria.

The object of the study are accountants in specialized accounting companies in Bulgaria, as users of digital technologies.

The subject of the study is the attitude of business owners and employees in the researched sector towards the use of new digital solutions in their daily activities.

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2. Overview of the Problem

At the European Union level, numerous normative regulations aim to improve corporate governance, support sustainable development and increase transparency in business. These legal acts include the Corporate Sustainability Reporting Directive (CSRD), the Markets in Financial Instruments Directive II (MiFID II), and the Corporate Tax Transparency Directive (Country-by-Country Reporting – CbCR). All of them require enterprises to declare a significant volume of data.

The promotion of digitalization and the introduction of the Single Digital Market in European jurisdictions is based on the drive to improve economic efficiency and harmonize regulatory requirements at the European level (Bughin et al., 2016). In this context, the implementation of digital technologies and software solutions in business activities (including in the activities of specialized accounting companies) is a key element of fulfilling the tasks arising from regulatory requirements.

Globalization, is understood as „the inexorable integration of markets, nation-states, and technologies... in a way that is enabling individuals, corporations, and nation-states to reach around the world farther, faster, deeper, and cheaper than ever before' (Friedman, 2012) and the technological revolution in the modern world is changing the means of collecting, processing, storing and transmitting data. Information technology contributes to the automation of many of the routine tasks in the field of accounting, creating an opportunity to carry out a rich set of activities, including data analysis and deepening the analytical and strategic role of accountants (Jablonski, Ziebecki, 2019). Businesses increasingly need accountants who can use their expertise to support companies' strategic decision-making, business management, and IT initiatives (Caglio, 2003; Goumas et al., 2018). Information technology makes it easier for accountants to perform job-related tasks more accurately and quickly (Chua, 2013). The software assists enterprises in automatic data collection, which improves process productivity (Parviainen et al., 2017). Despite the benefits, smaller companies² have reservations about adapting to innovative technologies, which may be due to insufficient financial resources or reserves on the part of assigned personnel benefitting innovation (Granlund, 2011). Previous authors' studies indicate that the size of the accounting enterprise does not influence the motivation and the possibility of implementing innovations. At the same time, the person's professional position within the company shapes a different perspective on the reasons for the slow implementation of digitalization in the sector. (Mitkova, 2023). The implementation of appropriate digital tools in the accounting activity is directly related to the development of appropriate digital skills (Georgieva, Georgieva, 2020). The lack of such skills or the reluctance to build them may be a prerequisite for a lack of motivation to implement new innovative solutions in accounting. In this context, a major influencing factor for the digital transformation of specialized accounting companies is the attitude towards adopting innovations by the accounting staff. For this attitude to be positive, the digital product must supplement the activities of accountants. Maintaining accounting and financial paperwork of an administrative nature is among the main, but also routine, activities performed by accountants (Georgieva, Georgieva, 2020). Reducing the time to perform such tasks can be considered a motive for onboarding new digital solutions.

Implementation of innovations in the accounting activity contributes to the more efficient, accurate and secure performance of accountant functions and reduces the cost of performing operational tasks (Davern et al., 2019). In this context, the work hours spent performing routine

² In this article, although we take into account the differences in the definition of the terms „enterprise“ and „company“, the terms are used synonymously based on the definition of a commercial company in the Commercial Law.

activities by accountants is a factor that should be further investigated. It is appropriate and useful to examine the current state of implementation of new technologies and innovations in accounting enterprises in Bulgaria and the time spent on routine and repetitive tasks. For this purpose, the hypothesis is formulated that:

(H1) – There is a statistically significant relationship between the use of innovative digital tools in the accounting profession and the reduction of time for performing routine tasks.

3. Research Methodology and Data Collection

To study the outlined in the article problem, an original anonymous online survey was conducted by the author. A total of 212 respondents, randomly selected using a voluntary response method, participated in the survey. Microsoft Excel was used for data analysis. The survey was conducted from October 11, 2023, to October 19, 2023. The target group consisted of accountants representing accounting firms, managers of accounting firms who are accountants by profession and perform accounting activities, operational accountants, and employees in accounting firms engaged in activities related to labour and wages and the management of human resources. The developed questionnaire has two main groups of questions. The first aims to determine the type of enterprise³ represented by the respondents and the positions performed by the respondents in these organizations. The second group of questions aims to determine whether the enterprise has implemented innovations⁴, as well as to outline the working time spent on routine and monotonous activities. Cramer's Chi-square tests are used to determine statistical dependencies and relationships.

4. Research Results

From the socio-demographic point of view, most of the respondents are representatives of micro-enterprises (about 81%), 11% are respondents from small enterprises, and 7% are from medium-sized enterprises. Most of the respondents (about 68%) have not implemented innovations in their activities in the last 2 years.

A review of the distribution of work time shows that routine activities (entering information from primary documents into accounting registers, scanning and archiving documents, etc.) have the longest duration (more than 50% of the working time) compared to all other duties of accounting (Table 1).

Using the chosen hypothesis testing method, we find a statistically significant but weak relationship between the implementation of innovations in specialized accounting enterprises and the working time spent on routine activities (Table 2).

³ By type of enterprise is meant the specified, according to Art. 3 of the Law on Small and Medium Enterprises, Pub. SN. No. 84 of 1999, last amended SN. No. 70 of 2024.

⁴ Innovation in this context is not used in the sense of a technology that is unique and is produced/invented by the accountant, but software that is created and operated worldwide, but accountants in Bulgaria implement and use it in their activities for the first time way.

Table 1. Distribution of working time for routine and uniform activities per position (%)

Position	Over 75% of working time	From 50% to 75% of working time	From 25% to 50% of working time	Under 25% of working hours	Total
Manager	12	15	16	10	53
Senior/Chief Accountant	8	9	8	2	27
Operational accountant	4	5	1	1	12
Human Resources Management	2	2	4	1	8
Total	26	31	29	14	100

Source: author's calculations.

Table 2. Hypothesis testing (H1) – There is a statistically significant relationship between the use of innovative digital tools in the accounting profession and the reduction of time for performing routine tasks

Variable	df	Level of Significance (α)	Chi-Square Value	Cramér's Value
Type of Enterprise	3	0.05	12.54	0.24

n = 212

These results confirm the conclusions of the literature review that accounting innovations reduce the time to perform routine tasks and increase efficiency. Understanding the benefits of using new technologies in accounting can have a direct impact on the motivation of accountants to implement new digital tools, as automation and innovation not only support the performance of their work duties but also create a competitive advantage that improves the quality of services and reduces operating costs.

5. Conclusions

Regulations at the European Union level increase the requirements for transparency and sustainability in businesses, which necessitates the integration of digital technologies and software solutions for data management in accordance with regulatory requirements. The Digital Single Market enables businesses to comply with legislation through standardized online data submission platforms.

On the other hand, the implementation of innovations in accounting shortens the time for fulfilling routine and repetitive duties by accountants. The digitalization and automation of some accounting activities is a process that creates prerequisites for changing the role and responsibilities of accountants. Based on our research of the specialized accounting companies in Bulgaria, we find that in the studied sector, the use of technological innovations is an exception. Accountants should be proactive in the process of digitalization and implementation of innovative software solutions to increase their productivity and meet new regulatory requirements as well as optimize accounting processes.

Further studies should investigate the possibilities of encouraging and motivating business owners and employees of specialized accounting companies in Bulgaria for onboarding innovations in accounting activities.

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