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US TARIFF CHANGES AND BULGARIA'S PRESENCE IN GLOBAL VALUE CHAINS

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Abstract. With the introduction of new tariffs and restrictions in international trade, global value chains are undergoing a transformation. Traditionally, small and open economies such as Bulgaria's are actively involved in these chains, which tie their economic dynamics to their survival. The introduction of new tariffs on goods imported into the United States has led to an escalation of reciprocal actions and an expansion of the scope of customs restrictions in mutual trade. All this requires consideration of the impact on the functioning and future of value chains and, more generally, on trade in intermediate goods. While the broader EU–US trade framework provides context, the analysis focuses mainly on Bulgaria's role as a small open economy integrated into European GVCs.

This article proposes a new methodology to assess the effects of the introduction of tariffs on trade in intermediate goods. It develops the concept of indirect exports and evaluates the effect of the new US tariffs on indirect exports of Bulgarian goods that are processed and then exported to the US. The methodology is based on an analysis of export-significant commodity items and assesses the exports of goods with Bulgarian content from Bulgaria's largest trading partners. Conclusions are drawn about the impact of the new US tariffs on participation in value chains.

The results show that indirect effects range between a reduction of 1.79% of Bulgaria's total goods exports and 0.74% of GDP, using the average value approach, and a decrease of 0.49% of total exports and 0.20% of GDP under refined commodity level assessment. These moderate losses place Bulgaria among the EU countries with relatively lower adverse effects compared to more highly exposed economies.

Keywords: global value chains; import intensity; international trade; tariffs

JEL codes: F14; F17; C53

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Introduction

The emergence of global value chains is a significant factor in Bulgaria's foreign economic relations. Participation in global value chains (GVCs) enables the country to realise its production potential and actively participate in the EU Single Market.

The crises of recent years have led to changes in the behaviour of GVCs, which are a major factor in the fragmentation of the global economy. In practice, these processes are slowing down globalisation by changing its forms of manifestation and trade patterns. The dynamics of trade flows and the growing protectionism in international trade are a challenge to the high degree of openness of the Bulgarian economy and its participation in GVCs.

The purpose of this article is to propose and approve a methodology for assessing the effects of the changed US import tariffs on the value chains created through trade in intermediate goods with the importer. This is also necessitated by the specific nature of Bulgaria's foreign trade with the US – a high relative share of intermediate goods in exports (consumer goods account for only 33% of total exports, with the rest being for further processing), instability of the commodity structure, and fragmentation of exports into small volumes. The methodology is universal and applicable to all US foreign trade partners with a fragmented export profile and a significant share of intermediate goods.

The new feature of the proposed and tested methodology is the development of two assessment variants. The first assumes that the export of capital goods, materials, and raw materials will be used to produce goods intended for export to the US. The estimate is adjusted for imposed tariffs and elasticity coefficients in the US markets. The second variant assesses the export of goods with value produced in Bulgaria, their import intensity, and the share of the Bulgarian trading partner. The methodology is applied to the structure of Bulgarian exports with an emphasis on intermediate goods and their role in global value chains. Combining aggregated simulations and positional analysis allows the assessment of indirect effects of customs changes. The inclusion of price elasticity and import intensity in the calculations provides a more realistic range of impact, especially in the context of a fragmented export structure. This approach is applicable both to Bulgaria and to other small open economies involved in intermediate stages of production chains, making it a particularly relevant tool for impact assessment in a dynamic and changing global trade environment.

Literature review

The emergence of global value chains, observed since the mid-1980s, is a result of technological developments and opportunities for the functional and geographical distribution of production (Baldwin, 2006). Trade in parts and components is also linked to investment flows and technologies that give rise to new forms of production coordination, specialisation, and reduced management costs (Baldwin, 2012).

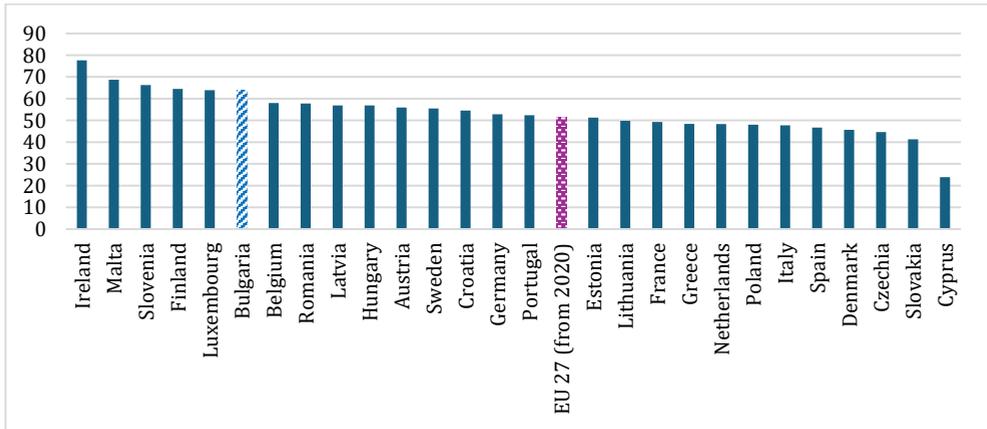
Bulgaria's membership in the EU has led to the adaptation of foreign economic relations and the integration of the national economy into European GVCs (Panusheff, 2017). Participation in GVCs is associated with changes in the organisation of production, specialisation, and the redirection of employment in foreign-orientated sectors, which is characteristic of countries such as Bulgaria (Panusheff et al., 2020). This also determines the attention in this article to the effects on value-added trade.

The growing regional nature of GVCs increases the potential for transmission of shocks between countries, including changes in trade conditions. This requires restructuring of the domestic market, which amplifies effects on value-added trade and the resilience of chains (Cigna et al., 2022). Additionally, GVCs expand the possibilities of diversification of resource supply and increase trade costs, making them the subject of trade policy (Jaax et al., 2023).

The introduction of new approaches to bilateral trade by the US administration is a reason to seek new forms of industrial policy and economic security to achieve certain national goals, which change the functioning of GVCs at the cost of export restrictions and import tariffs (Bown, 2025). As a result, companies are relocating production to avoid trade barriers and restructuring their supply chains to countries that serve as intermediaries between geopolitical rivals (Baldwin & Ruta, 2025). In this sense, the article proposes an approach to assess the impact of changes in US import tariffs on exports of goods for further processing involved in GVCs.

Background data

The presence of European GVCs in the US market is considerable, given the substantial volume of added value they bring to the creation of goods for the US market and the country's exports. This has led to an increase in trade in intermediate goods in the EU, and Bulgaria is among the countries with a high relative share (Figure 1), with Ireland having the largest exports, and Cyprus the smallest.



Source: Eurostat. Intermediate goods trade.

Figure 1. Exports of intermediate goods to the EU

Therefore, the creation of a framework for customs restrictions makes it possible to assess the effects of this trade, which is a significant factor for the Bulgarian economy. For the purposes of this study, the effects on goods that contain Bulgarian components and are exported to the United States from other countries are analysed.

Studies of several EU countries that produce more intermediate goods, including studies such as those by Hassan (2025) and Serrano (2025), apply estimates of indirect losses from the introduction of new tariffs, especially in sectors such as machinery and automotives. However, these estimates often have significantly greater latitude in assumptions, which is why, in most cases, indirect effects are estimated to be more significant than direct ones. Schneider and Sellner (2025), in turn, apply a global *input-output* model to estimate the impact on EU industries, providing quantitative estimates of transmission effects in different sectors.

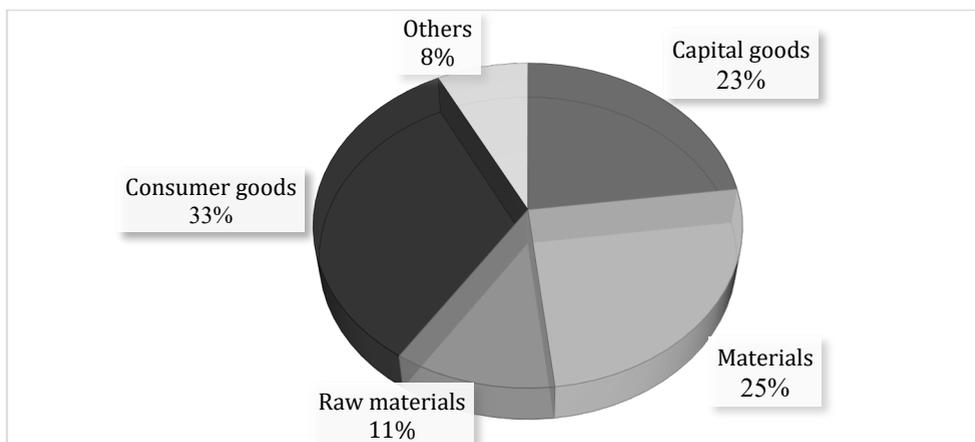
The International Monetary Fund (Eugster et al., 2022) develops a structural framework with four tariff measures that capture both the direct and indirect exposure of countries to GVCs. Analyses such as those by CEPR demonstrate how sharp tariff increases in 2025 could trigger significant reorganisations of production structures and alter international trade flows (Conteduca et al., 2025).

Studies such as those of Koopman, Wang & Wei (Koopman, Wang & Wei, 2014) show that a significant part of countries' gross exports consists of intermediate goods and components that participate in complex value-added chains. This highlights the need for methodologies that account for indirect effects and transmission channels when evaluating trade policies. In addition, Koopman, Wang & Wei develop an analytical approach to decompose gross exports into value-added and double counting¹,

¹ i.e. repeated reporting of the same value at different stages of the production process.

highlighting the role of intermediate goods in global chains. Their methodology is particularly relevant for estimating indirect effects in countries with high levels of participation in GVCs.

There are a number of reasons to assess the indirect effects of the tariffs on Bulgaria specifically. First, this stems from the structure of Bulgarian exports by type of use (Figure 2), which shows that consumer goods represent only 33% of the country's total exports, which means that a significant portion of Bulgarian exports are intended for further processing. Capital goods account for 23% of exports, raw materials for 11%, and materials for 25%.



Source: Own calculations with a transition key between CN and BEC based on Trade Map data².

Figure 2. Structure of Bulgarian exports by type of use, as of 2024 (%)

Unlike other countries, such as Slovakia, where intermediate goods are concentrated in a single sector – automotive manufacturing – Bulgarian goods for further processing are diversified across several industries, which, when incorporated into a final product, can be exported, including to the US. In this sense, the assessment of the effects of the introduction of tariffs should include not only one or two sectors, but a wider range covering goods with potential for final export to the US or participating as a component in goods for export to the US.

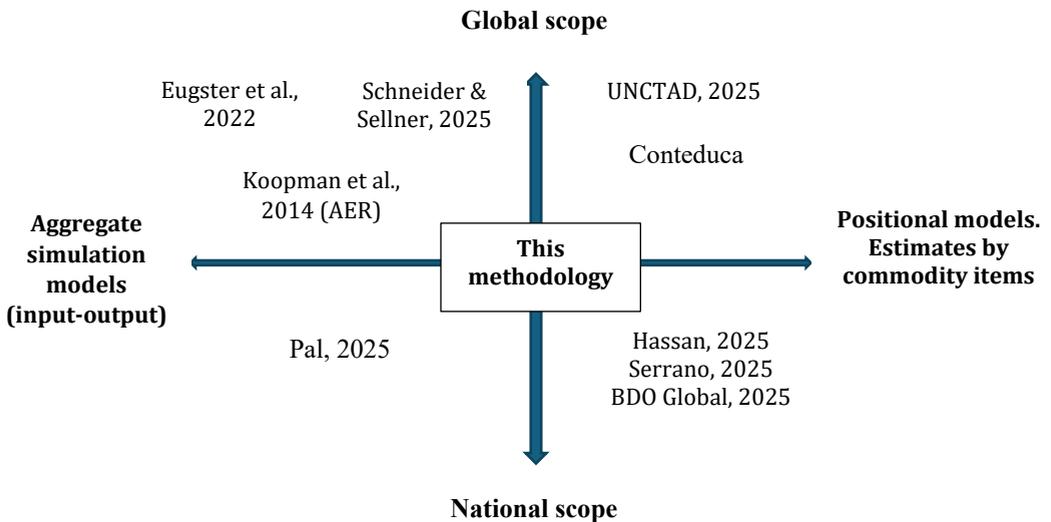
Additional research confirms that tariff changes lead to structural transformations in

² The conversion from CN (Combined Nomenclature) to BEC (Broad Economic Categories) has been carried out by applying World Bank's HS 1988/92 "Stages of Processing" methodology (WITS Product Metadata). This procedure groups tariff lines into consumer goods, intermediate goods, capital goods, and raw materials, enabling analysis of tariff escalation along the production chain. While this approach ensures comparability across countries, it involves aggregation that may obscure product-level heterogeneity and sector-specific nuances <https://wits.worldbank.org/Product-Metadata.aspx?lang=en>

global value chains. A UNCTAD report (UNCTAD, 2025) highlights that the introduction of new tariffs leads to a redirection of production and logistics flows, especially in sectors with a high degree of international integration. This creates a need for assessments that capture not only direct but also transmission effects on intermediate suppliers. An analysis by the International Trade Council (2025) examines policy scenarios of a return to protectionism in the US, showing how this leads to chain reorganisation and trade diversions. These scenarios are particularly relevant for countries like Bulgaria, which participate in the GVCs through intermediate components.

Pal, for his part, proposes a dynamic model that demonstrates how tariffs affect inflation, trade balance, and consumption through nonlinear effects over time (Pal, 2025). This confirms the need for methodologies that are not limited to static assessments but take into account market reactions. On the other hand, BDO Global's accounting perspective shows that unstable customs policies lead to difficulties in asset valuation, trade flow forecasting, and risk management (BDO Global, 2025).

This points to the need for flexible analytical tools that can adapt to different scenarios. In this context, the proposed methodology offers a novel approach by combining aggregate simulations and position-level analysis, taking into account import intensity, price elasticity, and specific tariffs. Unlike the existing approaches considered, it defines a range of effects through two variants and is applicable to economies with a fragmented export profile, such as Bulgaria.



Source: Author's interpretation based on methodological characteristics and scope of the analyses, models, and assessments discussed.

Figure 3. Positioning of the proposed methodology relative to existing approaches

Figure 3 presents the positioning of this methodology relative to different approaches in the literature. The horizontal axis reflects the degree of aggregation, from aggregated simulation models to estimates for specific commodity items. The vertical axis shows the geographical scope, from global to national focus. The proposed methodology occupies a central position, combining elements of macro-level simulations and detailed commodity analysis, which makes it fully applicable in the context of countries with a fragmented export profile.

Some of the approaches in the literature offer aggregated simulation models or sector-specific estimates, but rarely combine import intensity and price elasticity in the context of a fragmented economy. In this sense, the proposed methodology is positioned as a hybrid approach that combines quantitative estimation with a more positional analysis, suitable for small open economies like Bulgaria.

Methodology assessing the effects of tariffs on goods containing value created in Bulgaria

Due to the lack of a unified methodology that would establish the relationship between the export of raw materials and materials, processing, and inputs into production in other countries and their subsequent export, it is necessary to develop a specific methodology for assessing these effects.

The methodology includes two assessment variants that form the range of the likely indirect effect of the introduction of tariffs:

➤ ***Variant 1*** – an average approach based on assumptions of the average values of the main indicators. Under this variant, calculations are performed on all exports of capital goods, intermediate goods and raw materials from Bulgaria, using average values for the tariffs imposed on the main foreign trade partners and an average reaction of the US markets. The purpose of this assessment is to establish a maximum upper limit of the expected indirect effects. In general, average values of import intensity, US share, tariff rates, and elasticity are applied to the total exports of capital goods, intermediate goods and raw materials. The indirect export effect is derived using the following estimation equation:

$$\Delta Exports_{BG} = Exports_{BG} \times II \times USshare \times (1 - TR) \times PE$$

Whereas:

Exports_{BG} – value of Bulgarian exports of capital goods, intermediate goods and raw materials;

II (Import Intensity) – share of imports embodied in exports of the partner country (that is, how much of Bulgaria's exports are reexported after processing);

US share – relative share of the partner’s exports directed to the US market;

TR (Tariff Rate) – average new tariff imposed on exports to the US (expressed as a percentage);

PE (Price Elasticity) – responsiveness of US demand to price changes for the relevant goods;

ΔExportsBG – expected reduction in Bulgarian exports related to US processing.

Under this variant, calculations are performed on all exports of capital goods, materials, and raw materials from Bulgaria, using average values for the tariffs imposed on the main foreign trade partners and an average reaction in the US markets. The purpose of this assessment is to establish a maximum upper limit of the expected indirect effects.

➤ Variant 2 – a refined approach based on a detailed analysis of the important export commodity items. In this variant, the leading export goods from Bulgaria are analysed item by item in the groups of capital goods, intermediate goods, and raw materials. For each commodity, the participation in processing and subsequent export to the US is assumed. Partner-specific values of import intensity, US share, tariff rates, and elasticity are applied, allowing for a more precise lower-bound estimate of the indirect effects. The indirect export effect is derived using the following estimation equation:

$$\Delta ExportsBG, i = ExportsBG, i \times Ii, i \times USshare, i \times (1 - TR, i) \times PE, i$$

Whereas:

ExportsBG, i – value of Bulgarian exports of commodity *i* (capital goods, intermediate goods, or raw materials);

Ii (Import Intensity) – share of imports embodied in exports of the partner country for commodity *i*;

USshare, i – relative share of the partner’s exports of commodity *i* directed to the US market;

TRi (Tariff Rate) – tariff rate imposed on commodity *i* in exports to the US;

PEi (Price Elasticity) – responsiveness of US demand to price changes for commodity *i*;

ΔExportsBG, i – expected reduction in Bulgarian exports related to processing for the US, aggregated across all commodities *i*.

Under this variant, the leading export goods from Bulgaria, respectively, in the groups of capital goods, materials, and raw materials, are analysed by item, and an assumption is made about their participation in processing and subsequent export to the US. A

summary is prepared of the leading trading partners of Bulgaria, their import capacity, and the US share in the exports of each of the Bulgarian trading partners. The assessment defines a lower limit of the expected indirect effects.

The advantages of the chosen methodology are the following:

- assessment factors in only exports that are substantial in volume and those that lead to subsequent exports from the intermediate country;
- assumptions regarding the portion of Bulgarian goods that are subsequently exported to the US are adjusted using the import intensity indicators for exports from the country concerned;
- exports from the intermediate country to the US are not assessed in their entirety, but by taking into account the price elasticity of the relevant goods in the US market and the elasticity of domestic demand in the US;
- specific tariffs for individual goods are also considered.

The methodology developed is based on the following *limitations*: indirect effects are measured only for groups of goods accounting for more than 1% of Bulgaria's exports (direct exports to the US are also excluded), which is why only countries with significant export volumes are included in the assessment. Given these limitations, the assessment can be regarded conservative.

The methodology combines the advantages of macrostructural *input-output* approaches and more detailed positional analyses. It defines upper and lower limits through the two assessment variants, considering import intensity and price elasticity in the markets, and is applicable to countries with a fragmented commodity structure. This ensures a balance between the aggregate simulations applied by Schneider & Sellner and the more structural measures proposed by the IMF, making the estimates more realistic in the context of small open economies with a significant share of intermediate goods in exports.

The impact of the change in exported quantities is reflected in GDP through the change in the value of exports minus the imports required for their realisation. Various studies indicate an import intensity of the Bulgarian economy of around 0.4. Accordingly, the GDP effect is calculated as:

$$\Delta GDP = \Delta Exports_{BG} - IE \cdot I_1$$

Whereas:

IE – import intensity of exports (approx. 0.4 for Bulgaria);

I – value of imports.

1. Evaluation of effects under Variant 1

The indicators in Table 1 are used to perform the assessment.

Table 1. Data and average values of reduction in Bulgarian exports tied to processing for the US

Amount of exports of raw materials, materials and capital goods from Bulgaria (million euros)	Average import intensity of Bulgaria's leading trading partners (%)	Average share of exports to the US among Bulgaria's main trading partners (%)	Average new tariff for trading partners (%)	Decrease in the partner's value of exports to the US (%)	Bulgarian exports tied to processing for the US before the change in tariffs (thousand euros)	Decrease in Bulgarian exports related to processing for the US (thousand euros)
25 442 424	29.90	19.90	26.70	50.55	7 607 285	767 773

Source: Own calculations based on TradeMap data.

The average import intensity of the countries, to which Bulgaria exports raw materials, capital goods and materials, is 29.9%, which means that nearly one-third of the export of Bulgarian imported goods from the mentioned groups would participate in the country's exports, but only 19.9% of the value of the total exports of these countries is to the US before the introduction of the tariffs. For both Bulgaria and the countries importing Bulgarian goods, tariffs affect exports; therefore, the volume of their exports to the US is revalued with the average new tariffs, which are about 26.7%, since the group of the country's trading partners also includes those with tariffs other than 20%. The export potential of these countries to the United States considers the effect of tariffs using the price elasticity and domestic demand indicators. This results in a total indirect effect for Bulgarian indirect exports to countries importing Bulgarian goods in the form of a reduction in these countries' exports to the US by EUR 767.77 million, representing 1.79% of Bulgaria's total goods exports and 0.74% of GDP, respectively.

2. Assessment of indirect effects under Variant 2

This assessment measures the extent to which Bulgarian goods participate in certain commodity items in processing for export to the US from other countries, including EU member states. The sample includes only raw materials, supplies, and capital goods that form more than 1% of exports of each commodity. In this way, an average of about 60% of each commodity group is covered according to its use.

For each of the goods considered, the leading trading partners of Bulgaria in terms of exports were examined. After decomposition, the data were aggregated by country to calculate the effect by country. Data were used on the expected new tariffs for the

respective countries, the import intensity of each country (where data is missing, average values were used), and hence the expected reduction in the respective country's trade in the US market.

Table 2. Summary data by country on the reduction of Bulgarian exports tied to processing for the US

	Bulgarian exports tied to processing (thousand euros)	Import intensity of the trading partner (%)	Average share of exports per trading partner to the US (%)	Average new tariff per trading partner (%)	Decrease in the partner's value of exports to the US (%)	Bulgarian exports tied to processing for the US before the change in tariffs (thousand euros)	Decrease in Bulgarian exports related to processing for the US (thousand euros)
Bulgaria's leading trading partners Total	8 539 058	30.87	16.84	31.5	42.3	313 923	129 000

Source: Own calculations based on TradeMap data.

When calculating this second variant of the assessment, exports to Bulgaria's leading trading partners were used, which are 30. Among them, the largest is the export of the specified goods to Germany, about 3.3 billion euros, and to Italy – 1.3 billion euros. The inclusion of the remaining 28 countries in the assessment provides a higher degree of representativeness, as their exports add nearly 4.6 billion euros. Not only the volume of Bulgarian exports but also the tariffs that will be imposed on individual countries differ significantly. In this context, some of the intermediate goods that Bulgaria exports will be severely affected, for example, those exported to China, Hong Kong, Serbia, North Macedonia, etc. More favourable conditions will be created for intermediate Bulgarian goods exported to Turkey, the United Kingdom, and other countries, whose customs tariffs are expected to be 10% or be exempt from additional tariffs.

The methodology developed is based on the following limitations: indirect effects are considered only for groups of goods accounting for more than 1% of Bulgaria's exports (direct exports to the US are also excluded), which is why only countries with significant export volumes are included in the assessment. Given these limitations, the assessment can be regarded conservative.

The calculations show that the most significant loss will be incurred by Bulgarian exports to Germany of 28.7 million euros, China – 17.8 million euros, and Belgium – 10.1 million euros. In total, Bulgaria's exports to the 30 selected countries will lose 129 million euros, and when adding an estimate for the remaining countries, the total loss is 211.6 million euros.

Table 3. Variant 2 – Summary of data and values on the reduction of Bulgarian exports tied to processing for the US

Groups of goods, size		Effect of reduction in classified goods from Bulgarian exports (thousand euros)	Full effect of the reduction in all goods exports from Bulgaria (thousand euros)
Capital	63%	129 000	211 623
Materials	58%		
Raw materials	63%		

Source: Own calculations based on TradeMap data.

According to this variant of a refined assessment, the effect of the tariffs introduced by the US administration, manifested through a decrease in Bulgarian exports, will lead to a decrease in total Bulgarian goods exports by 0.49%. The decline in exports will adversely affect GDP by 0.20%.

Conclusions and recommendations

The varying degrees of interdependence of European economies with those of the US result in different effects of tariffs on individual countries. The introduction of uniform tariffs creates a level playing field between the individual EU member states, but the losses of the individual countries vary. The most significant losses are expected for Ireland, whose exports to the US account for 53% of its exports to third countries (Cyprus 1.9%). For Bulgaria, it is 7%, which places the country among those with relatively lower adverse effects. In these conditions, maintaining a common approach by all countries and taking supranational rather than national measures is of fundamental importance for adhering to the principles of the single market. As the analysis shows, Bulgarian and European companies are meeting in the already changing US goods market and maintaining fair competition between them is an important factor in absorbing this external shock to European economies.

The data show that not only is the volume of exports important, but also in what goods they are concentrated. Countries whose exports are mainly in commodity groups for which no tariffs are imposed are in a more favourable position.

The structure of Bulgaria's commodity exports to the US is, on the one hand, highly fragmented and, on the other, unstable over time. Exports include more than 450 types of goods, of which the top 50 make up 77% of exports. The unstable structure is demonstrated by the fact that 29 of them have been present in the last three years and

account for 59% of the total, but if we look at a 10-year period, only 20 out of 60 commodity groups, or 33%, have been predominantly present throughout the entire period in Bulgaria's export list to the US, i.e. the "floating part" is 67%. This makes it difficult to assess the effects of the introduction of tariffs. The assessment excludes "nontraditional goods" that have not been present in exports in recent years.

The methodology for assessing the effects of introducing tariffs on goods containing value added produced in Bulgaria has been developed in two variants. The first variant assumes that all exports of capital goods, materials and raw materials from Bulgaria will, to varying degrees, be used in exports from intermediate countries to the United States. The average values for the tariffs imposed on the main trading partners are used and the assessment is adjusted by the elasticity coefficients of the US markets for these goods. The purpose of this assessment is to establish a maximum upper limit for the expected indirect effects. The second variant involves a detailed analysis of the commodity items that are significant for exports and an assessment of the exports of goods with Bulgarian content from Bulgaria's largest trading partners, their import capacity, and the share of the US in the exports of each of Bulgaria's trading partners. The assessment defines a lower limit for the expected indirect effects.

Based on these calculations, the effects on the Bulgarian economy appear to be moderate compared to the estimates published by other countries. Each country's assessment is based on its own methodology, so comparisons are conditional. However, the immediate direct effect places us among the countries with medium-high effects – between 0.3-0.5% of GDP. Bulgaria's participation in the European GVCs requires measures to be taken to support national international competitiveness for a sustainable presence in their activities.

Based on this assessment and review of the stated intentions of other EU countries, the following guidelines can be summarised:

- *Diversification of trade relations.* The practice of large companies forming global value chains is to target other countries and regions where sanctions have a lesser effect. *First*, it is more realistic to target Bulgarian goods to established companies and markets where these goods are already present. *Second*, support the EU's positions on agreements to facilitate mutual trade with third countries. *Third*, orientation towards countries with agreed low tariffs (Turkey) and support joint activities to redirect Bulgarian exports of goods, including intermediate goods.
- *Assessment of economic dynamics in EU countries that are the main trading partners, especially in the trade of goods for further processing.* Participation in European GVCs is a prerequisite for using their market strategy, combined with

the support of national governments. This will have a beneficial effect on demand and exports to that country.

The proposed methodology can be used as a basis for developing scenarios for industry adaptation and trade diversification in the context of changing global regulations. Its flexibility and analytical precision make it applicable to other countries with similar economic structures. The results show that indirect effects range between a reduction of 1.79% of Bulgaria's total goods exports and 0.74% of GDP under the average-value approach, and a decrease of 0.49% of total exports and 0.20% of GDP under the refined commodity-level assessment. The findings highlight Bulgaria's specific position within EU value chains, rather than the general dynamics of EU-US trade. This suggests that while Bulgaria is moderately affected, its exposure is lower compared to highly integrated economies.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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ИКТ СЕКТОРЪТ В БЪЛГАРИЯ: СЪСТОЯНИЕ, ИНОВАЦИОНЕН КАПАЦИТЕТ И ПРЕДИЗВИКАТЕЛСТВА

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Резюме: Разгледано е развитието на сектора на информационните и комуникационните технологии в България в контекста на глобалната цифрова икономика, като са комбинирани теоретични постановки, емпирични данни и казуси, свързани с водещи приложно-научни институти. Представени са основни показатели за състоянието на сектора – принос към БВП, заетост, приходи, както и индекси като DESI и WDCI. Специален акцент е поставен върху ролята на институтите INSAIT и GATE като катализатори на иновационния процес чрез модела на т.нар. тройна спирала. Анализирани са техният принос за привличане на инвестиции, за развитието на човешкия капитал и за създаването на стратегически партньорства. Включени са и резултати от полуструктурирани интервюта със заинтересовани страни, които подчертават предизвикателствата пред дигиталната трансформация. Въз основа на анализа са формулирани препоръки за укрепване на взаимодействието между академичните среди, индустрията и публичния сектор с цел постигане на устойчиво развитие и повишаване на конкурентоспособността.

Ключови думи: ИКТ; иновации; тройна спирала; INSAIT; GATE

JEL codes: O31; O32; L86

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Въведение

През последните две десетилетия информационните и комуникационните технологии (ИКТ) се утвърждават като ключов двигател на икономическото развитие и на социалната трансформация. В световен мащаб секторът играе централна роля

за ускоряване на иновациите, за повишаване на производителността и за изграждане на конкурентоспособни икономики, основани на знанието (OECD, 2024; World Bank, 2024). В условията на Четвъртата индустриална революция ИКТ се превръщат в стратегически ресурс, който определя посоката на цифровата икономика и на обществото – от индустриалното производство и транспорта до здравеопазването, образованието и публичната администрация.

Следвайки тези глобални тенденции, в България ИКТ секторът се налага като един от най-динамично растящите отрасли на националната икономика. Според данни на Българската асоциация на софтуерните компании (БАСКОМ) приходите само от софтуерната индустрия достигат 4,7% от брутния вътрешен продукт (БВП) през 2023 г., което представлява значим принос към икономическото развитие и към заетостта (БАСКОМ, 2024). Макроикономическият профил на сектора сочи стабилни темпове на растеж, висока експортна ориентация и нарастваща интеграция в глобалните вериги за създаване на стойност. В същото време България продължава да изостава в редица международни индекси, измерващи цифровата трансформация и дигиталната конкурентоспособност, като Индекса за цифровата икономика и общество (DESI) и Световния индекс за дигитална конкурентоспособност (WDCI) (вж. IMD, 2024). Това изоставане поставя предизвикателства пред националната иновационна система и изисква целенасочени усилия за увеличаване на капацитета за научноизследователска и развойна дейност (НИРД).

НИРД в ИКТ сектора представляват стратегически инструмент за генериране на устойчиви конкурентни предимства. Те създават условия за разработване на нови технологии, за внедряване на иновации и за трансфер на знания между академия, индустрия и публични институции (OECD, 2015). Особено значение придобива т.нар. модел на тройната спирала (Etzkowitz & Leydesdorff, 1995), който обяснява как взаимодействието между висши училища и научни организации, бизнес и държава формира иновационни екосистеми. Приложението на този модел в България през последните години намира конкретна изява чрез създаването на високотехнологични приложно-научни институти като Института по компютърни науки, изкуствен интелект и технологии (INSAIT) и Института „Големи данни в полза на интелигентно общество“ (GATE). Тези институти привличат значителни публични и частни инвестиции и вече играят ролята на катализатори за трансфер на знания, развитие на иновации и изграждане на международни партньорства (Германова, 2021; INSAIT, 2022).

Независимо от напредъка анализите показват, че българската иновационна екосистема остава уязвима поради сравнително ниските национални разходи за НИРД, недостатъчния брой висококвалифицирани специалисти, както и заради

ограничената интеграция на малките и средните предприятия в процесите на дигитализация (Hunady et al., 2020; OECD, 2023). Това обуславя необходимостта от засилено публично-частно партньорство, от по-добро управление на човешкия капитал и от активни политики за дигитална трансформация.

В изследването ни е проучено развитието на ИКТ сектора в България в контекста на неговата роля за икономическата конкурентоспособност и за националната иновационна система. Специален акцент е поставен върху НИРД и върху приноса на двата водещи високотехнологични института INSAIT и GATE. Анализът съчетава количествени данни за състоянието на сектора и международните индекси с качествени наблюдения върху механизмите за взаимодействие между наука, бизнес и държава. Целта е да се очертаят не само постиженията, но и най-съществените предизвикателства и перспективи пред България в процеса на цифрова трансформация.

Иновации, НИРД и моделът на тройната спирала в развитието на ИКТ

В икономическата литература развитието на информационните и комуникационните технологии се разглежда като структурен фактор за ускоряване на иновациите и на цифровата трансформация. Според Организацията за икономическо сътрудничество и развитие (ОИСР) секторът се характеризира с висока динамика, с комплексна структура и със значителен мултипликативен ефект върху икономиката и върху обществото (OECD, 2011; 2024). Дефиницията на ИКТ като икономически отрасъл включва производство (хардуер и електроника), търговия и услуги – от разработка на софтуер и телекомуникации до облачни технологии и обработка на данни (OECD, 2011). Със своето влияние върху производителността, заетостта и създаването на нови бизнес модели ИКТ се превръщат в стратегически сектор на глобалната икономика (World Bank, 2024).

Емпирични изследвания показват, че растежът на добавената стойност и на заетостта в ИКТ многократно превъзхождат средните темпове за световната икономика. Например според Световната банка през периода 2000–2022 г. услугите в подсектора на информационните технологии (ИТ) бележат среден годишен ръст от 8%, което е почти два пъти повече от глобалния икономически растеж (World Bank, 2024). Подобни тенденции се наблюдават и в рамките на Европейския съюз, където броят на заетите специалисти в сферата на ИКТ е нараснал с близо 60% за десетилетие (Eurostat, 2024). Това потвърждава ролята на сектора като основен двигател на Четвъртата индустриална революция и на цифровата икономика.

Научноизследователска и развойна дейност

Централна предпоставка за конкурентоспособността на ИКТ сектора е научно-изследователската и развойната дейност. Съгласно „Наръчника на Фраскати“ НИРД обхваща фундаментални изследвания, приложни изследвания и експериментална развойна дейност (OECD, 2015). Тези три категории отразяват различни нива на трансформация на знанието – от теоретични изследвания и открития до създаването на иновативни продукти, услуги и процеси. В сферата на ИКТ това намира повсеместен израз – и при фундаменталните изследвания (разработките в областта на квантовите изчисления и невронните мрежи), и при приложните разработки (нови протоколи за сигурност в облачните технологии), и в областта на развойната дейност (блокчейн решения или цифрови асистенти).

Секторът традиционно е водещ по обем на инвестиции в НИРД. Например според OECD (2008) само полупроводниците и софтуерната индустрия усвояват над половината от средствата за изследвания и разработки в ИКТ индустрията и услугите в глобален план. Емпирични анализи, обхващащи европейски компании, потвърждават, че по-високият интензитет на НИРД е пряко свързан с производителността на труда и с добавената стойност (Hunady et al., 2020), което превръща тези дейности в стратегически лост за създаване на конкурентни предимства и на иновационен капацитет.

Публично-частни партньорства

Един от механизмите, чрез които се финансират и реализират НИРД в ИКТ, са публично-частните партньорства (ПЧП). Те позволяват споделяне на рискове и ресурси между държавата, университетите и бизнеса. Исторически примери като ARPANET и GPS показват как публичното финансиране и академичното знание, комбинирани с индустриално приложение, могат да доведат до революционни технологии с глобален ефект (ScienceDirect, n.d.; O'Connor et al., 2019). В европейския контекст програмите „Хоризонт 2020“ и „Хоризонт Европа“ изграждат редица партньорства (например 5G PPP и Big Data Value PPP), които укрепват европейския капацитет за иновации и засилват позициите на фирмите в международните вериги за създаване на стойност (European Commission, n.d-a; CORDIS, 2023).

Моделът на тройната спирала

Теоретична рамка, която може да обясни взаимодействието между различните участници в иновационния процес, е т.нар. модел на тройната спирала (Triple Helix Approach), формулиран от Etzkowitz и Leydesdorff (1995). Той представя висшите училища и научните организации, индустрията и държавата като взаимозависими актьори, чиито взаимодействия водят до създаване на нови знания, технологии и пазари. Университетите поемат предприемачески функции чрез

трансфер на технологии и стартиращи компании; бизнесът се ангажира с фундаментални изследвания; държавата действа като регулатор и катализатор на рискови проекти. Тази динамична рефлексивност ускорява иновационните цикли и разпределя риска между партньорите (Carayannis, & Campbell, 2014; OECD, 2023).

Практическата значимост на модела проличава ясно в успешни иновационни клъстери като Силициевата долина (САЩ) и Клуж-Напока (Румъния), където близостта между университети, фирми и публични институции създава благоприятна екосистема за иновации (National Research Council, 2013; Ciorba, 2015). В български контекст като стъпка към институционализиране на тройната спирала чрез съчетаване на академични изследвания, индустриално приложение и публична подкрепа могат да се разглеждат високотехнологичните институти INSAIT и GATE (GATE, n.d.; INSAIT, n.d).

Изкуствен интелект и големи данни

Съвременните високотехнологични индустрии, основани на изкуствения интелект (ИИ) и на т.нар. големи данни (Big Data), се очертават като ключови двигатели на развитието на ИКТ. ИИ вече намира приложение в индустрията, в здравеопазването, финансите, публичната администрация и т.н., а големите данни се възприемат като критична инфраструктура за цифровата икономика (OECD, 2013; 2025). С приемането през юли 2024 г. на Регламент 2024/1689, известен още като Закон за изкуствения интелект (AI Act), Европейският съюз създава първата в света всеобхватна регулаторна рамка в областта на ИИ. Макар че има за цел да насърчи безопасни и надеждни технологии, този законодателен акт поставя и немалки предизвикателства пред конкурентоспособността (European Commission, n.d.-b).

От казаното дотук може да се обобщи, че ИКТ секторът е не просто технологична сфера, а стратегически двигател на икономическо и социално развитие. НИРД и иновациите, подкрепени чрез публично-частни партньорства и модели на сътрудничество като тройната спирала, формират основата на конкурентоспособността в цифровата ера. Високотехнологичните области като изкуствения интелект и големите данни допълнително засилват значението на ИКТ за изграждане на устойчива и адаптивна икономика.

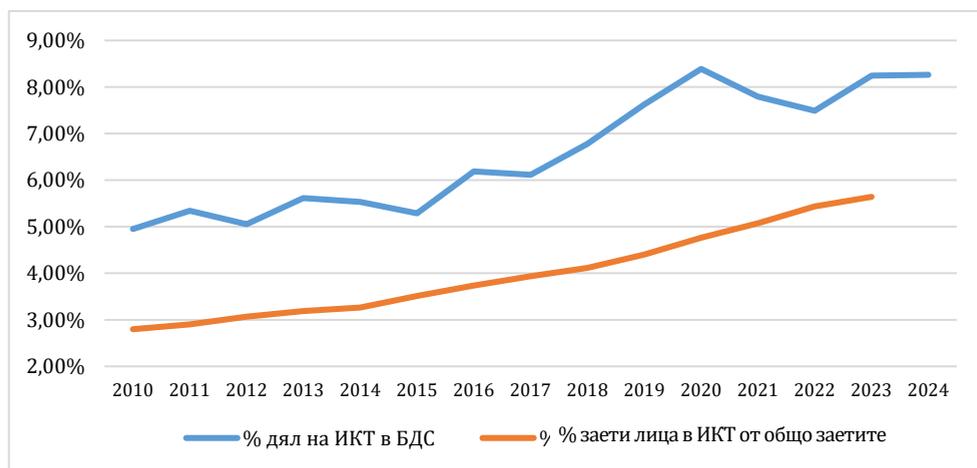
Състояние на ИКТ сектора в България – основни показатели

През последното десетилетие информационните и комуникационните технологии в България се утвърждават като един от стратегическите отрасли с висока добавена стойност и бърза динамика на растеж. В глобален план секторът се асо-

цира с Четвъртата индустриална революция и с цифровата икономика, а в национален контекст той се откроява като един от малкото икономически сектори, които демонстрират устойчив възход въпреки общите структурни слабости на българската икономика.

ИКТ секторът и неговият принос към БВП и БДС

Според данни на Националния статистически институт (НСИ, n.d.-а) дялът на ИКТ сектора в брутната добавена стойност (БДС) на България показва устойчива възходяща тенденция. За 2024 г. той достига приблизително 8,3 % от общата БДС (фиг. 1). Това поставя ИКТ сред водещите отрасли в икономиката, съпоставим по значимост с традиционни сектори като строителството и транспорта. Важно е да се подчертае, че приносът на сектора не се ограничава само до неговата пряка икономическа тежест, а включва и силен мултипликативен ефект върху други отрасли чрез внедряването на цифрови решения, оптимизация на бизнес процеси и създаването на нови пазари.



Източник: НСИ (n.d.-а) и собствени изчисления.

Фигура 1. Дял на ИКТ сектора в БДС и заетост

В същото време се наблюдава и значителен ръст на оперативните приходи. Докладът „Барометър“ на Българската асоциация на софтуерните компании отчита, че през 2023 г. приходите само от софтуерната индустрия представляват 4,7% от БВП (БАСКОМ, 2024). Това свидетелства за ролята на България като регионален център в сферата на аутсорсинга и разработката на софтуер, като секторът съчетава висока интензивност на знанието и значителна експортна ориентация.

Заетост и човешки капитал

Заетостта в ИКТ сектора също демонстрира тенденция към нарастване. През 2023 г. в рамките на Европейския съюз делът на ИКТ специалистите в общата заетост достига 4,8%, а в България 5,64% от всички заети лица в страната са били ангажирани в дейности, свързани с информационните и комуникационните технологии (вж. фиг. 1). Между 2010 и 2023 г. у нас секторът на ИКТ предлага заплати, които са над два пъти по-големи от средните, като превишението варира между 2,15 и 2,46 пъти (НСИ, n.d.-b). Това отразява устойчивата конкурентоспособност и по-високите нива на производителност в сектора. През същия период средният годишен ръст на трудовите възнаграждения в ИКТ достига 10,3%, надминавайки средния за страната ръст от 9,3%. Независимо от този растеж на заплатите България продължава да има значително предимство по отношение на разходите в сравнение с държавите от Западна Европа, което я прави привлекателна за дигитален аутсорсинг и за чуждестранни инвестиции в сектора на ИКТ (CDP, 2025). През периода 2020–2024 г. средната заплата в ИКТ сектора в България се покачва с 56%, но тя все пак остава почти двойно по-ниска от средното за ЕС (табл. 1).

Таблица 1. Средни годишни заплати в ИКТ сектора

	2020	2021	2022	2023	2024
Европейски съюз - 27 държави	29,7	30,7	32	33,8	35,5
България	12,3	13,7	15,7	17,6	19,2

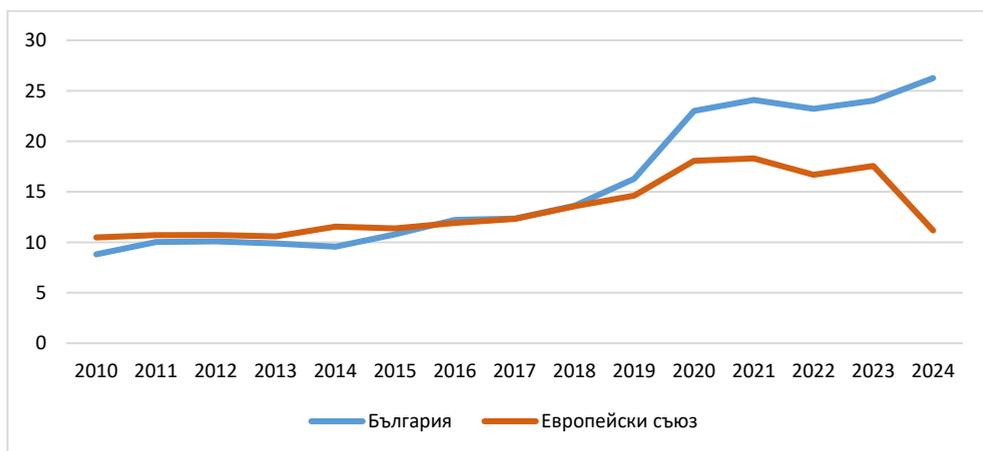
Източник: Eurostat (n.d.-a).

Особеност на българския пазар на труда е високото качество на човешкия капитал в ИКТ сектора, който разполага със специалисти, конкурентоспособни на международно ниво. Предимство за страната ни е и съчетанието от висока квалификация и сравнително ниски разходи за труд. Това обуславя привлекателността на България като дестинация за аутсорсинг на услуги, за създаване на центрове за поддръжка и за развитие на развойни дейности на международни корпорации. В същото време обаче секторът е изправен пред предизвикателства, свързани с недостига на кадри и с т.нар. изтичане на мозъци (brain drain), което поставя под въпрос устойчивостта на растежа в дългосрочен план.

Приходи, износ и чуждестранни инвестиции

ИКТ секторът е силно експортно ориентиран, защото значителна част от приходите се реализират на международните пазари. В този контекст България е добре позиционирана в областта на износа на софтуер и на ИТ услуги. През периода 2010–2024 г. износът на ИКТ услуги от страната ни като дял от общия износ на

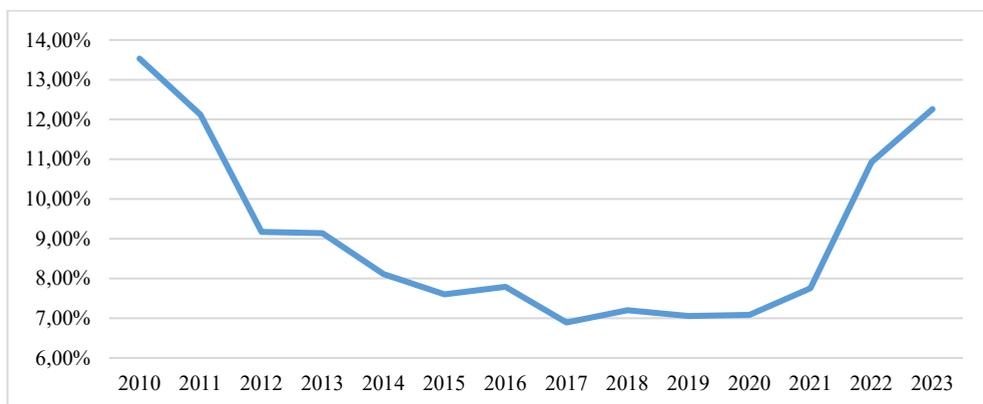
услуги е нараснал тройно и сега значително надвишава средната стойност за ЕС (World Bank, n.d.) (вж. фиг. 2). Показателен за това е фактът, че докато през 2010 г. България изостава от средното за ЕС с 1,67%, през 2024 г. вече значително надхвърля средното ниво на Съюза с цели 15%. Тази ясна възходяща тенденция свидетелства, че ИКТ секторът у нас във все по-голяма степен се насочва към износ и става все по-специализиран в международно търгуваните цифрови услуги.



Източник: World Bank (n.d.).

Фигура 2. Износ на ИКТ услуги (% от износа на услуги, платежен баланс)

Делът на преките чуждестранни инвестиции (ПЧИ) в сектора също се повишава (фиг. 3).



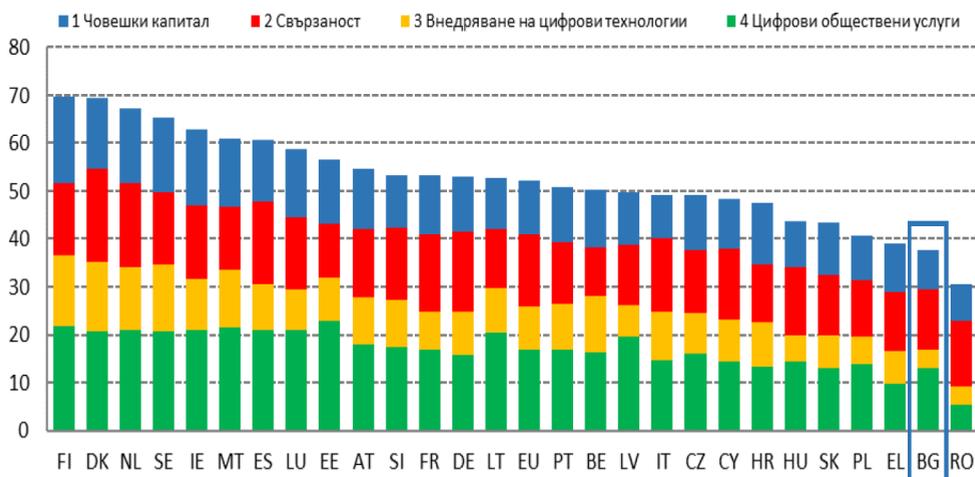
Източник: НСИ (n.d.-с.) и собствени изчисления.

Фигура 3. Дял на ПЧИ в ИКТ от всички ПЧИ в България

По данни на НСИ инвестициите в развойни дейности и ИКТ инфраструктура бележат трайно увеличение, като през последните две години се отчита значителен ръст – през 2023 г. ПЧИ в ИКТ достигат 3,21 млрд. евро, което представлява 10,93% от всички инвестиции в страната, а през 2024 г. този дял нараства до 12,26% при инвестиции от над 4 млрд. евро (НСИ, n.d.-с.). Това рязко покачване на инвестиционния дял говори за засилено доверие в дългосрочния потенциал на ИКТ сектора и го позиционира като стратегическа област за развитие в контекста на дигиталната и икономическа трансформация на България (вж. фиг. 3). Процесът е особено видим в столицата София и в други големи градове, където се концентрират бизнес паркове, развойни центрове и споделени услуги.

Показатели за цифрова трансформация: DESI

Индексът за цифровата икономика и общество (DESI), изготвян от Европейската комисия, очертава ясна картина за състоянието на цифровата трансформация у нас. В доклада за 2022 г. България заема предпоследно място сред държавите от ЕС, изпреварвайки единствено съседна Румъния. Общият резултат на страната е 37,7 при средно за ЕС 52,3 (фиг. 4). В индивидуалния доклад за България се посочва, че за последните пет години DESI на страната нараства средно 9% годишно – темп, който не е достатъчен, за да можем да догоним останалите държави членки (European Commission, 2022).

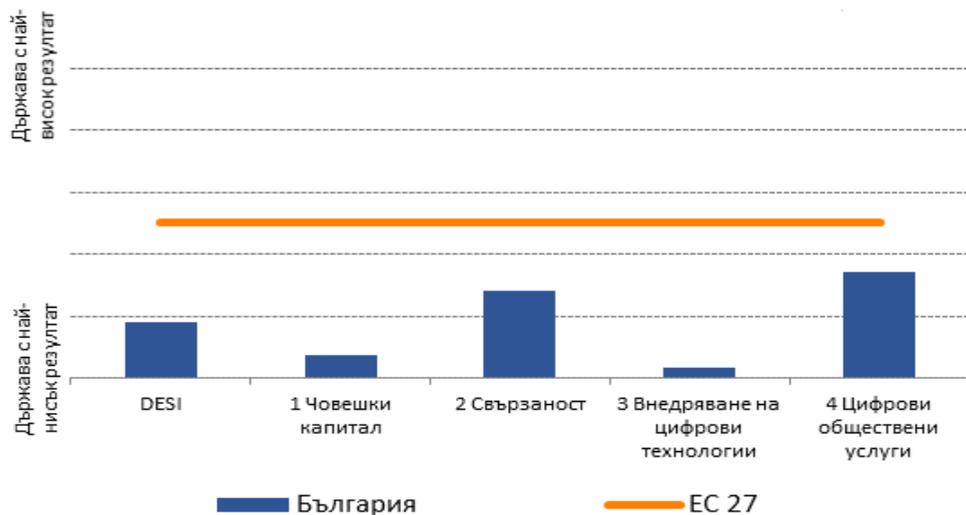


Източник: European Commission (2022).

Фигура 4. DESI 2022 – класация на държавите от ЕС

Особено слаби резултати се отчитат в областите „човешки капитал“ и „интеграция на цифрови технологии от предприятията“ (вж. фиг. 5). Това означава, че

въпреки наличието на висококвалифицирани специалисти в определени сегменти като програмиране и софтуерна разработка по-широката дигитализация на обществото и на бизнеса засега е в ограничени рамки.



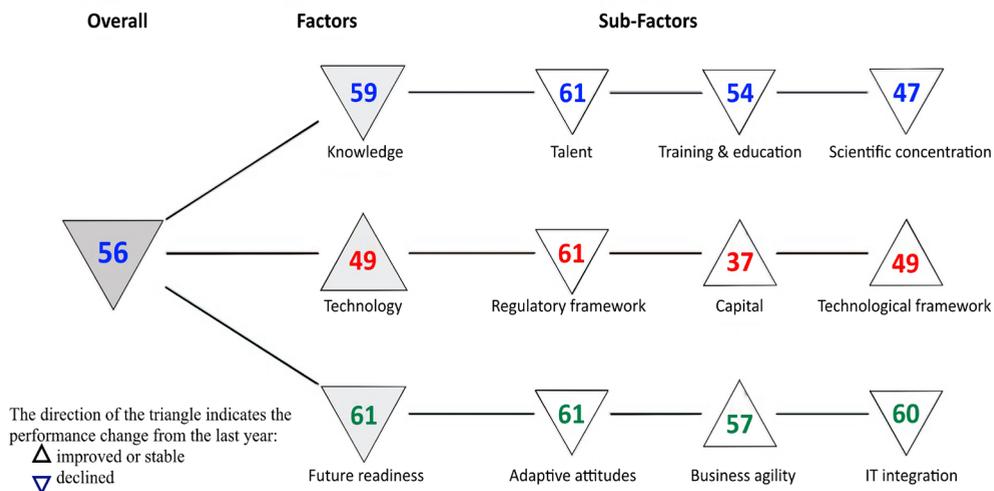
Източник: European Commission (2022).

Фигура 5. DESI 2022 – относителни резултати по измерения

Съществуват обаче и области, в които се отчита напредък. Благодарение на развитието на широколентовата интернет инфраструктура България показва относително по-добри резултати по измерението „свързаност“, както и при „цифрови публични услуги“, където се наблюдава разширяване на електронното управление. Това свидетелства, че у нас процесите на цифрова трансформация се развиват, макар все още да са неравномерни и фрагментарни.

Глобална дигитална конкурентоспособност: WDCI

Световният индекс за дигитална конкурентоспособност (World Digital Competitiveness Index, WDCI), изготвян от Международния институт за развитие на мениджмънта (IMD), също поставя България сред страните с по-ниски резултати (фиг. 6). В класацията за 2024 г. страната ни заема 56-то място с 49,22 точки, нареждайки се до Република Южна Африка, Турция, Бразилия и Колумбия. Сред държавите – членки на ЕС, България е позиционирана на последно място, като слабости се открояват най-вече в сфери като технологична инфраструктура, институционална среда и адаптивност към нови цифрови предизвикателства (IMD, 2024). Въпреки това определени показатели – например наличието на силни софтуерни компании и на квалифицирани специалисти, се оценяват като конкурентни предимства.



Източник: IMD (2024).

Фигура 6. WDCI 2023 – относителни резултати по измерения

WDCI подчертава парадоксалния характер на българския ИКТ сектор – високи резултати в специфични ниши (например аутсорсинг и програмиране), но ограничен напредък по системните параметри на националната дигитална екосистема. Това означава, че макар България да успява да интегрира високотехнологични фирми в глобалните вериги за създаване на стойност, страната изостава във формирането на среда, която да стимулира иновации на национално ниво.

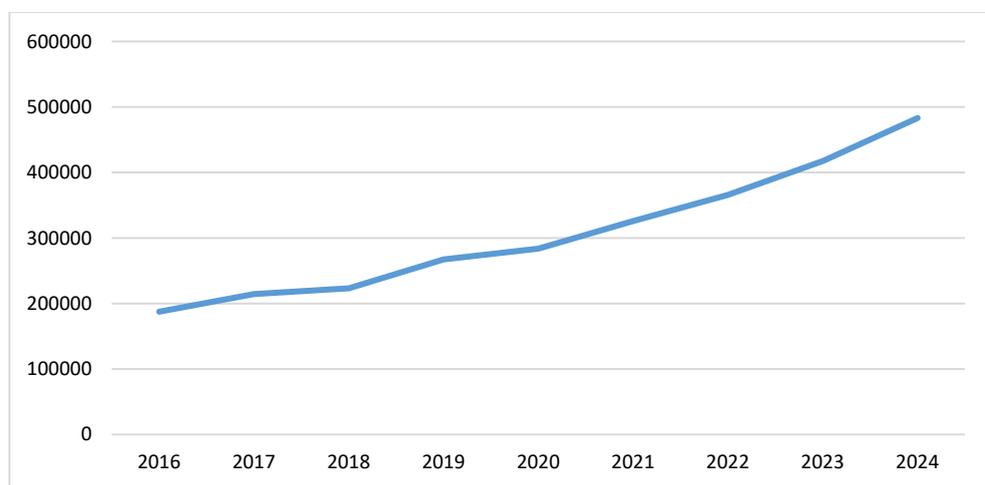
ИКТ секторът у нас се характеризира с динамично развитие и има устойчив принос към икономиката, но пред него стоят и редица структурни предизвикателства. Делът на сектора в БДС и БВП, растящите приходи и износът на услуги свидетелстват за стратегическата му роля. Същевременно слабите резултати в международните индекси DESI и WDCI показват изоставане в ключови области – човешки капитал, технологична инфраструктура и дигитална интеграция на бизнеса.

Тази двойствена картина очертава специфичната позиция на България – от една страна, конкурентна в определени сегменти на глобалната ИКТ индустрия, а от друга, изправена пред необходимостта от ускорена трансформация на институциите, образователната система и публичните политики. В този контекст ролята на научноизследователската и развойната дейност, както и на създаването на високотехнологични институти като INSAIT и GATE придобива стратегическо значение за преодоляване на дефицитите и за изграждане на устойчива национална дигитална екосистема.

Научноизследователска и развойна дейност

През 2019–2023 г. общите разходи за НИРД у нас се равняват на 0,8% от БВП (НСИ, n.d.-b), което е значително по-ниско от средното за ЕС през същия период – 2,24% (Eurostat, n.d.-b). България изостава най-много при разходите за НИРД от частния сектор – те са с близо 1% от БВП по-малко в сравнение с тези в Съюза. Въпреки това според изчисленията ни, базирани на националната статистика, през 2023 г. най-голям дял от общите разходи за НИРД на България имат разходите за предприятията – 64,3%, следвани от държавните разходи – 28,7%, тези за висшето образование – 6,5%, и за нетърговски организации – 0,45%.

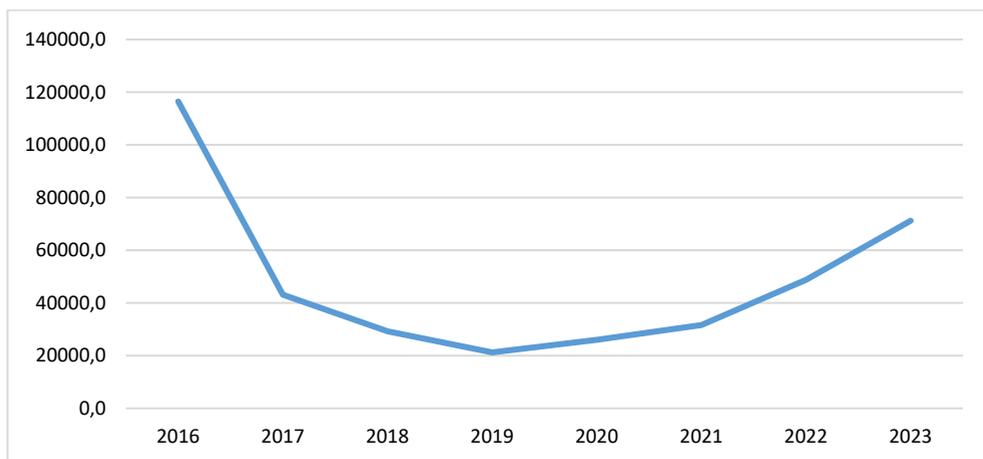
По данни на НСИ (n.d.-c) от 2016 до 2024 г. тенденцията на бюджетните разходи за НИРД по всички социално-икономически цели е трайно положителна (фиг. 7), като най-съществените увеличения спрямо предходната година са през 2019 г. (19,78%) и през 2024 г. (15,74%).



Източник: НСИ (n.d.-b), в хил. лв.

Фигура 7. Бюджетни разходи за НИРД по социално-икономически цели (общо)

По отношение на чуждестранния инвеститорски интерес тенденцията не е еднородна. От 2016 до 2019 г. се наблюдава отчетливо оттегляне на ПЧИ в НИРД – инвестициите спадат с цели 74,89% (НСИ, n.d.-c), но от 2019 г. насам чуждестранният интерес се възвръща, въпреки че все още не са достигнати нивата от 2016 г. (фиг. 8). Значително нарастване спрямо предходните години настъпва през 2022 и 2023 г. – съответно 54,30 и 45,94%. Обръщането на тенденцията и най-голямото процентно увеличение съвпадат с годините на основаване на институтите GATE и INSAIT.



Източник: НСИ (n.d.-с).

Фигура 8. ПЧИ в НИРД, в хил. евро

Ролята на INSAIT и GATE – принос към ИКТ сектора в България

Развитието на иновационната екосистема в България през последните години се свързва с появата на вече споменатите два високотехнологични изследователски института с национално и регионално значение – Института по компютърни науки, изкуствен интелект и технологии (INSAIT) и Института „Големи данни в полза на интелигентно общество“ (GATE). Те олицетворяват модела на тройната спирала чрез съчетаване на академични изследвания, бизнес партньорства и държавна подкрепа, като внасят нови измерения в капацитета на България да се позиционира като регионален център за дигитални иновации (INSAIT, n.d; GATE, n.d.).

INSAIT е създаден през 2022 г. към СУ „Св. Климент Охридски“ в партньорство с два от водещите европейски центрове по компютърни науки – Швейцарския федерален технологичен институт в Цюрих (ETH Zurich) и Политехническото училище в Лозана (EPFL). Институтът получава мащабна първоначална подкрепа от българското правителство в размер на 170 млн. лв., разпределени за период от 10 години (INSAIT, n.d.; Вавова, 2022). Допълнително се осигуряват инвестиции от международни корпорации като Google, DeepMind, Amazon Web Services и SiteGround, които създават условия за трансфер на знания и за изграждане на изследователска среда от световен мащаб (INSAIT, 2022).

Мисията на INSAIT е да привлича водещи учени в областта на компютърните науки и изкуствения интелект, да развива фундаментални и приложни изследвания и да съдейства за създаването на стартиращи компании в сферата на висо-

ките технологии. Така институтът започва да играе ролята на катализатор за интегрирането на България в глобалната карта на технологичните иновации.

GATE е основан през 2019 г., също към Софийския университет, като част от европейската мрежа от центрове за върхови постижения в областта на големите данни. Институтът е финансиран по програма „Хоризонт 2020“ и по оперативни програми на ЕС с общ бюджет над 30 млн. евро (*GATE, n.d.; European Commission, 2021*). Основната му цел е разработването на интегрирани решения за управление и анализ на големи данни с приложение в сфери като интелигентни градове, дигитално здравеопазване и интелигентно управление на ресурси.

GATE изгражда изследователска инфраструктура от национално значение, вкл. лаборатории за виртуална и добавена реалност, за облачни изчисления и центрове за обработка на данни. Чрез партньорства с международни университети и компании институтът работи за повишаване на капацитета на България в стратегически технологични области като машинното обучение и изкуствения интелект.

Привлечени инвестиции, сътрудничества и иновационен капацитет

И двата института допринасят за укрепване на иновационната екосистема чрез мащабни инвестиции и активни международни партньорства. *INSAIT* успява да привлече финансиране не само от държавния бюджет, но и от глобални технологични корпорации, които традиционно инвестират само в утвърдени научни центрове. Това е безпрецедентен случай за България и сигнал за високо доверие в нейния научен и кадрови потенциал.

От своя страна *GATE* развива сътрудничество с университети от Швеция, САЩ и Великобритания, както и с компании от областта на информационните технологии и телекомуникациите. Това поставя основите за трансфер на технологии и знания, които биха били недостижими при изцяло национално финансиране.

Иновационният капацитет на двата института се изразява не само чрез обема на изследванията, но и чрез способността им да създават нови пазари и бизнес модели. *INSAIT* има амбицията да развие стартър екосистема около института, подобна на тези в Цюрих и Лозана. Очаква се резултатите от изследванията в сфери като компютърно зрение, машинно обучение и киберсигурност да доведат до стартирането на нови високотехнологични компании.

GATE се фокусира върху приложни изследвания с пряка обществена полза, например цифрови двойници на градска инфраструктура, които позволяват моделиране и оптимизация на транспортни и енергийни системи. Това позиционира България като източник на решения за глобалните предизвикателства, свързани с устойчивост и интелигентно управление.

Резултати от полуструктурираните интервюта

За целите на изследването ни бяха проведени полуструктурирани интервюта (въпросите са поместени в Приложение 1) със служители на GATE – специалист по човешки ресурси, мениджър на програми за инкубатори и ускорители и представител на външно стратегическо партньорство. Събраната комбинация от мнения на представители на различни професионални направления, съдържаща информация за вътрешната практика (HR), за функционирането на програми за предприемачество (инкубатор/акселератор) и за опита на института в партньорството с външни заинтересовани страни, спомага да се получи по-изчерпателна представа за това как се възприема ролята на такъв вид институти в българската иновационна екосистема.

Въз основа на отговорите от проведените интервюта установяваме, че според респондентите GATE е научно-приложен институт със стратегическа важност, който интегрира фундаментални и приложни изследвания в сфери като градска среда, здравеопазване, интелигентно управление и умна индустрия. Чрез разработки като цифровите двойници на София и на човешкия мозък, както и иновативната камера за предвиждане на епилептични пристъпи, институтът показва потенциала на НИРД да влияе пряко върху качеството на живот и върху икономическата конкурентоспособност. В отговорите се подчертава значението на стратегическите партньорства, които надхвърлят финансовите параметри и включват имиджови, инфраструктурни и кадрови ресурси. В същото време анкетираните смятат, че липсата на базова дигитализация в публичния сектор и културните бариери в администрацията ограничават реалното внедряване на иновации. Те посочват, че недостигът на човешки капитал остава системен проблем, но инициативи като стажове, образователни кампании и международни проекти създават условия за развитие на следващо поколение специалисти.

INSAIT и GATE са първите по рода си изследователски институти в България, които се стремят да достигнат международни стандарти за научни постижения и технологични иновации. Техният принос към ИКТ сектора се измерва чрез привлечени инвестиции, международни партньорства, развитие на иновационна инфраструктура и стимулиране на стартиращи компании. Резултатите от интервютата показват, че ролята на INSAIT и GATE не се изчерпва с научноизследователската дейност. Те са възприемани като стратегически институции, които могат да трансформират икономическата и социалната среда в България, ако съумеят да преодолеят системните ограничения на националната иновационна екосистема.

Предизвикателства и перспективи пред модела на тройната спирала в България

Анализът на дейността на INSAIT и GATE потвърждава ключовата роля на приложно-научните институти за ускоряване на изграждането на ефективна иновационна екосистема в България. Въпреки това, за да се реализира напълно потенциала на модела на тройната спирала, използван от тези институти, трябва не само да бъдат преодолен редица предизвикателства, но и системно да се прилагат политики, които да гарантират устойчивостта на резултатите.

Един от основните проблеми е ниската цифрова готовност на публичния сектор, която ограничава интеграцията на иновации в общинската и в държавната администрация. Внедряването на VgGPT в Община Бургас и на цифровия близък на София демонстрират, че когато е налице институционална подкрепа и сътрудничество с академични центрове, цифровата трансформация може да доведе до повишаване на прозрачността и ефективността на публичното управление. Такъв тип инициативи би трябвало да се институционализират чрез създаването на специални фондове за съфинансиране на пилотни проекти в рамките на тройната спирала, които да стимулират разширяването на модела и в други общини.

Друг сериозен въпрос е свързан с регулаторните и с административните бариери, които възпрепятстват внедряването на нови технологии. В този контекст приложно-научните институти могат да функционират като посредници чрез участие в проекти за обществени поръчки, съдържащи предизвикателства. Подобен подход е в съответствие с изискванията за гъвкавост и адаптивност, характерни за съвременните иновационни системи, и би намалил пазарните бариери за стартиращи компании и за малки и средни предприятия, като същевременно формира практическа среда за внедряване на иновации.

Стабилната инфраструктура също се очертава като предпоставка за устойчиво развитие на тройната спирала. Поддържането на високопроизводителни изчислителни ресурси, лаборатории и споделени платформи за данни е необходимо условие, за да се гарантира ефективното взаимодействие между университетите, индустрията и публичните институции. Примерът с цифровия близък на София, използван като среда за експериментиране и симулации, показва как наличието на инфраструктура ускорява процеса на съвместни иновации. За да се максимизира ефектът обаче, трябва да бъдат разработени ясни правила за достъп и за споделяне на данни, които да улесняват участието и на по-малки компании.

Както посочихме, недостигът на човешки капитал остава системен проблем,

изтъкнат от респондентите и по време на проведените интервюта. За да се преодолее този дефицит, е необходимо институционализиране на програми за обмен на кадри между академичните институции и индустрията, както и създаване на съвместни магистърски и докторски програми. Особено важни са и краткосрочните форми на обучение – микросертификати и стажове, които могат да отговорят на динамично променящите се изисквания на пазара. Високата мобилност на специалистите е критичен фактор за свързването на теорията с практиката и за ускоряване на процесите на трансфер на знания.

Индустриалната ангажираност трябва да бъде насърчавана чрез съвместно финансирани проекти и чрез предоставяне на непарични ресурси – достъп до данни, инфраструктура и експертиза. Този подход не само намалява риска за стартиращите компании, но и увеличава ефективността на приложните изследвания. Съфинансираните докторски проекти, които комбинират академична и практическа перспектива, са добър пример за създаване на взаимна стойност и за задържане на таланти в страната.

Друг важен приоритет е изграждането на капацитет за управление на данни и създаването на национални езикови ресурси. Както показват инициативите на GATE и INSAIT, липсата на структурирани данни и ограничените езикови ресурси на български възпрепятстват внедряването на иновации в публичния сектор. Приложните институти могат да изпълняват ролята на посредници в разработването на рамки за безопасно и етично използване на данни, което ще улесни интегрирането на изкуствения интелект в управлението и в услугите.

Перспективите за развитие на тройната спирала в България са обещаващи, но изискват последователна подкрепа и координация. Разширяването на регулаторните лаборатории като тези в GATE и рамката COMPL-AI на INSAIT ще улесни постигането на съответствие с европейските стандарти и ще изгради доверие сред бизнеса и обществото. В допълнение, системното наблюдение и публичното отчитане на напредъка чрез общо табло с индикатори ще гарантират прозрачност и ще позволят навременни корекции в политиките.

От казаното дотук и на базата на отговорите от проведените интервюта може да се обобщи, че предизвикателствата пред българската иновационна екосистема са свързани най-вече с ограничената цифрова готовност на публичния сектор, с недостига на човешки капитал и с необходимостта от стабилна инфраструктура. Перспективите обаче показват, че при целенасочени усилия за укрепване на тройната спирала приложно-научните институти могат да се превърнат в основен двигател на цифровата трансформация и конкурентоспособността на България.

Заклучение

Представеното изследване на състоянието и перспективите на ИКТ сектора в България, обединяващо теоретичната рамка на иновациите, емпиричен преглед на основни показатели и задълбочено разглеждане на ролята на приложно-научните институти INSAIT и GATE, показва, че българският ИКТ сектор се утвърждава като стратегически двигател на икономическото развитие и конкурентоспособността на България, но същевременно се сблъсква с редица структурни предизвикателства, които изискват системни решения.

Според теоретичния модел на тройната спирала, свързан с ролята на научно-изследователската и развойната дейност в иновационната екосистема, устойчивото развитие на иновациите предполага ефективно взаимодействие между университети, индустрия и публичен сектор. Българският контекст ясно демонстрира необходимостта от подобна рамка – липсата на координация, ограничените ресурси и разпокъсаните инициативи до момента са намалявали ефективността на научните постижения и тяхното приложение в практиката. В това отношение голяма роля могат да изиграят приложно-научните институти, които съчетават академичната експертиза, индустриалните ресурси и политическата подкрепа, създавайки мост между знанието и практическата му реализация. Именно чрез тази рамка може да се оцени по-добре развитието на ИКТ сектора и неговото влияние върху цялостната икономическа трансформация на България.

Разгледаните ключови показатели за състоянието на сектора потвърждават неговото стратегическо значение. Делът на ИКТ в БВП, приносят му за заетостта и приходите, както и сравнителният анализ чрез индекси като DESI и WDCI очертават едновременно предимствата и слабостите на България в тази сфера. Положителен факт е, че страната разполага с квалифициран човешки ресурс, разходите са относително конкурентни и е налице бързо развиваща се екосистема от компании в областта на софтуера и аутсорсинга. Същевременно обаче проблеми като ниските нива на цифровизация в публичния сектор, изоставането спрямо средноевропейските показатели и ограничената инфраструктура говорят за структурни дефицити. Важно е да се подчертае, че динамиката на сектора се влияе не само от пазарните процеси, но и от ефективността на публичните политики и способността на страната да интегрира иновации в широк обществен контекст.

У нас като примери за институционализирането на модела на тройната спирала могат да послужат двата водещи високотехнологични института INSAIT и GATE. INSAIT – със своята ориентация към фундаментални изследвания и международни партньорства, и GATE – с фокуса си върху приложната наука и директните индустриални и обществени приложения, демонстрират как България

може да се позиционира като регионален лидер в областта на изкуствения интелект и големите данни. Резултатите от проведените интервюта показват, че тези институти не само генерират научни открития, но и имат способността да ги превръщат в практически решения – от цифрови двойници на градската среда и здравеопазването до регулаторни лаборатории, подпомагащи бизнеса и общините. Особено важно е, че чрез стратегически партньорства – както на национално, така и на международно ниво, те успяват да изграждат доверие и да създават нови възможности за финансиране, сътрудничество и развитие на човешки капитал.

Въпреки тези успехи анализът разкрива и редица предизвикателства. На първо място, ниската цифрова готовност на публичния сектор възпрепятства пълното внедряване на съвременни технологии. Второ, недостигът на квалифицирани кадри и конкуренцията с частния сектор ограничават възможността за дългосрочна устойчивост. На трето място, регулаторните и административните бариери забавят процеса на интеграция на нови решения в практиката.

Изводите от изследването ни и произтичащите от тях предложения за подобряване и ускоряване на цифровата трансформация и на иновационния процес в България подчертават значението на използването на системен подход – създаване на фондове за съфинансиране на пилотни проекти, институционализиране на иновации в обществените поръчки, развитие на споделена инфраструктура и лаборатории, както и въвеждане на програми за мобилност и обмен на човешки капитал. В допълнение, ангажираността на индустрията чрез непарични вноски и съфинансирани проекти, както и разработването на национални езикови ресурси и рамки за управление на данните са ключови за изграждането на устойчива дигитална екосистема.

Отделните части на изследването ни следват последователна логика: (1) теоретичната рамка очертава значението на НИРД и модела на тройната спирала, (2) емпиричният анализ на ИКТ сектора демонстрира потенциала и ограниченията му, (3) казусите с INSAIT и GATE показват как приложни институти могат да катализират иновации, а (4) разделът за предизвикателствата и перспективите формулира практически насоки за преодоляване на дефицитите. Тази цялостна структура позволява да се направи изводът, че *бъдещето на ИКТ сектора в България е неразривно свързано със способността ѝ да институционализира успешни практики и да укрепи взаимодействието между университети, индустрия и публичен сектор.*

Страната ни има потенциала да се утвърди като регионален център за изследвания и иновации в областта на цифровите технологии, но този потенциал ще остане нереализиран, ако не бъдат адресирани проблемите, свързани с човешкия

капитал, цифровата готовност и институционалната координация. В този смисъл ролята на INSAIT и GATE е не само фигуративна, но и стратегическа – с дейността си те демонстрират как дори в условията на ограничени ресурси целенасочени институции могат да променят иновационния ландшафт и да поставят България на картата на глобалните технологични процеси.

В заключение, изследването ни показва, че бъдещето на българския ИКТ сектор зависи от способността на страната да консолидира усилията на всички участници в тройната спирала. Само чрез съчетаване на научен потенциал, индустриални ресурси и публична подкрепа може да се постигне устойчива цифрова трансформация, която не само да ускори икономическия растеж, но и да подобри качеството на живот в България.

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Приложение 1

1. Според Вас кои са основните приноси на Вашия институт досега за развитието на българската ИКТ/ИИ/високотехнологична екосистема? (Тема: Институционално въздействие върху националното развитие на ИКТ/ИИ)
2. Как Вашият институт участва в стратегически партньорства с академични, бизнес или правителствени заинтересовани страни/лица и какво смятате за най-важно в тези сътрудничества? (Тема: Същност и предизвикателства на стратегическите партньорства)
3. Каква роля играят революционните технологии като изкуствения интелект и големите данни в дългосрочната стратегия за научни изследвания и иновации на Вашия институт? (Тема: Стратегическо интегриране на революционни технологии)
4. Кои са някои от основните предизвикателства, с които се сблъсква Вашият институт при развитието на НИРД в България, особено по отношение на институционални, финансови или регулаторни бариери? (Тема: Структурни и системни пречки пред НИРД)
5. Как Вашият институт работи за привличането и задържането на най-добрите таланти в областта на ИКТ и изкуствения интелект в България и виждате ли някакви промени в интереса на академичните среди и на индустрията към тази област? (Тема: Стратегии и предизвикателства пред човешкия капитал)

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THE ICT SECTOR IN BULGARIA: CURRENT STATE OF AFFAIRS INNOVATION CAPACITY AND CHALLENGES

Abstract: The article examines the development of the information and communication technologies sector in Bulgaria within the context of the global digital economy, combining theoretical perspectives, empirical data, and case studies of leading applied research institutes. Key indicators such as the sector's contribution to GDP, employment, revenue, and indexes like DESI and WDCI are presented. Particular attention is given to the role of the INSAIT and GATE institutes as catalysts of innovation through the “triple helix” model. Their contribution to attracting investments, fostering human capital, and establishing strategic partnerships is analysed in depth. The article also incorporates findings from semi-structured interviews with stakeholders which highlight the challenges facing digital transformation in Bulgaria. Based on this analysis, specific recommendations are formulated for strengthening cooperation between academia, industry, and the public sector in order to promote sustainable development and enhance Bulgaria's international competitiveness.

Keywords: ICT sector; innovation; triple helix; INSAIT; GATE

JEL codes: O31; O32; L86

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OBESITY IN BULGARIA: ECONOMIC DETERMINANTS, INTERGENERATIONAL DYNAMICS, AND POLICY IMPLICATIONS

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Abstract: Research examines obesity in Bulgaria as both a public health concern and a structural economic challenge shaped by intergenerational dynamics and institutional transformations. A fixed-effects panel data model was applied to 33 European countries (2006–2022) to test two hypotheses: that childhood overweight is a predictor of adult obesity and that a high absolute number of obese individuals maintains the phenomenon through normalisation effects. The findings confirm a strong positive association between early-age overweight and obesity in adulthood, while the role of absolute numbers appears to be more complex, reflecting demographic and structural influences. Bulgaria is identified as an “ascending-risk” case, positioned between high-income and upper-middle-income economies, where deregulated food environments and demographic decline amplify health inequalities. The study argues that obesity should not be addressed primarily through medical treatment but through preventive strategies, including early childhood interventions, nutrition programmes, and cross-sectoral coordination. Despite limitations related to age-disaggregated data and sample size, the research provides solid evidence that obesity is an economic problem with long-term consequences for human capital and sustainable development.

Keywords: Bulgaria; obesity; childhood overweight; fixed-effects model; health economics

JEL codes: C33; I18; I12

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Introduction

In economic theory and social sciences, the problem of obesity transcends the dimensions of individual health choice and is increasingly viewed as the complex result of structural economic, cultural, and behavioural interactions shaped by global, regional, and local transformations in food systems, work environments, and consumer

practices. The theoretical framework through which obesity is analysed begins with the notion of individual rational choice, extends through models from health economics, and reaches into institutional and evolutionary theories of behavioural change. At its basic level, economic theory considers body weight as a function of caloric balance – the difference between energy intake and expenditure – assuming that individuals act rationally within a context of constraints and incentives (Cawley, 2015). In this view, obesity is seen as an economically predictable outcome, resulting from the declining cost of calories and the increasing opportunity cost of the time required to burn them through physical activity (Philipson and Posner, 2008).

However, rational choice does not unfold in an idealised market environment, but in a setting characterised by behavioural deviations, incomplete information, and social asymmetries. This leads to the emergence of what is termed the "economics of temptation" – a subfield of behavioural economics wherein the abundance of fast, energy-dense but nutritionally poor foods oversatisfies caloric needs while simultaneously undermining long-term benefits of healthy eating (Thaler and Sunstein, 2009). This tension between short-term gratification and long-term harm is particularly relevant in the analysis of obesity, as consumers often act under the influence of hedonic stimuli, cultural conditioning, and social environments that tolerate or even reward excessive consumption. Furthermore, structural economic conditions, such as income, access to healthcare, urbanisation, education, and social capital, contribute to disparities in obesity rates across social groups and regions, with the most vulnerable being low-income households with limited access to healthy alternatives (Drewnowski and Specter, 2004). This hypothesis is empirically supported by numerous studies that demonstrate a strong negative correlation between economic status and the propensity to obesity, particularly in countries with higher inequality and weaker social protections.

For example, Finkelstein et al. (2005) show that obesity is not merely a medical issue, but an economic problem that generates significant externalities through increased healthcare costs, reduced productivity, and social stigma. This reveals a key feature of the economics of obesity: it is neutral to intentions but highly sensitive to context – that is, people may not want to be overweight, but under certain institutional, social, and market structures, they are highly likely to become so. The development of the theoretical paradigm from neoclassical to institutional and behavioural approaches is clearly evident in the work of Swinburn et al. (2011), who introduce the concept of the "obesogenic environment" – one that systematically encourages greater caloric intake than necessary while restricting opportunities for physical activity. This includes not only food environments, but also urban design, transport habits, advertising exposure, and educational programmes. Thus, the theoretical core of the obesity problem expands

beyond individual choice to encompass external factors, where personal responsibility is interwoven with institutional design and social norms. At the global level, these theories find empirical confirmation in the work of Popkin (2006), who introduces the concept of “nutrition transition” – a framework describing how, with economic development, globalisation, and urbanisation, developing societies shift from traditional low-calorie, plant-based diets to energy-dense diets rich in fats, sugars and animal products. The transition to nutrition is not a linear process, but contains internal cycles of adaptation, resistance, and differentiation, taking various forms and paces across countries and cultures. However, its outcomes are clearly visible in the increasing rates of obesity and associated non-communicable chronic diseases such as type 2 diabetes, cardiovascular problems, and hypertension, which, according to the World Health Organisation, now account for more than 70% of global mortality (WHO, 2022). This transforms obesity from an individual health risk into a strategic macroeconomic and social priority, particularly in ageing societies with constrained social and healthcare budgets.

In this sense, the global framework for obesity is not merely a statistical description of the increase in the number of cases, but a diagnosis of the collision between technological advancement, market logic and the biological resilience of the human body. It calls not only for medical interventions, but also for economic and regulatory mechanisms that reshaped consumption incentives, food production systems, and urban infrastructure. In the context of globalisation, where food supply chains are deeply interconnected and governed by international corporations, marketing strategies, and transatlantic policies, obesity can no longer be treated as an isolated national anomaly. Rather, it must be conceptualised as a “secondary risk” of economic development – with profound consequences for labour markets, education systems, and social integration (Brownell and Horgen, 2004). This global dimension provides the foundation upon which regional and national differences acquire additional analytical value, allowing us to understand how similar economic incentives produce varying health outcomes depending on the cultural, political, and historical context, an issue that will be the focus of the next section of this article.

Within Central and Eastern Europe, obesity takes on specific economic, social, and cultural dimensions that cannot be fully explained by universal models of nutritional transition. Instead, they require a context-specific interpretation of the historical and institutional factors that have shaped consumer attitudes and health behaviours in the post-socialist environment. The transition from planned to market economies in the region was marked not only by deep structural changes in production systems, but also by the rapid dismantling of social institutions responsible for regulating food consumption, including school meals, state public health programmes, and mechanisms

for price control on basic food items. This institutional vacuum, combined with the influx of Western food products and commercial practices, led to a rapid deregulation of the food environment. Consumer culture – represented by marginal advertising, aggressive marketing, and new patterns of status-based consumption – replaced socially guided models of nutritional assessment. Bulgaria, as a country that experienced an especially intense, yet uneven, process of market integration, proved particularly vulnerable to these types of abrupt transformations. From a demographic and economic perspective, the country is simultaneously facing population decline, ageing, and increased migration, all of which undermine the continuity of intergenerational food culture and raise the risk of health-related behavioural deficits (Ringold, 2002). Against this backdrop, adult and childhood obesity rates are increasing faster than the EU average, with the most affected being low-income households with limited access to health services or nutritional education. Empirical data from FAO, WHO, and Eurostat show that Bulgaria is among the countries with the highest relative share of obesity in Eastern Europe, with some age and gender groups reaching or exceeding the levels observed in more economically advanced nations. This raises a critical question that goes beyond biomedical considerations and touches on the economic logic and political relevance of the issue: to what extent is obesity in Bulgaria a result of global trends, and to what extent is it determined by the unique socioeconomic dynamics of the transition period? One of the defining features of the Bulgarian case is the imbalance between the increasing availability of high-energy foods and the absence of effective institutional countermeasures, whether educational, regulatory, or infrastructural, that could mitigate or redirect consumer behaviour. For example, school meals, which in Western countries are used as instruments of public policy, remain marginalised, fragmented, and lacking systematic evaluation in Bulgaria. A similar situation exists in urban planning, where the absence of integrated solutions for active transport, green spaces, and physical activity infrastructure renders obesity prevention efforts largely ineffective. Furthermore, cultural attitudes shaped by social mobility and market uncertainty increasingly associate food not with nutritional value, but with emotional comfort, compensatory consumption, and family belonging. This makes the shift to a healthier model not only economically difficult but culturally challenging as well. Against this background, Bulgaria becomes a compelling empirical case for studying structural and behavioural determinants of obesity, as well as for testing the relationship between childhood overweight and adult obesity – a connection often assumed in the literature but rarely tested at a cross-country level using quantitative panel-structured data. The empirical framework of this study, based on FAOSTAT data, includes three key indicators – the percentage of overweight children under five years of age, the percentage of obese adults (18 + years old) and the absolute number of obese individuals (in millions) – observed over the period 2006 to 2022 for

Bulgaria and comparable European countries. From both a theoretical and empirical perspective, these indicators allow the following main hypothesis to be tested:

- *(H1) The increase in the percentage of overweight children is positively associated with an increase in adult obesity at the national level, controlling for fixed effects of time and country.*

The second hypothesis, which takes a more structural perspective, is formulated as follows:

- *(H2) In countries with a higher absolute number of obese adults – regardless of the obesity rate – the persistence of high obesity levels is driven by inertial and sociocultural effects.*

These hypotheses aim not only to verify statistical relationships but also to support the analysis of how obesity becomes normalised, that is, how the accumulation of cases contributes to the cultural and institutional continuity of the phenomenon. From a methodological point of view, the choice of analytical approach must reflect the characteristics of the data. The presence of a multiyear time series, multiple countries, and within-country interdependence between indicators calls for the application of a panel econometric model. This model enables the measurement of internal relationships between variables over time for each country, while controlling for country-specific, unobserved characteristics (such as culture, institutions, and climate) that could distort results under a classic OLS framework. Specifically, the use of a fixed effects model is justified by the assumption that countries in the panel possess unique but time-invariant characteristics that must be accounted for to produce statistically and conceptually valid results. This approach is preferred over the random effects model, which assumes that individual characteristics are uncorrelated with the explanatory variables, an assumption that is difficult to defend in the context of a phenomenon as sensitive to cultural and institutional factors as obesity. Applying a fixed effects panel model allows us to identify those components of the relationship between childhood and adult obesity that are consistent over time and not influenced by historically contingent events. In this way, the economic and behavioural processes associated with obesity can be analysed not as random fluctuations but as structural relationships that are measurable and relevant to public policy.

Methodology

The research employs a panel econometric approach to analyse the structural and behavioural determinants of obesity in selected European countries, including Bulgaria, over the period 2006–2022. The core analytical premise is based on the hypothesis that childhood overweight prevalence, the absolute number of obese adults, and adult

obesity rates are jointly determined through both intergenerational health pathways and societal normalisation dynamics (Popkin, 2006; Swinburn et al., 2011). Given the temporal and cross-sectional structure of the dataset, a fixed effects panel regression model is used. This choice is theoretically grounded in the need to control for unobserved heterogeneity – country-specific factors such as cultural dietary habits, healthcare infrastructure, and institutional health policies – that remain constant over time but could bias coefficient estimates if omitted. As highlighted by Wooldridge (2010) and Baltagi (2008), panel data models provide higher statistical efficiency, allow control for omitted variables, and offer greater insight into the dynamic interplay between persistent structural influences and evolving public health outcomes.

Econometric model specification

The baseline panel fixed effects model is expressed as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \mu_i + \lambda_t + \varepsilon_{it} \tag{1}$$

where:

Y_{it} – adult obesity rate (percentage of population aged 18 and older with BMI ≥ 30) in country i and year t ; X_{1it} – percentage of children under 5 years of age who are overweight; X_{2it} – number of obese adults (in millions); μ_i – unobserved country-specific fixed effects; λ_t – year fixed effects capturing global shocks; ε_{it} – idiosyncratic error term, assumed $\varepsilon_{it} \sim N(0, \sigma^2)$.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 (X_{1it} \cdot X_{2it}) + \beta_4 Y_{(i,t-1)} + \mu_i + \lambda_t + \varepsilon_{it} \tag{2}$$

where β_4 captures the temporal inertia in obesity prevalence, while β_3 tests whether the effect of childhood overweight on adult obesity is magnified in environments where adult obesity is already widespread – reflecting societal normalisation (Christakis and Fowler, 2007).

Table 1. Operationalisation of variables

Variable	Type	Source	Description
Adult Obesity (%)	Dependent	FAOSTAT	Share of adults (18+) with BMI ≥ 30
Child Overweight (%)	Independent	FAOSTAT	Percent of children under 5 who are overweight
Obese Adults (millions)	Independent	FAOSTAT	Absolute number of obese adults aged 18+, in millions

Source: Author’s calculations.

The adult obesity rate is the primary outcome variable and reflects accumulated lifestyle and structural factors (Finkelstein et al., 2005). Childhood overweight serves as an intergenerational health risk indicator; studies have shown that early-life

overweight significantly predicts adult obesity (Han et al., 2010; Whitaker et al., 1997). The absolute number of obese adults, unlike the prevalence rate, captures the total population health burden and offers insight into the scale of normalisation effects within a society (Christakis and Fowler, 2007).

Justification for fixed effects estimation

Fixed Effects Models (FEM) are chosen over Random Effects Models (REM) due to the probable endogeneity between time-invariant country characteristics μ_i and the explanatory variables X_{kit} , while REM assumes:

$$\text{Cov}(X_{kit}, \mu_i) = 0 \quad (3)$$

This assumption is untenable in our context. Cultural, behavioural and policy determinants are expected to correlate with both obesity outcomes and their drivers. The fixed effects transformation (also known as the “within” estimator) de-means the data, removing country-specific averages:

$$Y_{it} - \bar{Y}_i = \beta_1(X_{1it} - \bar{X}_{1i}) + \beta_2(X_{2it} - \bar{X}_{2i}) + (\varepsilon_{it} - \bar{\varepsilon}_i) \quad (4)$$

This procedure removes all unobserved time-invariant heterogeneity.

Hausman test: formal implementation

To formally assess the suitability of FEM over REM, a Hausman specification test is performed based on the following test statistic:

$$H = (\hat{\beta}_{RE} - \hat{\beta}_{FE})^T [\text{Var}(\hat{\beta}_{RE}) - \text{Var}(\hat{\beta}_{FE})]^{-1} (\hat{\beta}_{RE} - \hat{\beta}_{FE}) \quad (5)$$

A statistically significant result ($p < 0.05$) implies systematic differences between estimates and thus supports the use of FEM.

Data management and processing

The empirical data set is compiled from FAOSTAT's Food Security Indicators and preprocessed using Microsoft Excel. The following steps are taken:

- **Data Consolidation:** individual indicator files are merged by year and country using INDEX-MATCH and VLOOKUP functions.
- **Missing Value Handling:** where gaps span no more than two consecutive years, linear interpolation via FORECAST.LINEAR is applied. Observations with structural missingness are excluded.
- **Normalisation and Scaling:** variables are standardised (z-scores) for robustness checks to mitigate scale discrepancies.
- **Panel Construction:** a balanced panel is constructed by retaining only countries

with full data over the study period.

- Model Estimation: the final model is estimated using the within estimator, incorporating year dummies to control for time-specific effects.
- Model diagnostics and robustness tests

To validate the reliability and specification of the model, several diagnostic tests are applied:

Breusch–Pagan Test for Heteroskedasticity:

$$BP = n \cdot R^2, \quad H_0: \text{Homoskedasticity} \quad (6)$$

The tests were applied to assess whether the variance of the residuals remained constant across observations; a significant result would indicate heteroskedasticity and justify the use of robust standard errors. The Wooldridge test for serial correlation was used to detect autocorrelation of residuals over time, while the variance inflation factor (VIF) was calculated to evaluate multicollinearity among explanatory variables, with VIF values exceeding 5 subjected to further scrutiny. Finally, an F-test for fixed effects was performed to confirm that country-specific effects significantly improved model fit compared to the pooled OLS specification. Collectively, the results of these diagnostics confirmed that the estimated fixed effect model was robust, internally consistent, and free from major specification errors.

Results and Analysis

The data set includes Bulgaria, the United States, a group of high-income economies and a group of upper-middle-income economies. Using a fixed-effects panel regression model, which controls for time-invariant country-specific factors such as institutional quality, cultural norms, health systems, and demographic structures, we estimate the temporal variation in the dependent variable, the adult obesity rate, as a function of two independent variables: the percentage of children under the age of 5 who are overweight and the number of obese adults in millions. The regression results, presented in Table 1, indicate that the variable “Child Overweight” has a positive and statistically significant coefficient ($\beta = 0.3745$; $p < 0.001$), confirming Hypothesis 1, that childhood overweight is a predictor of future adult obesity. This is in line with the literature on intergenerational health behaviour (Must and Strauss, 1999; Reilly and Kelly, 2011). Interestingly, the variable “Obese Adults” carries a negative and significant coefficient ($\beta = -0.0089$; $p = 0.026$), supporting Hypothesis 2 – that the absolute number of obese adults is not directly proportional to the percentage-based adult obesity rate, but reflects complex demographic and population-scale effects.

Table 2. Fixed Effects Panel Regression Results (2006–2022)

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Childhood Overweight (%)	0.3745	0.075	4.963	< 0.001
Obese Adults (in millions)	-0.0089	0.004	-2.307	0.026

Source: Author's calculations.

The elasticity of the adult obesity rate with respect to childhood overweight was estimated using the standard elasticity formula $\varepsilon = (\partial Y / \partial X) \times (\bar{X} / \bar{Y})$. Based on the sample averages $\bar{X} = 7.56$ and $\bar{Y} = 22.76$, the calculated elasticity is approximately 0.124. This implies that a 1% increase in the prevalence of childhood overweight is associated with a 0.124% increase in the adult obesity rate. Although the relationship is moderately elastic, it remains socially and economically significant, suggesting that even small improvements in early-life nutrition and behavioural patterns can produce measurable long-term reductions in adult obesity. Table 2 summarises the average values of the main indicators in the four analysed regions, highlighting clear structural disparities in their demographic and health profiles.

Table 3. Average values by Region (2006–2022)

Region	Average Adult Obesity Rate (%)	Childhood Overweight (%)	Obese Adults (millions)
Bulgaria	18.21	6.28	1.11
High-Income Economies	23.02	7.39	219.11
United States	37.81	8.23	93.33
Upper-Middle-Income Economies	12.01	8.32	239.75

Source: Author's calculations.

These results show that Bulgaria occupies an intermediate position, below the average levels of high-income economies but above the levels observed in upper-middle-income economies. The United States has the highest values across all indicators, validating the saturation model of obesity prevalence. On the contrary, upper-middle-income countries appear to demonstrate a “latent risk” pattern – with relatively low adult obesity rates but high childhood overweight levels, signalling a delayed public health crisis. Table 4 provides a temporal breakdown of Bulgaria's obesity dynamics during the period 2006-2010.

Table 4. Bulgaria: Key Obesity Indicators (2006–2010)

Year	Obese Adults (millions)	Childhood Overweight (%)	Adult Obesity Rate (%)
2006	1	9.9	15.8
2007	1	9.6	16.1
2008	1	9.2	16.4
2009	1.1	8.7	16.7
2010	1.1	8.1	17.1

Source: Author’s calculations

This trajectory demonstrates a simultaneous decrease in childhood overweight and a gradual increase in adult obesity, confirming the hypothesis of a delayed effect that early life health patterns translate into adult health outcomes over time. The findings support the delineation of three distinct structural models: (1) a “saturated risk” model (United States), where both absolute and relative measures of obesity are alarmingly high; (2) an “ascending risk” model (Bulgaria), characterised by rising trends but relatively moderate baseline levels; and (3) a “hidden risk” model (upper-middle-income economies), where high childhood overweight rates portend a future surge in adult obesity. Collectively, the regression model confirms both working hypotheses, demonstrates the economic and social relevance of the selected indicators, and establishes a robust empirical foundation for policy development aimed at early intervention, emphasising the need for integrated health monitoring throughout the life cycle.

Discussion

The findings of this study raise a fundamental question regarding the relationship between socioeconomic conditions, early-life behavioural health models, and the structural dynamics of obesity as a socioeconomic phenomenon. Central to the interpretation is the confirmed positive association between the proportion of overweight children under the age of five and the rate of obesity in adults. This empirical evidence is based on existing literature and provides a rationale for rethinking the time horizon of public health and economic policies. Crucially, the conclusion that early household behaviours – with regard to nutrition, physical activity, and cultural practices – generate long-term economic consequences with a deferred effect of decades frames childhood health not as a temporary condition but as a long-term asset within the structure of human capital.

Thus, the regression results not only validate Hypothesis H1, but also offer a paradigm shift in the perception of health interventions: not as cost-corrective mechanisms, but as investments whose returns materialise through reduced healthcare expenditures, increased productivity, and a lower fiscal burden on public systems. However, more important is the second key finding – the negative coefficient in the variable “number of obese adults (in millions)” – which shifts the analytical focus to the so-called “masked demographic effects.” Its economic interpretation should be approached from two directions. First, in countries with growing populations or improving general physical activity levels, the absolute number of obese individuals may increase while the percentage-based prevalence decreases, a paradox driven by an expanding denominator. Second, in the context of targeted public health policy in which risk behaviour among young people is mitigated, the obesity burden can shift statistically toward older cohorts, that is, an “age-residual risk” concentrated among the 55+ age group. This highlights the need for complementary models that include age distribution and the implementation of dynamic econometric approaches capable of capturing delayed behavioural effects. Such insights expand our understanding of obesity, not merely as a medical condition, but as an economic expression of intergenerational misallocations in health investment.

The territorial analysis reinforces this perspective. Bulgaria occupies the profile of an “ascending risk” nation: it still has a relatively low childhood obesity rate (6.28%), which coincides with a moderately high prevalence of adult obesity (18.21%) and an observable upward trend. This confirms that Bulgaria is undergoing a health transition, where dietary and consumer patterns rooted in the post-socialist era are merging with global trends of high-caloric, low-cost, and high-access food environments. In contrast, the United States embodies the “saturated risk” model – where both absolute (93 million obese individuals) and relative measures (37.8%) are alarmingly high. This structure approaches the threshold of policy effectiveness, beyond which further increases are likely to yield exponential public health costs. High-income economies (23.02%) demonstrate a moderate but stable trajectory, while upper-middle-income economies reflect the most dangerous scenario: the “hidden risk” model, relatively low adult obesity rates (12.01%) coinciding with alarmingly high childhood overweight levels (8.32%), signalling a future cost explosion if preventive interventions are not rapidly deployed. At the core of this discussion lies the question of public policy efficiency. In the context of the European Green Deal and the broader strategy for sustainable development, European healthcare systems are increasingly emphasising sustainability not only in energy but also in human capital. The results of this study demonstrate that health strategies must shift from reactive to preventive models and policy efforts must be redirected from hospital systems to schools, kindergartens, and households. When the state invests in childhood nutrition, sports infrastructure, and

educational campaigns, this effectively builds long-term budgetary stability through lower future healthcare expenditures. The economic mechanism is analogous to investing in early childhood literacy – its effects are not immediate but compound over time through higher productivity, reduced social spending, and greater fiscal resilience. Especially in countries like Bulgaria, where population ageing intersects with low levels of health literacy, such strategic repositioning is not only rational – it is essential. At the same time, several methodological limitations must be acknowledged. The fixed-effects panel model employed here controls for unobservable heterogeneity, but does not account for delayed causality or dynamic effects over time. For example, the impact of childhood overweight on adult obesity may manifest with a 10–20 year lag – an effect best captured through dynamic panel models such as Arellano–Bond or System GMM, which are infeasible given the small number of entities in this data set. Furthermore, aggregated groupings such as “high-income economies” include heterogeneous countries, and averaging them may obscure internal variance. Lastly, the inclusion of only four territorial units limits the econometric robustness. However, the statistical significance of the coefficients and their interpretive coherence support the internal validity of the model.

Conclusion

The present study developed an econometric and theoretical analysis of the factors shaping obesity as both an economic and a social phenomenon, using panel data spanning the period 2006–2022. It integrated quantitative indicators with interpretative frameworks from health economics, public policy, and behavioural science. The results of the fixed effects regression model confirmed both working hypotheses: first, that childhood overweight is a statistically significant predictor of future adult obesity; and second, that the absolute number of obese adults is not always proportional to the obesity rate, thus revealing more complex demographic and structural dynamics. These findings not only expand the empirical foundation in this domain but also offer a novel conceptualisation of obesity as a cross-sectoral indicator of the state of human capital, health literacy, and the effectiveness of social investment. A notable contribution of this study lies in its development of a comparative analytical model encompassing four territorial units – Bulgaria, the United States, a group of high-income economies, and a group of upper-middle-income economies. This approach allowed the identification of three structural archetypes: saturated risk, hidden risk, and ascending risk. This classification is not merely descriptive – it serves as an analytical instrument for policy formulation. In saturated-risk countries, policies should aim to mitigate harm and stabilise the chronic burden; in hidden-risk contexts, the priority is early prevention and the cultivation of cultural immunity; and in ascending-risk scenarios, the goal must be to halt the trajectory before it becomes

institutionalised. Bulgaria, as a representative of the latter category, has the unique opportunity to “prevent the future” through proactive interventions in school nutrition, public physical infrastructure, and parental awareness. From an economic point of view, obesity should be conceptualised not merely as a health problem, but as an accumulation of inefficiencies in human capital systems, manifesting in reduced productivity, increased social insurance burdens, and prolonged periods of work absence due to illness. In this context, every percentage point increase in obesity is not just a medical marker; it represents an economic loss of unrealised potential, both at the individual and macroeconomic levels. Therefore, future public policies must transcend the boundaries of the medical sector and embed health as a horizontal priority across education, urban planning, taxation, and labour law. Health must be seen not only as an end in itself, but also as a means to achieve sustainable development. The limitations of this study, including its restricted territorial scope and the lack of age-disaggregated data, do not diminish the validity of its findings, rather highlight avenues for future research. Subsequent studies would benefit from the inclusion of a larger number of countries, the implementation of dynamic models incorporating lagged variables, and the addition of control factors such as per capita income, urban-rural population ratios, and employment structure. Furthermore, qualitative dimensions of food culture and digital consumption habits should be integrated as new explanatory variables in an expanded model.

In conclusion, obesity, as defined and interpreted in this study, serves as a screen on which the full complexity of contemporary society is projected: its habits, its shortcomings, its policies, and its cultural values. Combating it cannot be approached unilaterally or in the short term. It requires an integrated strategy in which science, policy, and civil society act in concert, guided by strategic foresight and interinstitutional dialogue. Only then can we speak of sustainable health, not as a promise but as a measurable condition of the nation.

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Conflicts of Interest

The author has no conflicts of interest to declare.

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ECO-INNOVATION AND COMPETITIVE SUSTAINABILITY IN THE EU-27: A CROSS-SECTIONAL BENCHMARK (2024)

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Abstract: The purpose of the study is to benchmark the association between the Eco-Innovation Index and the Competitive Sustainability Index (CSI) across the EU-27 in 2024. The study used official 2024 scores and Spearman rank correlations on a cross-sectional dataset. This 2024 study of the EU-27 found a strong positive correlation between the Eco-Innovation Index and the overall Competitive Sustainability Index ($\rho=0.866$), indicating that higher eco-innovation performance is associated with greater competitive sustainability, though the strength of the association varied across CSI pillars. The study is limited to descriptive associations but provides crucial data for EU benchmarking and generating hypotheses for multi-year analyses on the relationship between eco-innovation and competitive sustainability.

Keywords: eco-innovation; competitive sustainability; EU-27; cross-sectional benchmark

JEL codes: C80; O30; O49; O57; Q56

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Introduction

The eco-innovation and competitive sustainability accomplishments of increasingly globalising nations have been highlighted as key subjects in the present economic research. Research on competitive sustainability in the context of eco-innovation, GDP growth, and economic prosperity has remained a global priority. However, because of the variety of their features and opinions, the most recent scientific publications have not provided a comprehensive examination of these subjects. A steady GDP growth rate has long been associated with a country's prosperity. A more comprehensive approach

for evaluation might be justified, though, given the variety of problems that countries have to contend with, which range from loss of biodiversity and societal division to improved green innovation and competitive sustainability performance. A more comprehensive approach for analysis might be justified, though, given the variety of problems that countries are currently facing, which range from environmental deterioration to societal division, in improving green innovation and competitive sustainability performance. Competitive sustainability performance tracks sustainable development in addition to GDP per capita and argues for a shift in thinking that considers the governing, ecological, and sociological functions of various economies. The unique characteristics of prosperity via eco-innovation and competitive sustainability performance are highlighted in this study. Measures of eco-innovation, GDP per capita, and the economic, socioeconomic, and governance performance of the EU member states were examined as certain associations between eco-innovation and competitive sustainability indicators.

Eco-innovation and different sustainability performances are acknowledged as one of the most significant aspects affecting a nation's economy and its possibilities for future prosperity. The importance of eco-innovation and competitive sustainability in promoting growth and prosperity, however, has not been examined in recent studies. A major investigation issue is addressed in significant detail in this paper: Does eco-innovation have a major role in reaching competitive sustainability in the European Union economies? The relationships between important variables have been investigated using Spearman's examination of hypotheses. Additionally, the study used the rho-p test for hypotheses, which is commonly performed on ordinal parameters, to evaluate the significance of Spearman's relationships. Spearman's rank-order associations were used to analyse the correlations between the Eco-Innovation Index, Competitive Sustainability Performance Index, GDP per capita PPP, Economic Prosperity Index, Societal Fairness Index, Governance Stability Index, and Green Environmental Index.

Governments and important stakeholders may find value in the study's conclusions. The differences in the ranking and priority of critical criteria have prepared the way for future evaluations of national economies' prosperity and the creation of plans to boost the efficiency of eco-innovation and competitive sustainability performance in the EU countries. There are five sections in this article. The first part of the article covers the introduction. The second section provides clarification on the theoretical underpinnings of current scientific studies on eco-innovation and competitive sustainability performance and their impact on national prosperity and GDP growth. The third part of the paper describes data and research methodology. The paper's fourth part assures comprehension of the research results. The fifth part of the paper presents conclusions.

Theoretical summary of actual literature

Various theoretical views exist about eco-innovation and sustainability. There is only one widely accepted name for green innovation in the scientific literature, and the existing theories have varying research scopes (Carrillo-Hermosilla et al., 2009; Ekins, 2010; Díaz-García et al., 2015; Hojnik et al., 2016; Türkeli and Kemp, 2018; de Jesus et al., 2019; Terzić, 2022; Terzić, 2024b). Although its results are usually inconclusive and it often relies on scientific methods (sustainable solutions), eco-innovation has been defined by a considerably greater level of variability than traditional innovation. The degree and scope of the different eco-innovation interpretations identified in theoretical research and commercial use vary. In general, scientists are drawn to innovations that enhance sustainability. Eco-innovation is innovation with a dominant ecological effect. The ability of an economy, its businesses, and industrial ecosystems to outperform their global counterparts in a competitive shift to a sustainable economic model through investments in deliberate innovation is known as *competitive sustainability* (CISL, 2024). CSI include four pillars: economy, society, governance, and environment.

Scientists started studying green innovation in the late 1970s (Hazarika and Zang, 2019; Urbaniec, 2015). A more thorough definition of eco-innovation was created in the latter part of the 1990s, which included "every aspect of the indicators, including suitable participants (business entities, legislatures, institutions, associations, religious groups, and households) that, as they establish creative ideas, operations, products, or processes, employ or demonstrate each other, and ultimately contribute to achieving sustainability goals or minimizing global environmental issues demands" (Faucheux et al., 1998; Porter, 2008; Rennings, 2000; Costantini and Mazzanti, 2012; Terzić, 2024a). Along with advancements in products, processes, and advertising strategies, eco-innovation also includes enhancements to institutional and social foundations. Therefore, green innovation does not necessarily have to be a global first or the result of a deliberate business initiative or strategy.

Therefore, it can be argued that any idea that surpasses significant potential with regard to positive environmental impacts is a green innovation (e.g., green regulations, advances in technology, company advancements, ecological sustainability, technological advances, products and services, and novel ideas) (Arundel and Kemp, 2009; Ghisetti et al., 2015; Nordhaus, 2021). The Eco-Innovation Scoreboard (Eco-IS) has been treated similarly. According to the EIO, green innovation is any innovation that leads to noticeable progress toward the ultimate aim of a sustainable economy, whether it is

intended to reduce negative ecological consequences or obtain more effective and ecologically conscious exploitation of resources.

The Eco-Innovation scores ranking could be used to identify the advantages and disadvantages of eco-innovation in each EU country. By promoting an extensive comprehension of economic, ecological, and social accomplishments, the Eco-Innovation Scoreboard improves other techniques of measuring national innovation, such as the International Innovation Index (European Commission, 2024). Promoting a comprehensive viewpoint on sustainability in the economy, society, and environment is the aim of the Eco-Innovation Index. Many scholars have worked to develop a research methodology to measure green innovation (Rozkrut, 2014; Horbach, 2016; Terzić, 2024a; 2024b). This contributes to the endeavour to find new methods for economic analysis. Possibilities for green innovation are particularly important for creating and implementing instruments to support sustainable development (Colombo et al., 2019; Donis et al., 2021; Terzić, 2023). Eco-innovation is crucial to achieving the European Green Deal's objective of transitioning to a zero-carbon, circular economy.

This raises an essential issue of how to tackle this interrelated group of problems in an efficient manner that incorporates them from the beginning. The Competitive Sustainability Index aims to accomplish this in a way that sets it apart from the competitiveness evaluations that have been previously mentioned. The CSI basis stays completely in line with contemporary policy and highly skilled perception on economic expansion, inventiveness, and sustainable development to provide an updated definition and comprehension of competitiveness, its motivating factors and enablers, as well as its results and impacts, even though it was created as a means of evaluating the European Commission's personalised competitive sustainability plans.

By incorporating economic considerations into sustainability, the CSI offers a more comprehensive, cohesive, and sophisticated view than the usual competitiveness ratings utilised by the EU or other organisations, as opposed to conventional methods that attempt to incorporate certain thinking about sustainability through the field of economics. This is important because it combines the numerous social, economic, governance, and environmental components that nations, their supply chains, and businesses must consider when trying to attract foreign investments.

Although being frequently utilised and cited by the EU and several other organisations, both public and private, the term "competitiveness" is missing a single, accepted definition and is still ambiguous. Despite its thorough examination, the CSI assessment is the most pertinent recent case. New perspectives on competitiveness have been influenced by the growth of sustainability theory. The scope is expanded as public policy

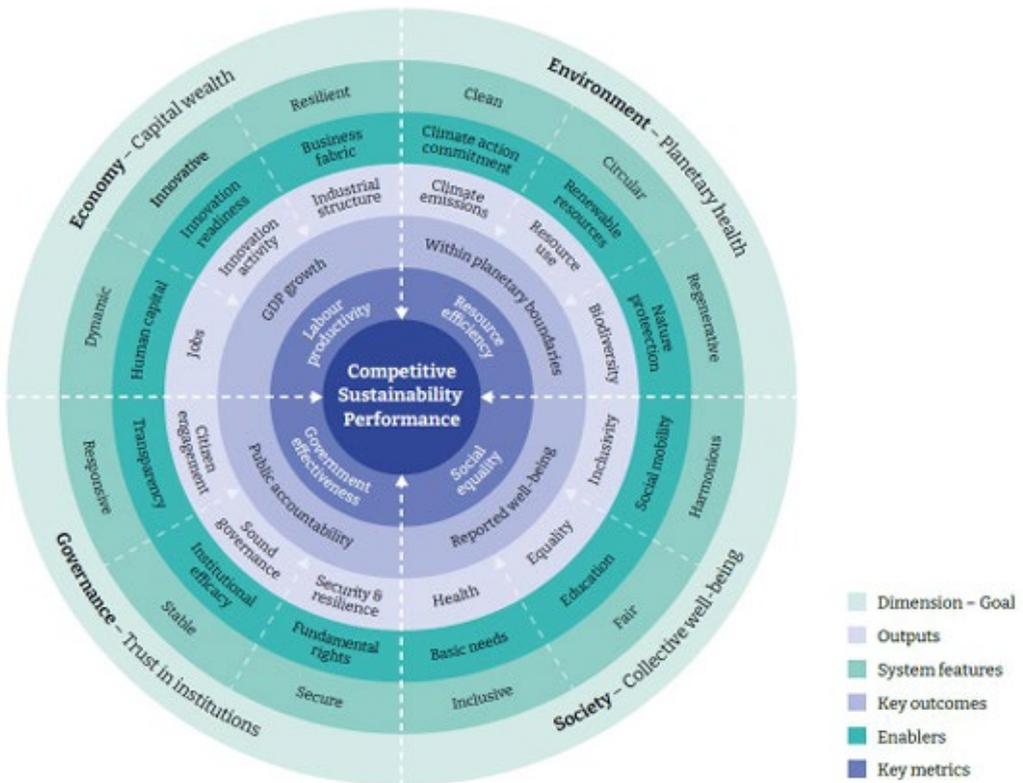
aims to address global environmental restrictions, including but not limited to carbon neutrality and social challenges, such as "well-being" or "prosperity," in addition to GDP and growth in productivity. However, the competitiveness evaluations still only take these into account as incidental factors.

Several factors are taken as variables in the above definition. Due to the monetary, social, and political benefits that an increase in competitiveness can provide, it is commonly seen as a measure of economic well-being. Nevertheless, as the CSI demonstrates, indicators that emphasise GDP and economic growth are also commonly utilised for assessing competitiveness. Still, these metrics fail to adequately address the factors that allow us to improve our complete life standard or prevent adverse environmental effects. The CSI was created with this new understanding of competition in mind. The CSI measures how well nations, their economies, and their business do for innovative projects that support the shift to sustainable development, particularly the Paris Agreement's goal of becoming climate neutral. Public officials looking to improve the planning and execution of policies to facilitate this shift, as well as other process participants from the public or private sectors or nonprofit organisations, are expected to find this index helpful.

Consequently, its main concern is on how economies, their demand chains, and innovation ecosystems function during the transition, where innovation – both digital and technology-enabled as well as socially driven – plays a crucial role in ensuring success by fusing market-oriented competition with government support and guidance (Peretto, 2015; Rogge & Reichardt, 2016). Given the broader context of this economic transformation, the Index incorporates the examination and assessment of this into an overall structure that monitors and demonstrates accomplishment on the other aspects of sustainability, including social and environmental objectives and the system of governance that supervises them. The Index outlines the framework requirements for enhancers of accomplishment as well as outputs or impacts that are revealing of effectiveness in every one of these four areas (economy, society, governance, and environment) (Figure 1).

An overview that incorporates possibilities for future advancement as well as the evaluation of existing performance may be constructed thanks to the mixture of gauges of framework circumstances or drivers on one aspect and measures of output and effects on the opposite side. This method examines the changing dynamics of the transition until it may reach a general harmony or balance and produce a model of really sustainable progress. It aims to guide activities that result in unfavourable alternatives among the four sustainability aspects.

Despite the fact that GDP disparities remain a difficult undertaking for developed as well as emerging nations, legislators, researchers, and governments continue to place a high importance on comprehending the components of green innovation and competitive sustainability performance. Do green innovation and competitive sustainability have a major role in fostering prosperity and GDP growth in EU economies? This is a crucial problem that is investigated in this work. A number of researchers have examined the relationship between GDP growth and eco-innovation (Albu, 2017; Fernandes et al., 2021; Terzić, 2022; 2023), demonstrating that the more innovative an economy is, the more likely it is to experience higher rates of GDP growth. Economic prosperity, social fairness, governance stability, and a green environment are the four facets of sustainability that are measured by the Competitive Sustainability Performance Index (CSI, 2024).



Source: CISL, 2024, p. 5.

Figure 1. Compass for Competitive Sustainability Performance

CSI, by using a "beyond Draghi" viewpoint, then enables an evaluation of the country's progress toward long-term, inclusive, and fair economic prosperity. The phrase "beyond Draghi" describes debates and projects aimed at expanding on the suggestions made in Mario Draghi's assessment of European competitiveness. In addition to tackling the need for increased EU-level cooperation and economic assistance, this entails going beyond the original report to create specific plans, especially in areas including industrial policy, regulation of competition, and technological innovation. A number of policy briefs and conferences have been produced to examine how to turn Draghi's vision into concrete measures for improving the EU's economic position. The four aspects (CSI, 2024) are:

- dynamic, innovative and resilient economy,
- inclusive, fair and harmonised society,
- responsive, stable and secure governance, and
- clean, circular and regenerative environment.

By emphasising innovation, decarbonization, and security, the European Commission's Competitive Sustainability Compass aims to strengthen Europe's resilience and competitiveness while upholding the ambitious objectives of the European Green Deal. The goals of its policy framework are to enhance coordination for quicker, more efficient decision-making, introduce new policies for an additional level up, and update current frameworks. Diversifying supply chains, improving public procurement with a European preference, reducing commercial red tape, expanding the single European marketplace, and facilitating better financing are important steps to support sustainable growth and address global issues.

Methodology and data

The University of Cambridge Institute for Sustainability Leadership (CISL) developed the CSI, which provides a data-driven evaluation of overall sustainability. The Competitive Sustainability Index's initial publication expands upon four dimensions: Green/Environment, Governance/Stability, Economy/Productivity, and Society/Fairness. Eighty-four variables make up a conceptual structure, which is then subsequently collected into thirty-one factors, ten sub-dimensions, four levels, and a comprehensive index.

The Joint Research Centre (JRC) of the European Commission is conducting revisions to maximise the Competitive Sustainability Index framework's consistency and objectivity. Policymakers and academics worldwide will be in a position to derive more pertinent and

significant recommendations to enhance or completely reveal the competitive sustainability strengths of EU member states. The European Environment Agency publishes reports regarding green innovation indicators.

Spearman's analysis of hypotheses has been used to examine the connections between significant variables. The study also assessed the significance of Spearman's relationships using the rho-p test for hypotheses, which is frequently conducted on ordinal variables. The relationships between the Eco-Innovation Index, Competitive Sustainability Performance Index, GDP per capita PPP, Economic Prosperity Index, Societal Fairness Index, Governance Stability Index, and Green Environmental Index were examined using Spearman's rank-order correlations. Data sources that were implemented to aggregate the indicators include the European Environment Agency Report, the University of Cambridge Institute for Sustainability Leadership Report, the European Commission Report, and the Eurostat countries database. This study benchmarks associations between eco-innovation and competitive sustainability across the EU-27 in 2024. The Spearman rank correlations on a cross-sectional dataset and official 2024 scores were employed in the study. The study is restricted to descriptive associations but offers vital information for EU benchmarking and developing hypotheses for multi-year analyses on the relationship between eco-innovation and competitive sustainability. Given the one-year snapshot, results should not be interpreted as trends or causal effects. To be supplemented with a content analysis of the results obtained when applying statistical methods.

Research results

The research study was carried out in the subsequent European Union countries: Finland (FI), Denmark (DK), Sweden (SE), Austria (AT), Luxembourg (LU), Italy (IT), France (FR), Germany (DE), Netherlands (NL), Spain (ES), Czechia (CZ), Slovenia (SI), Ireland (IE), Estonia (EE), Latvia (LV), Lithuania (LT), Portugal (PT), Belgium (BE), Malta (MT), Slovakia (SK), Cyprus (CY), Croatia (HR), Greece (EL), Romania (RO), Poland (PL), Hungary (HU), and Bulgaria (BG).

The collected data for each EU economy covers the period 2023–2024. Table 1 displays scores and ranks in the European Union economies based on the Eco-Innovation Index (EII), Competitive Sustainability Index (CSI), Index of GDP per capita PPP standards, Economy/Prosperity Index, Society/Fairness Index, Governance/Stability Index, and Green/Environment Index.

Table 1. Scores and ranks of EU countries by indicators of the eco-innovation index, competitive sustainability index, and index of GDP per capita PPP standards in 2024

Indicator	Eco-Innovation Index (EII)		Competitive Sustainability Index (CSI)		Index of GDP per capita PPP standards	
	Score	Rank	Score	Rank	Score	Rank
Economy						
Finland (FI)	180,8	1	72	2	103	10
Denmark (DK)	177,5	2	69	3	128	4
Austria (AT)	177,1	3	62	5	115	6
Luxembourg (LU)	175,1	4	61	6	241	1
Sweden (SE)	165,2	5	73	1	114	8
Italy (IT)	150,1	6	47	18	98	12
France (FR)	144,0	7	58	10	99	11
Germany (DE)	140,7	8	61	7	115	7
Netherlands (NL)	133,1	9	67	4	135	3
Spain (ES)	127,2	10	48	16	92	14
Czechia (CZ)	125,6	11	47	17	91	15
Slovenia (SI)	121,5	12	57	12	91	16
Ireland (IE)	121,2	13	60	8	211	2
Estonia (EE)	116,5	14	57	11	79	19
Latvia (LV)	114,7	15	49	15	71	25
Lithuania (LT)	114,7	16	51	14	87	17
Portugal (PT)	113,2	17	51	13	82	18
Belgium (BE)	109,2	18	59	9	117	5
Malta (MT)	99,2	19	44	20	109	9
Slovakia (SK)	98,9	20	45	19	75	23
Cyprus (CY)	97,6	21	39	23	95	13
Croatia (HR)	96,6	22	43	21	77	22
Greece (EL)	91,0	23	39	24	70	26
Romania (RO)	80,2	24	26	27	79	21
Poland (PL)	69,7	25	40	22	79	20
Hungary (HU)	64,4	26	37	25	77	24
Bulgaria (BG)	58,8	27	31	26	66	27

Source: EEA, 2024; CISL,2024; Eurostat countries database, 2024; author's calculations.

Based on eco-innovation rankings and scores, Finland is the highest-ranked EU country. Significant differences between EU economies were found in the Eco-Innovation Index ratings. Sweden and Finland are the top two nations in the European Union with the highest rankings and scores on the competitive sustainability index, as indicated in Table 1. Based on GDP per capita rankings and values, Luxembourg is the top EU nation. Bulgaria is the EU member state with the lowest GDP per capita and green innovation index, while Romania has the lowest ranking in terms of competitive sustainability performance.

Economic Prosperity Index, Societal Fairness Index, Governance Stability Index, and Green Environmental Index scores and rankings for EU economies are shown in Table 2. According to the Economy/Prosperity Index, the leading economies are Finland and the Netherlands. Romania is the lowest-ranked country according to the Economy/Prosperity Index and Society/Fairness. The leading economy in terms of society/fairness and green/environment is Sweden. Denmark is the highest-ranked economy on the governance stability index, while Bulgaria is the lowest-ranked economy. Cyprus is the lowest-positioned country according to the green environment index.

Table 2. Scores and ranks in the EU-27 according to the indices of economy/prosperity, society/fairness, governance/stability, and green/environment in 2024

Index	Economy/Prosperity Index		Society/Fairness Index		Governance/Stability Index		Green/Environment Index	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
EU -27								
FI	71	1	73	5	80	4	60	6
DK	50	11	75	3	87	1	65	2
AT	61	3	69	8	64	10	56	13
LU	51	10	72	6	75	5	46	20
SE	57	4	81	1	82	2	71	1
IT	38	17	51	18	42	18	57	12
FR	49	12	65	10	59	11	58	9
DE	55	5	66	9	71	7	52	16
NL	65	2	73	4	81	3	47	19
ES	32	23	57	13	49	15	54	14
CZ	42	14	54	14	49	14	44	23
SI	54	6	69	7	47	17	57	11
IE	53	7	65	11	65	8	59	8
EE	52	8	54	16	71	6	50	17
LV	37	18	49	21	50	13	61	5
LT	47	13	47	22	53	12	57	10
PT	42	15	54	15	47	16	62	3
BE	51	9	77	2	64	9	44	24
MT	33	21	49	20	41	20	54	15
SK	33	19	58	12	41	19	45	21
CY	41	16	47	24	36	21	33	27
HR	32	22	47	23	31	23	62	4
EL	30	26	40	25	25	24	59	7
RO	19	27	14	27	24	25	48	18
PL	33	20	51	17	35	22	42	25
HU	31	24	50	19	23	26	45	22
BG	31	25	32	26	22	27	39	26

Source: The University of Cambridge Institute for Sustainability Leadership (CISL) (2024) and author's calculations.

Table 3 presents relationships between the Eco-Innovation Index, Competitive Sustainability Index, Index of GDP per capita PPP standards, Economy/Prosperity Index, Society/Fairness Index, Governance/Stability, and Green/Environment in the EU economies in 2024. The estimation process was carried out using SPSS 25.

Table 3. Correlations between the Eco-Innovation Index, Competitive Sustainability Index, Index of GDP per capita PPP standards, and the indices of economy/prosperity, society/fairness, governance/stability, and green/environment in the EU-27 in 2024

	EII	CSI	EPI	SFI	GSI	GEI	GDP pc
EII	1.000	.866**	.758**	.748**	.838**	.435*	.730**
CSI	.866**	1.000	.913**	.888**	.961**	.432*	.775**
EPI	.758**	.913**	1.000	.809**	.860**	.227	.727**
SFI	.748**	.888**	.809**	1.000	.822**	.199	.752**
GSI	.838**	.961**	.860**	.822**	1.000	.357	.763**
GEI	.435*	.432*	.227	.199	.357	1.000	.101
GDP pc	.730**	.775**	.727**	.752**	.763**	.101	1.000

Note: *. Correlation is significant at the 0.05 level (two-tailed); **. Correlation is significant at the 0.01 level (two-tailed).

Source: Author's calculations.

The research done in EU economies yields a lot of recommendations. The Competitive Sustainability Index and the Eco-Innovation Index have a strong and positive correlation (0.866, where $p < 0.001$). The Governance Stability Index and Competitive Sustainability Index have been found to have a very strong positive and significant relationship (0.961, where $p < 0.001$). With a correlation coefficient of 0.913, $p < 0.001$, a very strong, positive, and significant relationship between the Economy Prosperity Index (EPI) and the Competitive Sustainability Index (CSI) has been found. A correlation coefficient of 0.888 indicates a positive relationship between the CSI and the Society Fairness Index (SFI). No statistically significant association were observed for Green Environmental Index (GEI) and the following indices, respectively: Society/ Fairness Index (0.199), Economy/ Prosperity Index (0.227), GDP per capita (0.101), Governance/Stability Index (0.357). Non-significant associations were observed between GEI and EII (0.435) and CSI (0.432), respectively.

A correlation coefficient of $r_s = 0.838$, where $p < 0.001$, indicates a very strong relationship between the Governance/Stability Index (GSI) and the Eco-Innovation Index (EII). The correlation between the Eco-Innovation Index and the Society Fairness Index is $r_s = 0.748$, $p < 0.001$. The correlation coefficient between the Green Innovation Index and GDP per capita is $r_s = 0.730$, $p < 0.001$, indicating a positive and significant relationship.

A correlation coefficient of $r_s=0.860$, $p<0.001$, indicates a very strong positive and significant relationship between the GSI and EPI. GSI and SFI have a very strong positive and significant correlation, as indicated by the correlation coefficient of $r_s=0.822$ ($p<0.001$). The GDP per capita and SFI have a significant positive correlation ($r_s=0.752$, $p<0.001$), and there is also positive and significant interdependence between the GDP per capita and EPI ($r_s=0.727$, $p<0.001$). The data confirms a very strong positive and significant association between the GSI and the GDP per capita index ($r_s=0.763$, $p<0.001$).

Restrictions

Although the study is restricted to descriptive associations and relies on official 2024 scores and Spearman rank correlations on a cross-sectional dataset, it offers vital information for EU benchmarking and the development of hypotheses for multi-year analyses on the connection between eco-innovation and competitive sustainability. While correlations can be found in a cross-sectional study, causal linkages cannot. They are unable to ascertain a series of occurrences and only record measurements once. Essentially, they measure potential causes and effects at the same time, making it difficult to discern between them. As a result, they are unable to determine how variables change or interact over time.

Conclusion

This study benchmarks associations between eco-innovation and competitive sustainability across the EU-27 in 2024. Results indicate positive cross-sectional associations ($\rho=0.866$, $p=0.961$, $p=0.913$, $p=0.888$, $p=0.838$, $p=0.748$, $p=0.730$, $p=0.860$, $p=0.822$, $p=0.752$, $p=0.727$, $p=0.763$), while some pillar-level links remain weak or non-significant. The following observations can be drawn from the significance of eco-innovation and competitive sustainability performance in boosting the future growth of EU economies. Economic prosperity, societal fairness, and governance stability performance are the most important drivers of competitive sustainability performance. The scores obtained using the appropriate metrics in the fields of eco-innovation, competitive sustainability, GDP per capita, economic prosperity, societal fairness, and governance stability can be crucial in comparing ratings between nations and provide helpful guidance in creating economic policies aimed at promoting future economic well-being. To track competitive sustainability, as well as economic growth, European nations can use the EII, CSI, EPI, SFI, GSI, and GDP per capita. Through the green transition, Europe can refocus its economic growth in a way that promotes equity and sustainability. Gross domestic product growth has been consistently associated with the idea of competitive sustainability.

The theoretical basis must be modified to include social and governance elements in addition to the competitive sustainability that regulates EU economies. Analysed indicators of eco-innovation and competitive sustainability that raise well-being across Europe can be useful to policymakers. Competitive sustainability performance and eco-innovation can improve the efficacy and adaptability of social and economic structures. A key component of achieving competitive sustainability performance is eco-innovation directed to economic prosperity, societal fairness, and governance stability. Although the study is restricted to descriptive associations and relies on official 2024 scores and Spearman rank correlations on a cross-sectional collection of data, it offers vital information for EU benchmarking and the development of concepts for multi-year assessments on the link between eco-innovation and competitive sustainability. Future work should extend the analysis to a multi-year panel to assess stability over time.

Conflicts of Interest

The author has no conflicts of interest to declare.

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Appendix

Indicators scores

Indicator	Eco-Innovation Index	Competitive Sustainability Index	Index of GDP per capita PPP standards	Economy/ Prosperity Index	Society/Fairness Index	Governance/ Stability Index	Green/ Environment Index
Economy	Score	Score	Score	Score	Score	Score	Score
Finland (FI)	180,8	72	103	71	73	80	60
Denmark (DK)	177,5	69	128	50	75	87	65
Austria (AT)	177,1	62	115	61	69	64	56
Luxembourg (LU)	175,1	61	241	51	72	75	46
Sweden (SE)	165,2	73	114	57	81	82	71
Italy (IT)	150,1	47	98	38	51	42	57
France (FR)	144,0	58	99	49	65	59	58
Germany (DE)	140,7	61	115	55	66	71	52
Netherlands (NL)	133,1	67	135	65	73	81	47
Spain (ES)	127,2	48	92	32	57	49	54
Czechia (CZ)	125,6	47	91	42	54	49	44
Slovenia (SI)	121,5	57	91	54	69	47	57
Ireland (IE)	121,2	60	211	53	65	65	59
Estonia (EE)	116,5	57	79	52	54	71	50
Latvia (LV)	114,7	49	71	37	49	50	61
Lithuania (LT)	114,7	51	87	47	47	53	57
Portugal (PT)	113,2	51	82	42	54	47	62
Belgium (BE)	109,2	59	117	51	77	64	44
Malta (MT)	99,2	44	109	33	49	41	54
Slovakia (SK)	98,9	45	75	33	58	41	45
Cyprus (CY)	97,6	39	95	41	47	36	33
Croatia (HR)	96,6	43	77	32	47	31	62
Greece (EL)	91,0	39	70	30	40	25	59
Romania (RO)	80,2	26	79	19	14	24	48
Poland (PL)	69,7	40	79	33	51	35	42
Hungary (HU)	64,4	37	77	31	50	23	45
Bulgaria (BG)	58,8	31	66	31	32	22	39
Eco-Innovation Index	https://www.eea.europa.eu/en/analysis/indicators/eco-innovation-index-8th-eap (Accessed 16 March 2025)						
Competitive Sustainability Index, Economy/Prosperity Index, Society/ Fairness Index, Governance/Stability Index, Green/Environment Index	https://www.cisl.cam.ac.uk/files/2024_competitive_sustainability_index_summary.pdf (Accessed 16 March 2025)						
Index of GDP per capita PPP standards	https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Purchasing_power_parities_and_GDP_per_capita_-_preliminary_estimate (Accessed 17 March 2025)						

ЕВРОТО, ФИНАНСОВАТА ГРАМОТНОСТ И ОПИТЪТ НА ДРУГИТЕ СТРАНИ: СРАВНИТЕЛЕН АНАЛИЗ

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Резюме: Анализирана е ключовата роля на финансовата грамотност на населението за предстоящото въвеждане на еврото в България, разглеждайки прехода като фундаментална промяна, която поражда значителни възможности и системни рискове. Емпиричните данни разкриват дефицит на подходящи знания и умения в тази област, който може да задълбочи редица пазарни неефективности и да стане причина за ценова спекулация и за обществено недоволство. Във връзка с това са очертани икономическите и социалните императиви на грамотността: улесняване на ценовите сравнения, защита от измами и укрепване на доверието. Предложена е многопластова национална стратегия, съчетаваща: (1) системно финансово образование във всички степени; (2) мащабни неформални програми за уязвими възрастни; (3) дигитални калкулатори и мобилни приложения; (4) комуникационни кампании, адаптирани към демографските особености, и (5) координация между правителството, БНБ, бизнеса и НПО.

Представеният сравнителен анализ на опита на Естония, Литва и Хърватия идентифицира работещи инструменти: задължително двойно изписване на цените, етични кодекси за бизнеса, безплатен обмен на кеш и мобилни информационни екипи. Опитът показва, че комбинацията от превантивни проверки, оповестяване на нарушителите и глоби ограничава инфлационния ефект и увеличава доверието. Повишената грамотност ускорява интеграцията чрез по-ниски трансакционни разходи, привличане на инвестиции и стабилизиране на инфлационните очаквания. В заключение е подчертано, че България спешно трябва да приеме комуникационна стратегия с измерими цели ($\geq 80\%$ информираност, $\geq 60\%$ подкрепа), да засили контрола върху цените и да превърне въвеждането на еврото в „обществен договор“ между всички сектори. Реформата изисква стратегическа управленска воля и е едновременно политически и социален императив.

Ключови думи: финансова грамотност; въвеждане на еврото; България; икономическа интеграция; комуникационни стратегии; финансово образование

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Предстоящото въвеждане на еврото в България е важен момент за страната, който носи със себе си както значителни възможности за по-дълбока икономическа интеграция, така и съществени предизвикателства, изискващи проактивни политически отговори. Преходът надхвърля обикновената техническа обмяна на валута – той е фундаментална промяна, засягаща всеки аспект на националната икономика и общество. Това събитие бележи кулминацията на дълъг (дори проточил се твърде много) процес на европейска интеграция и демонстрира по-дълбок ангажимент към икономическия и политическия проект на Европейския съюз. От такава гледна точка въвеждането на еврото е не само практическа стъпка, но и символичен акт, който ще тества институционалния капацитет на страната, ще затвърди нейната национална идентичност и ще препотвърди геополитическата ѝ ориентация. Успехът на този исторически момент зависи до голяма степен от ефективното управление на произтичащите от него предизвикателства, за да се отключат пълноценно възможностите.

В контекста на това предстоящо събитие едно от най-важните предизвикателства, което изисква незабавно и всеобхватно внимание, е текущото ниво на финансова грамотност сред българските граждани. Успешната адаптация към новата валутна среда е неразривно свързана с това доколко информирани и подготвени са хората да управляват своите финанси в променени икономически условия. Едва ли има нужда от доказателства, че високата финансова грамотност не е просто желателна характеристика, а абсолютно необходимо условие за осигуряване на плавен и ползотворен преход към еврото. Същевременно недостатъчното ниво на финансова грамотност (каквото за съжаление е текущото състояние в България) представлява системен риск, който може да подкопае потенциалните ползи от въвеждането на еврото, водейки до пазарни неефективности като неправилно ценообразуване и спекулации, а също и до потенциално разпространение на обществено недоволство и ерозия на доверието. От всичко казано става пределно ясно, че повишаването на финансовата грамотност е не просто важна задача, а политически императив за смекчаване на рисковете и за максимизиране на ползите от този значим преход.

Представеното изследването синтезира ключови литературни източници и политически документи, които засягат финансовата грамотност в България, особено в контекста на предстоящото въвеждане на еврото. Целта е да се предостави цялостен преглед, обхващащ съществуващите в момента предизвикателства, стратегическите инициативи и поуките, извлечени от други държави – нови членки на Еврозоната.

Основните констатации показват, че в България нивата на финансова грамотност са ниски, значително под средните за ЕС и ОИСР, с изразени различия сред уязвимите демографски групи (младежи, възрастни хора, лица с ниски доходи и с ниско образование), както и че у нас не се използва в достатъчна степен опитът на другите страни. Това представлява системна уязвимост за прехода към новата валута. За съжаление общественото възприятие за приемането на еврото е силно повлияно от опасенията от инфлация и измами, често изостряни от широко разпространявана дезинформация и слаба медийна грамотност. Доверието в институциите в България е ниско, което също оказва негативно въздействие върху обществото относно приемането на еврото.

Икономически и социален императив на финансовата грамотност

В резултат от прехода към еврото ще настъпят фундаментални промени, засягащи ежедневието на всеки човек. Те включват повсеместни корекции на цените, необходимост от бързи преизчисления и по-голяма възможност за прибягване до спекулативни практики на пазара. Когато не притежават адекватна финансова грамотност, гражданите стават по-уязвими към недоброръководни практики, склонни са да вземат неоптимални финансови решения и е вероятно да срещнат значителни затруднения при управлението на личните и на семейните си бюджети. Последиците от тази уязвимост не се ограничават само до индивидуални икономически загуби – тя може да предизвика широко разпространено обществено недоволство и ерозия на доверието в процеса на преход към еврото. Ако засега значителна част от населението, това може да доведе до повсеместно завишаване на цените, до необосновано очакване за инфлация (дори когато такава не е налице) и до общо усещане у хората, че са ошетени. Подобно развитие може да подкопае доверието в пазара, в правителството и в самата единна валута, превръщайки се в системен риск за стабилността на прехода към нея.

Целенасочените усилия за повишаване на финансовата грамотност от своя страна могат да донесат съществени ползи в няколко измерения. Те ще улеснят по-плавната адаптация към новата ценова среда, като помогнат на гражданите да правят по-точни сравнения и да вземат информирани решения както за ежедневните си покупки, така и за инвестициите си. Освен това високата финансова грамотност може да послужи като защитен механизъм срещу измамни схеми и спекулативни дейности, давайки възможност на хората да разпознават и да се противопоставят на нелоялни търговски практики. Критично важно е, че подобреното финансово разбиране ще доведе до по-ефективно управление на личните финанси, включващо реална представа за инфлацията, за лихвените проценти,

за инвестиционните възможности и т.н. В крайна сметка прозрачността в тази област и информираността на гражданите значително ще засилят общественото доверие в самия процес на присъединяване към Еврозоната, насърчавайки у тях чувство за съпричастност и увереност. Повишеното доверие е ключов аспект на социалния капитал. В общества, които се характеризират с исторически ниски нива на институционално доверие, провеждането на прозрачен и добре управляван валутен преход, подкрепен от информирано население, може да бъде мощен механизъм за възстановяване на общественото доверие в държавните и в европейските институции. Това има дългосрочни последици за управлението и за икономическата стабилност, далеч отвъд непосредственото въвеждане на еврото.

Текущо състояние на финансовата грамотност в България

Българското пълнолетно население демонстрира ниски нива на финансова грамотност. Глобално проучване изчислява, че едва 35% от пълнолетното население на България са финансово грамотни, което поставя страната на 72-ро място от общо 144 участващи държави (ОЕСД, 2020). По-скорошно изследване на ОИСР и създадената към нея Международна мрежа за финансово образование (ОЕСД/ИНФЕ) от 2020 г. отчита резултат за България от 58 точки. Това е значително под средното за ОИСР (67 точки), както и от водещи икономики като Хонконг (91), Германия (85) и дори Естония (78). В рамките на Югоизточна Европа резултатът на България от 58% е около средния за региона (57%), като при пълнолетните у нас и в Северна Македония се наблюдават почти идентични силни страни по трите компонента на финансовата грамотност: знания, поведение и отношение (European Union, 2021).

Проучванията подчертават значителни различия между социалните и демографските групи. Сред тези с по-ниски нива на финансова грамотност се открояват възрастните, най-младите (16–17 годишни), лицата с ниски доходи, тези с по-ниско образователно ниво, безработните или нискоквалифицираните работници, както и хората, живеещи в малки населени места. Модулът за финансова грамотност на PISA 2022 (вж. ОЕСД, 2024) препотвърждава лошите резултати от предишните изследвания, проведени през 2018 г., и отново свидетелства за тревожната тенденция сред младежите. Петнадесетгодишните ученици в България постигат 426 точки (при 476 средно за изследваните страни и 498 за тези от ОИСР) и се класират на 16-то място сред 20 участващи държави/региони, което като цяло говори за ниско ниво на финансови знания сред тази ключова демографска група. Нещо повече, резултатите на българските ученици са лоши и

по отношение на нивата на финансова грамотност. Установява се, че при близо 41% те са по-ниски или равни на Ниво 1, съответстващо на липса на базови познания (за сравнение този показател е средно 25,5% за изследваните страни, а само за държавите от ОИСР е 17,9%). Според допълнителни изследвания върху дигитализацията на финансовите услуги пък финансовата грамотност сред младите хора е с 13% по-малка, отколкото във възрастовата група 30–59 години.

Постоянно ниските резултати, отчетени в различни проучвания и за различни възрастови групи, свидетелстват, че това е дълбоко вкоренен, системен проблем, а не са изолирани случаи. Особено обезпокоителни са резултатите от PISA, показващи ниска грамотност сред 15-годишните. Това предполага, че сегашните образователни усилия може да са недостатъчни или да са твърде отскоро, за да предизвикат широко разпространено въздействие. Тази структурна слабост прави въвеждането на еврото по-предизвикателно за значителна част от гражданите, което означава, че има вероятност ползите от приемането му (например пониски трансакционни разходи, увеличени инвестиции и т.н.) да не бъдат разпределени справедливо, ако голям сегмент от населението не може ефективно да се ангажира с новия финансов пейзаж. Проблемът изисква дългосрочни, устойчиви интервенции, започващи от ранно образование, както е очертано в одобрената от Министерския съвет през 2021 г. Национална стратегия за финансова грамотност.

Бързата дигитализация на икономиката и на финансовите услуги, вкл. възходът на финтех платформите и на мобилните плащания, поражда не само нови възможности, но и нови рискове по отношение на финансовата грамотност. В България данните показват, че нивата както на финансова, така и на дигитална грамотност са ниски, като изостават от средните нива за света и за страните от ОИСР. Въпреки че цифрови инструменти като мобилни приложения и онлайн калкулатори се предлагат като ключови мерки за подобряване на финансовата грамотност, скорошно проучване на ЕЦБ разкрива доста голямо нежелание на потребителите да приемат цифрово евро, подчертавайки комуникационните предизвикателства и предполагайки, че видео базираното обучение може да бъде ефективно (вж. Georgarakos et al., 2025).

Ниската финансова грамотност пряко води до слаба финансова устойчивост. Според някои изследвания (European Union, 2021) финансовата уязвимост в България е с 33% по-висока, като 3 от 4 български домакинства са финансово уязвими, а 64% нямат спестявания и 38% не съставят бюджет. Домакинствата без спестявания или бюджет са силно податливи на икономически шокове и на недобросъвестни практики, особено по време на преход към друга валута. Това ги

прави по-склонни да се поддават на страхове и по-малко способни да се адаптират към промените, което засилва необходимостта от практическо, незабавно финансово образование, фокусирано върху бюджетирането, спестяванията и управлението на дълга, както е предложено в цитираната Национална стратегия за финансова грамотност.

Насочването към цифрови финансови услуги и образование може неволно да разшири пропастта във финансовото приобщаване, ако не е придружено от целесъобразно обучение по цифрова грамотност. Подходът „първо цифрово“ към финансовото образование може да отчужди уязвимите групи, което налага да се приложи хибридна стратегия, съчетаваща онлайн ресурси с традиционна, лична подкрепа като мобилни екипи и лични консултации, както е предложено в Националната стратегия.

Таблица 1. Оценки на финансовата грамотност в България (2010–2022 г.)

Година на проучване	Източник	Резултат/Място на България
2010	Световна банка	~46% вярват, че имат малко/никакви знания
2014	Глобално проучване	35% финансово грамотни (72-ро място от 144)
2020	OECD/INFE	58 точки/Средно за ОИСР 67 точки
2022	PISA (модул финансова грамотност)	426 точки (16-то място от 20)/ Средно за ОИСР 498 точки

Източник: World Bank, 2023; OECD, 2024.

Обществени възприятия и предизвикателства в процеса на въвеждане на еврото

Без никакво съмнение въвеждането на еврото ще доведе до промени, засягащи всекидневния живот на хората. Сред общото население, особено сред тези с ниско образование, основните страхове са по отношение на инфлацията (очакване за повишаване на цените и за обедняване), загубата на доходи (страх, че заплатите и пенсиите няма да се увеличат пропорционално), загубата на спестявания (притеснения, че превалутирането може да доведе до намаляване на стой-

ността на парите), липсата на яснота относно механизма на превалутиране и разпространението на недобросъвестни практики. Тревогите на по-образованите от своя страна са свързани с по-голямата нестабилност на ЕС или на Еврозоната и намират израз в общо недоверие в институциите, усещане за отнемане на националния суверенитет и скептицизъм относно конкретните ползи, които членството в Еврозоната би донесло на България. Опасенията от повишаването на цените след въвеждането на еврото са значителни и са пряко повлияни от скорошния опит на Хърватия, където се наблюдава сериозно увеличение на ценовото равнище (макар и не непосредствено след въвеждането на еврото, а около година по-късно), особено в сектора на услугите.

Въпреки че икономическите аргументи за приемането на еврото често се представят рационално (изпълнение на критериите от Маастрихт, стабилност, инвестиции), страховете на обществото (инфлация, загуба на спестявания, измами) са с дълбоко емоционални и психологически корени. Инфлационните очаквания (обосновани или не) могат да предизвикат широко недоволство, което показва, че обществените настроения не се движат само от обективни икономически данни, а от преживян опит и от липса на доверие. Следователно политическата комуникация не може просто да представя факти, тя трябва също да признава и да валидира обществените тревоги, след което систематично да ги адресира. Концепцията за „*обучителен момент*“ (вж. Национална стратегия за финансова грамотност на Република България, 2021) предполага, че кризите (или значителни промени като приемането на еврото) могат да увеличат желанието за учене, но този прозорец изисква внимателно управление, за да се предотврати ескалацията на страха в трайно опозиционно поведение.

Основно предизвикателство в процеса на преход е активната борба с фалшивите новини и с дезинформацията, засягащи приемането на еврото, които често са предназначени да експлоатират общественото безпокойство. Съществуващите ниски нива на медийна грамотност в България правят населението особено податливо на тези подвеждащи наративи. Във връзка с това ключов контрааргумент е, че страната ни поддържа фиксиран валутен курс вече 28 години – този курс е законово защитен и ще остане непроменен при въвеждането на еврото, като така се предотвратяват загуби, свързани с превалутирането.

Трябва да се признае, че дискусиата около приемането на еврото в България не е чисто икономическа – тя е дълбоко преплетена с геополитически наративи и с чувството за национална идентичност. За съжаление обаче сме свидетели на многобройни опити за съзнателна дезинформация, целяща да се всява страх от еврото

и недоверие към европейските институции. От тази гледна точка членството в Еврозоната трябва да бъде представено пред населението (особено пред по-образованата му част) като ключов елемент от интеграцията и сигурността на България. Финансовите кампании за грамотност трябва да разпознават и деликатно да противодействат на тези опити за дезинформация не само като излагат икономически факти, но и като разяснят ползите от по-дълбоката интеграция, потенциално рамкирайки приемането на еврото като „символ на доверие“ и „доказателство за силна икономика“. Това изисква сложна комуникационна стратегия, която да взема предвид основните политически мотиви на антиевропейските настроения.

Основни насоки за повишаване на финансовата грамотност

Основният стълб за повишаване на финансовата грамотност е разработването и разпространението на широкообхватна и достъпна кампания за публична осведоменост. Тази кампания трябва да генерира ясни и разбираеми информационни материали, вкл. брошури, специализирани уебсайтове и видео съдържание, които ясно да обясняват същността на еврото, механизмите за превалутиране и да съдържат балансиран преглед както на ползите, така и на предизвикателствата, свързани с неговото въвеждане. Изключително важно е информацията да достигне до всяко домакинство чрез многоканална стратегия за разпространение, използвайки телевизия, радио, социални мрежи, цифрови платформи и печатни издания. Особено силен акцент трябва да бъде поставен върху уязвимите демографски групи (пенсионери, жители на малки населени места и хора с ниско образование), като се използват целенасочени инициативи и се дадат възможности за лични консултации. Такъв подход отчита цифровото разделение и различията в капацитета за усвояване на информация между демографските групи и осигурява тяхното приобщаване и ефективността на комуникацията.

Ключов елемент от тази стратегическа рамка е активното ангажиране на търговските банки да предоставят ясна и лесно разбираема информация относно промените, свързани с еврото, както и да организират специализирани информационни събития за своите клиенти. Освен това е наложително да се създадат съвместни инициативи с неправителствени организации (НПО), като се прибегне до техния опит и специализирана експертиза в областта на финансовата грамотност. Този модел на сътрудничество използва съществуващата инфраструктура и специализирани знания, за да се постигне по-широк обхват и устойчиво въздействие чрез насърчаване на публично-частното партньорство. Банките разполагат с преки и утвърдени взаимоотношения с голяма част от населението чрез своите клонови мрежи и цифрови платформи, което ги прави естествени

точки за контакт за финансова информация. Неправителствените организации често имат достъп до местни общности, радват се на обществено доверие и прилагат специализирани педагогически подходи, адаптирани към различни социални групи, особено към уязвимите.

Едновременно с това съществува спешна нужда от разработване на лесни за използване мобилни приложения и онлайн калкулатори, предназначени за безпроблемно превалутиране, за ефективно бюджетиране и за стриктно проследяване на разходите. Тези цифрови инструменти ще позволят на гражданите да се ориентират в новата ценова среда с по-голяма лекота и увереност. Паралелно с това разработването на интерактивни онлайн курсове и всеобхватни цифрови ресурси, вкл. обучителни модули и тестове за проверка на знанията, ще предостави гъвкави и достъпни възможности за обучение, съобразени с различните предпочитания и графици за учене и насърчаващи активното самообучение. Калкулаторите и приложенията за бюджетиране предоставят незабавна, осезаема полза, помагайки на хората да преодолеят когнитивните затруднения (като преизчисляването) и да изградят увереност чрез практически опит. Онлайн курсовете предлагат мащабируемост и достъпност, преодолявайки географски или времеви ограничения, и позволяват непрекъснато обучение.

Необходимо е да се признае, че проблемът с финансовата грамотност трябва да се разглежда на фона на намаляващата обща грамотност, особено на подрастващото поколение. Тревожни са цитираните вече доклади и изследвания, сочещи устойчив тренд към намаляваща функционална грамотност сред учащите се. Това налага създаването на цялостен подход към финансовото образование и изисква систематично интегриране на финансовата грамотност във формалните образователни програми, обхващащи всички нива – от началните училища до университетите. Така ще се гарантира, че основните знания се формират от ранна възраст и се развиват прогресивно, превръщайки се в дългосрочна инвестиция в човешкия капитал.

- *Начално и средно образование (1–12 клас).* Финансовите концепции трябва да бъдат вградени в съществуващи предмети като математика, икономика, география и гражданско образование или да бъдат въведени чрез извънкласни дейности и клубове по интереси. Професионалните гимназии са особено важни, предвид предстоящото навлизане на техните ученици на пазара на труда. Съдържанието на учебната програма трябва да прогресира от елементарни понятия като „пари“, „цена“ и „спестяване“, усвоявани чрез игри и практически примери в началните класове (1–4

клас), до основни понятия за бюджет, приходи, разходи и въвеждане в инфлацията и еврото в прогимназиалния етап (5–7 клас). Гимназиалният етап (8–12 клас) трябва да включва дисциплината „Лични финанси и еврото“, обхващаща детайлно изучаване на бюджетиране, спестяване, кредитиране (видове, лихви, рискове), инвестиции (основни принципи, видове) и застраховки. В модула „Евროзоната и икономиката“ трябва да се усвояват знания, свързани с макроикономически аспекти, ползи, предизвикателства и ролята на Европейската централна банка, а в „Потребителски права и финансова сигурност“ – с превенцията на измами и разбирането на договорите. Практическите модули за онлайн банкиране, мобилни плащания и използване на цифрови калкулатори са също от съществено значение.

- *Висше образование (университети).* Финансовата грамотност трябва да бъде включена в основните курсове по икономика, финанси и бизнес администрация, като същевременно се предлага и като факултативни дисциплини, достъпни за студенти от всички специалности, насърчавайки по-широко разбиране на финансовите принципи.
- *Преподавателски състав.* За изпълнението на тези програми се изискват специално обучени преподаватели, вкл. учители по математика, икономика, история и гражданско образование, преминали квалификационни курсове по финансова грамотност. В допълнение, гост-лектори от авторитетни институции като Българската народна банка, Министерството на финансите, търговски банки, застрахователни компании и инвестиционни посредници, както и успешни предприемачи и сертифицирани финансови консултанти биха могли да предоставят ценни практически прозрения.

Интегрирането на финансовата грамотност във формалното образование от ранна възраст е инвестиция в дългосрочното развитие на човешкия капитал. Преподаването на основни понятия като „пари“, „цена“ и „спестяване“ на деца в началното училище изгражда фундаментални когнитивни схеми за вземане на финансови решения, което е много по-ефективно от опитите за коригиране на дефицити в зряла възраст. Финансовото решение е сложно нещо и основните знания, придобити в детството, могат значително да повлияят върху финансовото поведение в зряла възраст. Това е дългосрочна стратегия, която признава, че финансовата грамотност е житейско умение, а не просто необходимост, свързана с еврото.

Паралелно с формалното образование, от решаващо значение за възрастното

население са гъвкавите и достъпни възможности за неформално обучение, адаптирани към неговите специфични нужди и съществуващи нива на знания. Този подход ще спомогне за справяне с непосредствени практически нужди и съществуващи пропуски в знанията.

- *Места и канали.* Такова неформално обучение трябва да се предлага на леснодостъпни обществени места като общински центрове, библиотеки и читалища, които често се посещават от представители на различни възрастови групи. Специализирани инициативи, насочени към уязвими възрастни хора, могат да бъдат провеждани в пенсионерски клубове. Центровете за заетост и бюрата по труда могат да предоставят курсове за безработни или за търсещи преквалификация. Онлайн платформите, вкл. уебinari, масови отворени онлайн курсове (MOOCs) и видео уроци предлагат достъп по всяко време и от всяко място. Чрез специализирани предавания, рубрики и статии в телевизия, радио, вестници и онлайн издания традиционните медии също играят много важна роля в това отношение.
- *Фокус на учебната програма.* Съдържанието на курсовете трябва да бъде изключително практично, включвайки предмети като „Подготовка за еврото – основни насоки“ (практически аспекти на превалутирането, разпознаване на фалшиви банкноти, съвети за пазаруване, потребителски права), „Управление на личния и на семейния бюджет в евро“ (създаване на бюджет, проследяване на приходи и разходи, стратегии за спестяване, управление на дългове), „Инфлация и нейното въздействие върху спестяванията“ и „Основи на спестяванията и на инвестициите“ (различни видове депозити, инвестиционни фондове, облигации, акции, с акцент върху нискорискови варианти за начинаещи). Съществени теми са също „Дигитални финансови услуги и сигурност“ (безопасно онлайн банкиране, мобилни плащания, превенция на онлайн измами), „Пенсионно осигуряване и планиране“ и „Застраховки – какво трябва да знаем“ (видове, значение, избор).
- *Експертиза на преподавателите.* Наред с академичните представители към преподавателите трябва да се присъединят експерти от БНБ и Министерството на финансите – за официална информация и макроикономически перспективи, представители на Асоциацията на банките в България и на застрахователни компании – за практически съвети относно финансови продукти, лицензирани финансови консултанти – за практическо консултиране на клиенти, и представители на потребителски организации – за защита на потребителските права. Важно е обучените

доброволци да играят решаваща роля за приобщаването на труднодостъпни групи и при предоставянето на индивидуални консултации, като насърчават доверието и директната ангажираност.

Подробното уточняване на местата и на преподавателите за обучение на възрастни отразява задълбочено разбиране на бариерите пред достъпа и на механизмите за изграждане на доверие. Използването на общински центрове, пенсионерски клубове и на обучени доброволци адресира уникалните нужди на уязвимите възрастни, които в много случаи не се ангажират с традиционни образователни институции или с цифрови платформи и често се осланят за информация на познавани от тях местни лица.

Адаптирани комуникационни стратегии

Ефективните комуникационни стратегии за въвеждане на еврото трябва да бъдат щателно адаптирани към специфичните страхове и нива на разбиране, преобладаващи в различните демографски сегменти на населението. Един универсален подход рискува да отблъсне значителна част от гражданите и да подкопае цялостния успех на прехода. Общественото възприятие е сложно и изисква нюансиран, а не монолитен подход. Хората обработват информация въз основа на техните убеждения, знания и емоционални състояния. Съобщение, което идва от страна на високообразован, аналитичен индивид, вероятно ще бъде неефективно или дори контрапродуктивно за някой с ниска грамотност и висока тревожност. Игнорирането на тази хетерогенност води до разхищаване на ресурси, а потенциално и до повишена обществена съпротива.

Съществен сегмент от обществото няма (и не търси) познания в областта на икономиката и на финансите, тези хора са по-малко склонни да се задълбочават в сложни икономически аргументи и са силно повлияни от ежедневните си финансови притеснения. Тяхното недоверие често произтича от лични наблюдения и страхове за бъдещото им благосъстояние.

- *Основни страхове.* Те включват значителни опасения относно инфлацията (възприемано повишаване на цените и обедняване), загуба на доходи (безпокойство, че заплатите и пенсиите няма да се увеличат пропорционално), обезценяване на спестяванията, фундаментално неразбиране на механизма за превалутиране и затруднения при разпознаване на новите банкноти/монети, както и изявени притеснения от измами и от недобросъвестни търговски практики.

- *Комуникационен подход.* Комуникацията трябва да приоритизира простотата и яснотата, използвайки ежедневен език и стриктно избягвайки икономическия жаргон. Фокусът трябва да бъде изключително практичен, предоставяйки информация, пряко свързана с ежедневието на тази част от населението. Това включва ясни таблици за превалутиране на основни стоки и услуги, прости калкулатори (вкл. физически джобни брошури) и конкретни примери как да се проверяват цените (например чрез двойното им изписване). Вдъхването на спокойствие по отношение на доходите и на пенсиите е от първостепенно значение – това изисква ясно да се обяснява (евентуално с помощта на илюстративни примери), че те ще бъдат преизчислени по фиксиран курс без загуба на покупателна способност. Спестяванията трябва да бъдат изрично гарантирани срещу загуба на стойност, като се набляга на защитата на депозитите. От решаващо значение е визуалната и аудио информация, разпространявана чрез телевизия, радио и местни медии – кратки видеоклипове, инфографики, плакати и брошури с изобилни визуални примери за евробанкноти и монети. Тъй като личният контакт и изграждането на доверие са изключително важни за надмогването на съществуващите страхове, те могат да бъдат улеснени чрез местни информационни срещи в пенсионерски клубове, читалища и кметства, както и чрез работата с обучени доброволци или доверени местни консултанти (например от местната администрация или социални работници), които могат да предлагат персонализирани съвети. Активното и систематично опровергаване на митове и фалшиви новини относно повишаване на цените или загуба на пари също е от съществено значение.

По-задълбоченият анализ на страховете на тази група хора разкрива, че за тях е характерна комбинация от когнитивни (неразбиране) и емоционални (страх от обедняване, от измами) тревоги. Предложените комуникационни стратегии (простота, визуални помагала, личен контакт, опровергаване на дезинформация) са пряко съобразени с принципите на поведенческата икономика, признавайки, че информацията сама по себе си не е достатъчна – при уязвимите групи от решаващо значение за преодоляване на когнитивните пристрастия и на емоционалната съпротива са доверието, успокояването и практическата демонстрация.

Друг сегмент от обществото са гражданите, които притежават необходимите знания, но търсят по-подробни анализи, солидни аргументи и контекстуално разбиране. Техният скептицизъм често се корени в политически или в системни съображения.

- *Основни страхове.* При тази част от населението опасенията са свързани с възприятие за нестабилност на Европейския съюз и Евророната (например икономически проблеми в други страни членки, дългова криза, инфлационни процеси на европейско ниво), с общо недоверие към способността на българските и на европейските институции да управляват процеса, с усещане за загуба на национален суверенитет по отношение на икономическата политика и с липса на убеденост, че присъединяването към Евророната ще донесе осезаеми ползи за България.
- *Комуникационен подход.* Аргументите трябва да се основават на данни и факти, предоставяйки анализи, статистики и експертни мнения, които обосновават ползите от еврото и пряко адресират опасенията. Фокусът трябва да се измести към стратегическите ползи, като се разясни, че еврото осигурява макроикономическа стабилност, ниски лихвени проценти и предвидимост, както и улесняване на търговията, намаляване на трансакционните разходи и привличане на чуждестранни инвестиции. В отговор на притесненията относно европейската нестабилност е необходимо да се обяснят съществуващите механизми за стабилност в Евророната (например на Европейския механизъм за стабилност) и членството в нея да се представи като част от по-широк, ползотворен интеграционен процес, като се подчертае, че България ще има активна роля във формирането на политиките на Евророната. Прозрачността и откритият диалог са от първостепенно значение – необходими са експертни дебати, редовни сесии с въпроси и отговори на живо или онлайн с експерти, а също и публикуване на подробни аналитични статии и доклади в авторитетни медии. Ангажирането на влиятелни лидери на мнение – уважавани икономисти, журналисти, бизнес лидери и общественици, които да изразяват аргументирана подкрепа за еврото и да обясняват неговите предимства, също е критичен компонент.

Страховете на тази група са по-абстрактни и идеологически натоварени (суверенитет, институционално доверие). Комуникационната стратегия, насочена към хората, разчитащи на данни, на експертни дебати и на лидери на мнение, е сложен подход за убеждаване. Тя признава, че за да се преодолее скептицизмът при този сегмент от обществото, се изискват рационални аргументи и интелектуална ангажираност, а не просто успокояване. Това налага стратегията да се основава на разбиране на начина, по който се формират политическите и икономическите наративи сред информирания публика.

Таблица 2. Сравнителни комуникационни стратегии за различни целеви групи

Целева група	Основни страхове/опасения	Предложен комуникационен подход	Примери за конкретни мерки
Ниско образувани	Инфлация, загуба на доходи/спестявания, неразбиране, измами	Простота, яснота, практическа насоченост, визуална/аудио информация, личен контакт, борба с дезинформацията	Ясни таблици за превалутирание, примери с доходи/пенсии, ТВ/радиокампании, срещи на място, обучени доброволци, роля на банки/пощи
Познати образувани	Нестабилност на ЕС/Еврозоната, недоверие в институциите, загуба на суверенитет, липса на ползи	Аргументи, базирани на данни и факти, фокус върху стратегически ползи, изчерпателно и смислено комуникиране на европейската нестабилност, прозрачност и диалог, ангажиране на лидери на мнение	Анализи, статистики, експертни мнения, обяснение на макроикономическа стабилност, инвестиции, дебати, Q&A (въпроси и отговори) сесии, подробни статии

Независимо от целевата група всички комуникационни усилия трябва да се ръководят от няколко основни принципа. Много е важно информацията да идва от надеждни и авторитетни източници (например Българската народна банка, Министерството на финансите, Европейската централна банка, независими експерти), за да се изгради доверие. От първостепенно значение е и последователността в посланията по всички канали, за да се избегне объркване сред гражданите и да се подсилят ключовите моменти. И накрая, комуникацията трябва да бъде дългосрочен, непрекъснат процес, започващ много преди въвеждането на еврото и продължаващ след датата на прехода, а не еднократна, ефимерна кампания. Тези принципи са стратегически императиви за изграждане на устойчиво обществено доверие и за управление на очакванията във времето, особено при сложна и чувствителна политическа промяна.

Опитът на другите страни – предприети мерки в Естония, Литва и Хърватия

В табл. 3 са обобщени основните мерки, предприети от правителствата на трите държави през последните две години преди влизането им в Еврозоната, като е направено сравнение на ключови аспекти на подготовката – информационни кампании, период и условия за двойно етикетирание на цени, доброволни инициативи на бизнеса, законодателни решения, контролни механизми и подкрепа за уязвими групи. Изборът на Естония и Литва е закономерен, доколкото те са единствените две страни, имали валутен борд преди присъединяването си към Еврозоната. Хърватия е избрана както поради географската близост и сходната икономическа структура, така и поради факта, че тя е последната приета държава, за която са приложени новите правила.

Таблица 3. Сравнителен анализ на мерките, предприети в Естония, Литва и Хърватия

Аспект	Естония (2011 г.)	Литва (2015 г.)	Хърватия (2023 г.)
Информационна вина	<p>Стратегия, одобрена през март 2010 г. – цел 90% информирани жители, 65% подкрепа.</p> <p>Интензивна фаза след юли 2010 г. (след решението на ЕС) – директни пощенски материали, семинари, пътуваща изложба, ТВ/радиоклипове. Специален фокус върху малцинствата, възрастните и бизнеса. ЕС съфинансира 50% от разходите.</p> <p><i>Резултати:</i> >90% граждани се чувстват информирани; целите са постигнати.</p>	<p>Стратегия, одобрена през юни 2013 г. – цел >80% информирани граждани.</p> <p>Интензивна кампания през втората половина на 2014 г.: т.нар. Евробус обикаля всички 60 общини; семинари и обучения в цялата страна; масирана медийна кампания (ТВ, радио, печат, външна реклама) от юли 2014 г.; директна поща до всички домакинства. Акцент към хора сурваждени (материали за незрящи/глухи) и обитавани отдалечени райони. ЕС съфинансира ~50% от разходите.</p> <p><i>Резултати:</i> ~92% информирани граждани; подкрепата за еврото нараства до ~70%.</p>	<p>Национална стратегия – целта е ясна, навременна и информирана.</p> <p>Компания „Еврото – наша валута“ през лятото/есента на 2022 г.: централен сайт, брошура до всяко домакинство, ТВ/радиоспотове, билбордове, безплатен телефон, „Евро на колела“ – изложба в 27 града. Особен фокус върху езиковите малцинства, възрастните, живеещите в селата, незрящите/слабо виждащите. Компанията е организирана бързо súčasнието на възрастни изпълнители (6 обществени поръчки).</p> <p><i>Резултати:</i> 88% информирани граждани, 61% смятат прехода за гладък, 81% нямат проблеми с обмена; подкрепата за еврото нараства от 47 на ~64%.</p>
Двойно етикетиране на цените	<p>Задължително от 1 юли 2010 до 30 юни 2011 г. (6 месеца преди и 6 след преминаването към еврото). Редовни проверки от Комисията за защита на потребителите – 4250 инспекции за 6 месеца. Установени са нарушения в ~47% от случаите (юли), които спадат до 11% (дек).</p> <p>Чести проблеми: грешно закръгляне, липсваща цена в евро. Наложени са глоби при 288 нарушения (общо ~€12 хил.). Списъкът на нарушителите се публикува седмично онлайн. 88% от гражданите намират двойните цени за полезни.</p>	<p>Задължително от 23 август 2014 до 30 юни 2015 г. (~4 месеца преди и 6 след преминаването към еврото). Инспекции от компетентните агенции – ~13 819 проверки (авг.–дек. 2014 г.), +1543 през ян. 2015 г. Установени са нарушения в 870 случая (~6%), които се отнасят главно до липса на двойна цена или грешно закръгляне. Санкции: 819 предупредения, 14 глоби (между 1000 и 10 хил. LTL). Създадени са канали за жалби (гореща линия, e-mail, интерактивна карта), като сигналите се обработват за <48 ч. 67% от гражданите смятат мярката за полезна, а 77% – че цените са етикетиран правилно.</p>	<p>Задължително от 5 септември 2022 до 31 декември 2023 г. (~4 месеца преди преминаването към еврото). Инспектори наблюдават 103 основни продукта в 9 града. Държавният инспекторат извършва 12 355 проверки (до 28.02.2023 г.). Установени са нарушения при 20,3% от обектите. Наложени са глоби при 11,5% от нарушенията (общо ~€538 хил.), предимно за неоправдани поскъпявания. 78% от гражданите намират двойните цени за полезни, но само 60% смятат, че са изпълнявани коректно (най-ниско доверие).</p>

<p>Аспект</p>	<p>Доброволни инициативи на бизнеса</p>	<p>Естония (2011 г.)</p>	<p>Кампания „Честно образуване на цени“ – стартирана през авг. 2010 г. от Търговската камара и правителството. Споразумение за лоялно въвеждане на еврото – подписаните търговци обещава да не повишават цени без основание и да спазват правилата. Участието е доброволно; предоставен е специален стикер/лого („еврото не повишава цената“). Включват се ~526 фирми (16 общини), които покриват ~70% от пазара на хранителни стоки.</p>	<p>Литва (2015 г.)</p>	<p>„Меморандум за добри търговски практики“ – лансиран на 18 авг. 2014 г. от Министерството на икономика. Бизнесът се приканва да декларира, че няма да злоупотреба и че ще помага на клиентите. Ръководи се от Министерството на икономиката, а подписаните получават право да ползват лого на инициативата (знак за коректност). Към 7 ян. 2015 г. Меморандумът е подписан от над 5000 фирми, покривайки ~13 639 обекта (~90% от всички търговци на дребно) – много силно участие в сравнение с други страни. От 1 окт. 2014 г. има гореща линия и онлайн форма за сигнали срещу нарушения; оплакванията се проверяват до 48 ч.</p>	<p>Хърватия (2023 г.)</p>	<p>„Бизнес етичен кодекс“ – стартирана на 16 авг. 2022 г. от Министерството на икономика. Определя 7 принципа – правилно конвертиране, показване на курса, обучение на персонала, без неоправдано увеличение и др. Доброволен ангажимент – фирмите обещава да не злоупотребяват и да спазват правилата. Подписаните получават стикер/лого за обектите и рекламите си, а ако нарушат принципите, лотото им се отнема. До дек. 2022 г. се включват над 900 компании, а до февр. 2023 – 1046, което е 83,5% от всички търговци на дребно и големи магазини. 100% от банките и застрахователите също членуват. Раздадени са над 15 хил. стикера за всички локации.</p>
<p>Законодателни мерки</p>	<p>Закон за въвеждане на еврото (приет през апр. 2010 г.) – определя процедурата за преминаване към евро, валидността на договори и цени, задължителното двойно етикетирание; фиксира курса и регламентира обмена на валута. Включва защита на потребителите и санкции при нарушения (глоби). Допълнителни наредби уреждат счетоводство, данъци, банкови операции в евро и др. Национален план за промяна, координиран от междуведомствен Комитет по въвеждане на еврото. Две валути за 2 седмици (1–14 ян. 2011 г.) – кратък, но достатъчен период. Банките и пощите обменят безплатно кроните за евро – банките за 6+6 месеца, а централната банка безсрочно.</p>	<p>Закон за приемане на еврото (приет през юли 2014 г.) – регламентира подготовката, конвертирането на цени и суми, изтеглянето на литас, безплатната обмяна на валута и др. Постановява, че Банката на Литва обменя безсрочно и безплатно литас срещу евро. Търговските банки обменят 6 месеца без такси (с право на 3 дни предизвестие за суми над 15 хил. LTL) + още 6 месеца в определени клонове, а пощите – 60 дни безплатно. Законът изисква двойно ценнообразуване поне 6 месеца след евроредния и предвиденият план за еврото и Междуведомствена координационна комисия ръководят процеса. Две валути за 2 седмици (1–15 ян. 2015 г.) – протича гладко (84% от трансакциите дават ресто в евро още на 2 ян.).</p>	<p>Закон за въвеждане на еврото (приет през апр. 2022 г.) – обхваща цялостно преминаването към евро: фиксиран курс, преобразуване на цени/договори/заплати, задължение за двойно ценнообразуване, правила за банковата система, обръщение на двете валути и др. Включва глоби за нарушение на ценните правила. Изменения в Закона за защита на потребителите (2022) въвеждат изрична забрана за необосновано вдигане на цени по повод еврото. Национален план за действие и Национален съвет за еврото координират институциите. Банките обменят куни към евро без такси 12 месеца (през първите 6 месеца във всички, а след това в определени по закон клонове). Централната банка обменя безсрочно. Две валути за 2 седмици (1–14 ян. 2023 г.) – успешно (81% получават ресто само в евро още на 2 ян.).</p>				

<p>Аспект</p>	<p>Естония (2011 г.)</p> <p>Комисия за защита на потребителите (СРВ) – 25 инспектори + договори с НПО (пенсионери) и община Талин за допълнителен контрол. Общо ~5230 проверки; 288 глоби за неправилни цени. Нарушителите се обявяват публично (поименен списък онлайн). Няколко жалби срещу фирми по доброволната инициатива, разследвани от СРВ. Като цяло нарушенията намаляват значително след първия месец. Реален ефект върху инфлацията: +0,3–0,4% (еднократно) – в нормата.</p>	<p>Литва (2015 г.)</p> <p>Държавен център за защита на потребителите (СРРС) – мобилизира над 350 инспектори от различни институции. 13 819 инспекции (до 12.2014 г.) + 1543 (01.2015 г.); 870 нарушения, само 14 глоби (до €2896) – повечето случаи са решени с предупреждение. Активен прием на сигнали: гореща линия, e-mail, онлайн карта. Жалбите са решавани до 2 дни. Единични тежки нарушения. 67% от литовците смятат превалутирването за честно, а ~47% имат съмнения. ЕК препоръчва удължен мониторинг с още няколко месеца заради продължаващи опасения. Инфлационният ефект е пренебрежим (Литва е в дефлация през 2014 г.).</p>	<p>Хърватия (2023 г.)</p> <p>Държавен инспекторат – обединен надзор (пазарен, туристически и др.) с правомощия по Закона за еврото и ЗП. 12 355 проверки (до 28.02.2023 г.), 20,3% установени нарушения; ~1415 глоби при 11,5% от проверките на обща стойност €538 хил. Повечето санкции са неволеятни търговски практики (за повишени цени). Правителството извършва „шокови“ проверки в началото на 2023 г., принуждавайки някои фирми да върнат цените надолу. Ефект: през януари 2023 г. месечната инфлация е +0,3%, т.е. ограничен ценови ефект. Общественото недоволство: първоначално високо (62% очакват поскъпване), постепенно спада с оглед на реалните данни.</p>
<p>Първенепа за уязвими групи</p>	<p>Информационни материали на малцинствени езици и за възрастни; специални презентации. Банки организират безплатен обмен на стари пари без лимит (6–12 месеца). Централната банка пуска миникитове с евромонети (1 на домакинство) за ранно запознаване с тях. Възрастните хора са включени и като граждански контрол (пенсионери следят цени), като ефектът е двоен – допълнителен надзор и социално ангажиране.</p>	<p>Информационна кампания, насочена към етнически малцинства (пощенски брошури на полски, руски) и хора с увреждания (тренинги за незрящи, жетонимични видета). Специални събития в селски райони. Пощите обслужват обмена на валута 2 месеца безплатно, което е важно за възрастните в отдалечени места. Централната банка обмена безплатно неограничено време (за подкрепа на всички, които държат кеш). Общественият обсъждане и семинари включват пенсионерски организации и НПО.</p>	<p>Кампанията обръща внимание на езиковите общности и на пенсионерите (често чрез телевизията). Безплатен телефон за въпроси. Пенсиите и финансова агенция FINA активно обменят куни в евро в населени места без банки. Централната банка и правителството организират финансово обучение за възрастни лица как да разпознават истинските евро, за да не станат жертва на измами. Банките ограничават таксите, например до 6 месеца няма такси за превалутирване на депозити.</p>

От табл. 3 ясно се вижда, че трите държави следват сходна рамка от мерки, препоръчана и подкрепена от ЕС, но с известни различия в мащаба и подхода:

- *Информационни кампании.* И в трите случая те са съфинансирани от ЕС и стартират интензивно приблизително 5–6 месеца преди преминаването към еврото. Естония постига най-висока цел (90% информираност) и полага допълнителни усилия по отношение на малцинствата. Литва интегрира три езика и залага на Евробус обиколки и активности за хора с увреждания. Хърватия прилага най-компактна кампания за кратко време, включвайки „Еуго на колела“ и масова дистрибуция на материали, и достига високи нива на осведоменост (88%+). Общото е, че се отделя специално внимание на възрастните, на малцинствата и на хората със специфични нужди, за да не останат информационно изолирани.
- *Двойно етикетирание.* Задължителното двойно показване на цените е основен потребителски защитен механизъм и в трите страни. Разлики има в периода: в Естония той е 12 месеца (6+6), в Литва – приблизително 10 месеца (4+6), а в Хърватия – 16 месеца (4+12). Хърватия удължава най-много периода (цялата първа година), отчитайки високата инфлация и ниското доверие. Естония и Литва спазват стандартните 6 месеца след приемане на еврото – Литва не следва препоръката на ЕК за удължаване до 12 месеца, докато Хърватия, напротив, доброволно удължава до около 12 месеца след приемането (до края на годината). Контролът върху двойните цени е най-строг в Естония (със системни глоби и с публично назоваване на нарушители) и в Хърватия (масови инспекции, голям брой санкции). В Литва подходът е по-внимателен (много предупреждения, малко глоби), вероятно за да се избегне конфликт с бизнеса. Във всички случаи се отчита, че делът на нарушенията намалява с времето и повечето търговци успяват да се адаптират до официалното въвеждане на еврото.
- *Доброволни бизнес инициативи.* И трите държави внедряват кодекс за честно ценообразуване с различни наименования: споразумение (Естония), меморандум (Литва), етичен кодекс (Хърватия). Обхватът им е различен – Литва и Хърватия успяват да привлекат огромна част от сектора на дребно (близо 83–90% покритие), докато в Естония процентът е по-скромнен (главно големи вериги, приблизително 70% от ключов пазар). Ясно се вижда ефектът от активното правителствено застъпничество – в Литва и в Хърватия Министерството на икономиката лично води кампанията, докато в Естония тя е оставена повече на Търговската камара. Отношението на малките и на средните предприятия е предизвикателство навсякъде – малките фирми се присъединяват по-трудно. Урокът е, че

трябва да се започне отрано и да се убеждават активно дребните търговци (ЕК специално препоръчва това след Хърватия). Като цяло доброволните споразумения са ценен инструмент – те създават положителен натиск сред бизнеса (никой не иска да изпадне от „честната“ група) и дават визуална гаранция на потребителите (чрез стикери), че цените не са произволно покачени.

- *Законова уредба.* И в трите страни има специален закон, който гарантира правната сигурност на прехода и защитава потребителите. Навсякъде законът изисква двойно етикетиране и фиксира обменния курс като единствено валиден. Има и някои отличителни черти. В Литва, както и в Естония и в Хърватия законът гарантира безсрочна безплатна обмяна от централната банка (обичайна практика е ЦБ да обменя старите пари без краен срок). В Хърватия допълнително се изменя Законът за потребителите, което дава повече правомощия срещу ценовата спекула – този подход може да се разглежда като реакция на по-високия риск от инфлация. Времето на приемане на съответните закони също е различно: Естония и Литва приемат закон приблизително 6–12 месеца преди преминаването към еврото, а Хърватия около 9 месеца по-рано, което е доста късно, но е обусловено от полученото одобрение през юли 2022 г.
- *Контрол и санкции.* В Естония и в Хърватия се наблюдава по-силна склонност към наказателни мерки, докато Литва отдава предпочитание на предупредителните мерки (само 14 глоби). В Хърватия общата стойност на глобите е значителна (€538 хил.), което демонстрира твърдост пред бизнеса. Естония използва публикуването на имената на нарушителите – уникална тактика, която не се среща в другите две страни. Литва и Хърватия въвеждат модерни инструменти за взаимодействие с гражданите – горещи линии и интерактивни карти за подаване на сигнали, което води до по-голяма прозрачност. И трите страни временно увеличават инспекторския си капацитет (Естония ангажира НПО и общини; Литва – допълнителни агенции; Хърватия централизира различни инспекторати). Единодушното заключение на ЕК е, че повишеният контрол смекчава инфлационния ефект – например в Хърватия ограничаването на спекулата допринася инфлацията през януари да остане ниска.
- *Подкрепа за населението и на уязвимите.* И трите държави осигуряват безплатна и удобна смяна на валута за гражданите – през първите месеци във всички банки без такси, както и в пощенските станции, а в централните банки – безсрочно. Това предотвратява допълнителни разходи и не-

удобства за хората, което е важно особено за възрастните със спестявания в кеш. Разпространението на стартови пакети с евромонети е практикувано и в трите страни – това е много ефективно в Естония и Литва (изчерпани комплекти), но по-слабо използвано от бизнеса в Хърватия. Във връзка с обучителните материали за уязвими групи Литва изпъква с триезичното покритие и с материали за инвалиди, а Хърватия – с целенасочени ТВ репортажи и с индексирани пенсии (като част от антиинфлационните мерки). В Естония интересен подход е включването на самите пенсионери като партньори (граждански контрол), което ги прави не само реципиенти, но и активни участници в процеса.

Поуки и препоръки

Планът на България за присъединяване към Еврозоната може да се облагодетелства значително от уроците на Естония, Литва и Хърватия. Анализът на техните мерки показва какво работи ефективно за обществена адаптация и за защита на потребителите. По-нататък са формулирани няколко конкретни препоръки за нашата страна:

1. *Разработване на всеобхватна комуникационна стратегия.* България закъснява да приеме цялостна стратегия за информационна кампания с конкретни цели (например $\geq 80\%$ от гражданите да се чувстват информирани, $\geq 60\%$ подкрепа за еврото). Важно е да се осигури бюджет (вкл. чрез партньорство с ЕК за съфинансиране) и професионален план за медийно покритие, събития и образователни материали. Кампанията трябва да е интензивна през последните 6 месеца, но и да започне плавно по-рано, за да подготви общественото мнение. Ключово е посланията да бъдат обективни, практически насочени и на достъпен език, за да разсеят недоверните митове (например „цените ще се вдигнат двойно“ и др.). Необходимо е да се подготвят отговори на често задавани въпроси и да се комуникират ползите, както и мерките срещу рисковете.

2. *Таргетиране на уязвимите групи.* Кампанията задължително трябва да включва специални действия за групите, които биха се адаптирали най-трудно:

- *възрастни хора* – организиране на разяснителни срещи чрез пенсионерски клубове, брошури с едър шрифт, телевизионни рубрики в популярни за тази аудитория предавания. Възрастните са и най-склонни да се опасават за спестяванията си, ето защо трябва да им се обясни какви са гаранциите (банкови и правителствени) и да се насърчат да обменят парите си своевременно в сигурни институции;
- *етнически малцинства* – предоставяне на информационни материали и

на гореща линия на малцинствения език, за да се достигне до тези групи;

- *хора с увреждания* – осигуряване на написани с брайлова азбука брошури за незрящи, видеоклипове с жестомимичен превод за глухи, както и практически обучения (например как незрящите да разпознават ръбчето на различни по размер и релеф монети евро);
- *жители на отдалечени и слабонаселени места* – мобилни екипи (подобно на Евробус в Литва) да посетят малките общини, особено там, където достъпът до банка или до интернет е ограничен. В тези райони може да се разчита на съдействие от страна на „Български пощи“, на читалищата и на местните общински власти за организиране на информационни дни.

3. *Ранно въвеждане на задължително двойно обозначаване на цените.* България трябва да предвиди достатъчно дълъг период на двойно етикетирание, съдържащо цени и в лева, и в евро, за да могат гражданите да свикнат с новата валута. Препоръката на ЕК (въз основа на Хърватия) е крайният срок да е около 1 година след въвеждането на еврото, като началото на двойните цени да е възможно най-скоро след фиксиране на курса. Например, ако целевата дата е 1 януари на дадена година, двойните цени може да започнат от лятото на предходната година. Така се осигуряват близо 5–6 месеца преди и 6–7 месеца след преминаването към еврото, т.е. общо около 12 месеца, което изглежда достатъчно (в Хърватия срокът беше 16 месеца, но според ЕК при други равни условия той може да се съкрати до 12 месеца). България трябва законодателно да определи този период и да го комуникира ясно с бизнеса отрано, за да могат фирмите своевременно да се подготвят за промени в етикети, в софтуер и т.н.

4. *Строг контрол на двойното етикетирание и на прилагането на курса.* Необходимо е Комисията за защита на потребителите (КЗП) да разработи план за масови проверки по време на задължителното двойно ценообразуване. Опитът показва, че в началото делът на грешките/нарушенията може да е висок (в Естония например 47% от проверените през първия месец), но с интензивен контрол той спада бързо. Във връзка с това България трябва да:

- увеличи временно капацитета на КЗП, като се обучат допълнително инспектори или се привлекат други органи за извършване на съвместни проверки (НАП – за касови проверки, общински инспектори, дори НПО);
- използва рисковия подход – както препоръчва ЕК, още в първите дни да се идентифицират *секторите с висок риск* от злоупотреби (например малки магазини, пазари, заведения, таксиметрови услуги и др.) и контролът да се насочи най-вече към тях. Така ще се оптимизира ресурсът, а „лошите практики“ ще се идентифицират, преди да се разпространят;

- налага санкции последователно – ясно да се определят глоби за нарушение на правилата (например за липса на двойна цена, за използване на грешен курс или за неправилно закръгляне). Тези санкции трябва реално да се прилагат още от първия месец, за да дадат сигнал и за други нарушения;
- осигури публичност и прозрачност – да се обмисли идеята за публикуване на *списък на нарушителите* онлайн (какъвто е естонският подход). Това е спорна идея („*няма лоша реклама*“), но уронването на престижа на недобросъвестни търговци би могло да има положителен ефект. Ако законът позволява, КЗП може седмично да обявява броя на проверките, типичните нарушения и евентуално имената на системни нарушители, за да информира потребителите и да ги предупреди да бъдат внимателни.

5. *Въвеждане на етичен кодекс за бизнеса.* На базата на успешния опит на Литва и Хърватия още преди периода на двойните цени България трябва да създаде доброволен етичен кодекс или споразумение с бизнеса. Препоръчително е:

- Министерството на икономиката и индустрията в координация с Министерството на финансите и БНБ да инициира разработването на такъв кодекс съвместно с големите бизнес асоциации (АИКБ, БСК, БТПП, КРИБ и др.), търговски вериги, банки и доставчици на услуги.
- Кодексът да съдържа ясен ангажимент – *никакво необосновано повишаване на цените при конверсията*, коректно прилагане на курса и закръгляне, изрядно двойно етикетиране, обучение на персонала, приемане на плащания и в двете валути през двуборотния период и съдействие на клиентите.
- Кампанията да стартира поне 4–5 месеца преди преминаването към еврото (в Хърватия тя започва около 4 месеца преди, а в Литва около 4,5 месеца). Колкото по-рано започне, толкова повече бизнеси ще се включат.
- Специално таргетиране на малките магазини и услуги, тъй като опитът сочи, че те са най-скептични или трудно се включват. За да се преодолее това, може да се потърси съдействие от техните браншови организации (на дребните търговци, на фризьорите, на таксиметровите фирми и др.), да се проведат срещи, да се обяснят ползите от приемането на еврото (например, че клиентите биха предпочели обекти със стикер).
- Популяризиране: Да се създаде лесно разпознаваемо лого (например „Честен Евро Търговец“) и да се раздадат стикери и електронни графики на всички, подписали етичния кодекс. Медиите да отразят кои големи вериги са се присъединили (състезателен момент – никоя голяма компания

не би искала да остане извън списъка).

- Наблюдение: КЗП да следи и да проверява участниците в кодекса. Ако някой наруши обещанията, да се предвиди отнемане на сертификата/стикера му (както е в Хърватия) и евентуално публичното му оповестяване, което би било имиджов удар за него.

6. Логистика и институционална готовност. Опитът показва, че добрата техническа подготовка елиминира много потенциални проблеми, които иначе биха създали напрежение у потребителите. България трябва да:

- *осигури навременно зареждане на банките и търговците с еуровалута.* Ако датата е 1 януари (както е общоприето), от септември предната година БНБ трябва да започне зареждане на банките с банкноти и монети в евро, а най-късно от ноември – и големите търговски вериги и инкасо фирми. Необходимо е БНБ да подsigури достатъчно евромонети от други държави или чрез сечене. Важно е също и ранното тестване на българските евромонети в автомати из различни държави от ЕС;
- *планира ясно обмена на кеш* – съвместно с банките да обяви кои банкови клонове ще обменят и колко дълго (Хърватия включва и FINA, Литва – конкретни банкови клонове, България може да ползва и мрежата на „Български пощи“ за първите 1–2 месеца);
- *разработи софтуерни решения* – държавните институции (НАП, НОИ и др.) да подготвят ИТ системите си за конвертиране на суми, така че пенсионните плащания, данъчните задължения и т.н. да се преизчислят точно. Бизнесът също трябва да обнови софтуера на касовите апарати, етикетиращите системи, счетоводните програми – тук правителството може да съдейства с безплатни инструкции, с автоматично въведени данни (API) за автоматично изтегляне на курса, може би и с *удължен срок за фискална отчетност* около датата на смяната, за да имат време фирмите да се адаптират;
- *проведе обучение на администрацията и на персонала на първа линия* – служителите в пощите, банковите касиери, инспекторите на КЗП, дори касиерите в големите магазини трябва да преминат през кратки обучения за работа с евро, особено за разпознаване на валутата, за да се предотвратят измами с фалшиви пари в първите дни.

7. Прозрачност и управление на очакванията. Българските власти трябва да действат проактивно, за да овладеят общественото мнение относно цените. Няколко конкретни действия:

- *Предварителен ценови мониторинг.* Започвайки около 6 месеца преди еврореденя, да се следят цените на определен набор от основни стоки и резултатите да се споделят публично. Целта е да се покаже, че ако има движение на цените, те не са извън нормалното сезонно или пазарно колебание. Такъв мониторинг може да се прави от Министерството на икономиката или от НСИ, като се публикува месечен бюлетин.
- *Своевременно изнасяне на данни за инфлацията.* Националният статистически институт да подготви бързи оценки за инфлацията веднага след въвеждането на еврото, например публикуване на данни за януари още в началото на февруари с акцент върху компонентите. (Хърватия прави това на 1 февруари и така бързо става ясно, че официалната инфлация е ниска, което контрира слуховете за нейния размер.)
- *Комуникиране на реалния ефект.* Въз основа на опита (и на академични изследвания) може предварително да се информира обществото, че *статистическият ефект от смяната на валутата върху ценовото равнище е около 0,2–0,3 процентни пункта* (както е било в Словакия, Естония, Литва и т.н.). Това ще даде рамка – по този начин, ако хората видят 10% обща инфлация, ще знаят, че само 0,3 п.п. от нея евентуално се дължат на еврото, а причина за останалото са други фактори.
- *Противодействие на дезинформацията.* Съвместно с медиите и експертите властите трябва да отговорят подобаващо на слухове или митове, например да подготвят проверка на фактите, свързани с често срещани твърдения („В Хърватия цените се удвоили“ – да се направи опровержение и да се докаже с данни, че това не е вярно, като се цитира хърватският опит). Такава проактивност е важна, защото темата за еврото често се политизира.

8. *Продължаване на надзора и след въвеждането на еврото.* Препоръчително е българските власти да не смятат първия ден на еврото за край на задачата, а да поддържат съответните мерки още няколко месеца:

- КЗП и другите инспектори да продължат с проверки на цените поне 3–6 месеца след смяната (Литва удължава надзора по препоръка на ЕК, Хърватия също продължава с инспекции и до днес).
- Ако видимо вече е изиграло ролята си, двойното етикетироване може да се прекрати след 6 месеца (при положение че това е законовият минимум), но ЕК отбелязва, че гражданите свикват сравнително бързо и няма нужда от прекомерно дълго двойно изписване, особено ако бизнесът масово е

коректен. Следователно, в случай че инфлационните очаквания са укротени, България би могла (подобно на Литва) да спре задължителните двойни цени след 6 месеца, за да се намали административната тежест.

- Да се продължи комуникацията – и след датата на въвеждането да има пресконференции, да се отчитат резултати („x% от хората вече ползват основно евро, няма проблеми с връщането на ресто, оплакванията намаляват“ и т.н.), за да се затвърди общественото спокойствие.

9. *Да се вземе под внимание макроикономическият фон.* Ако към момента на приемане на еврото инфлацията в България е висока (както е било в Хърватия около 13%), трябва да се предприемат някои допълнителни мерки:

- Правителството може да обмисли еднократно увеличение на социалните плащания или подкрепа за уязвими групи, съвпадащи с въвеждането на еврото – нещо като буфер срещу общата инфлация, за да не се припише тя на еврото. Например в Хърватия през 2022 г. пенсиите са индексирани извънредно (не пряко заради еврото, но това е помогнало пенсионерите да посрещнат ценовия шок). За България би могло през бюджета да се предвиди компенсация, ако през 2025 г. има висока инфлация, което да понижи напрежението.
- Особено внимание трябва да се отдели на енергийните и на комуналните цени – ако около въвеждането е необходима корекция на цените на ток, газ, вода, парно (които традиционно се актуализират в началото на годината), да се обясни ясно, че тези промени не са причинени от еврото, а се дължат на регулаторни решения. Добра практика би било да се избегне съвпадане на сериозни регулирани поскъпвания точно на 1 януари на евогодината, за да не се слоят в съзнанието на хората с валутната смяна.

Заклучение

Успешното въвеждане на еврото в България е неразривно свързано с проактивното повишаване на финансовата грамотност на нейните граждани. С представеното изследване се опитваме да акцентираме върху безспорния факт, че финансовата грамотност и използването на чуждия опит не е просто желателно, а абсолютно задължително условие за осигуряване на плавен преход и за надеждна защита на интересите на българското население. Анализът подчертава, че възприемането на цялостен подход, обхващащ както формалното, така и неформалното образование, наред с щателно адаптирани комуникационни стратегии за различни демографски групи, е от съществено значение. Поуките от Естония, Литва

и Хърватия категорично потвърждават, че добре планираната целенасочена комуникация, съчетана с практически улесняващи мерки, може успешно да преодолее първоначалния обществен скептицизъм и да насърчи безпроблемен процес на въвеждане на еврото.

Постигането на стратегическата цел за завършване на процеса на интеграция чрез приемането на еврото налага съгласувани и съвместни усилия на всички сектори на обществото. *Правителството*, наред с ключови институции като Българската народна банка и Министерството на финансите, трябва да ръководи тази инициатива, като осигурява ясна политическа насока, авторитетна информация и регулаторен надзор. *Бизнес секторът*, особено търговските банки и доставчиците на финансови услуги, трябва активно да участват в разпространението на информация и в предлагането на практическа подкрепа на техните клиенти. *Образователните институции* – от началните училища до университетите, носят отговорността да вградят финансовата грамотност като основна компетентност за бъдещите поколения. *Неправителствените организации* с техния достъп до местни общности и със специализираната си експертиза са решаващи партньори в предоставянето на целенасочени образователни програми и в изграждането на обществено доверие.

Този интегриран, многостранен подход е от първостепенно значение за осигуряване на адекватна подготовка на всеки български гражданин за бъдещето с еврото, насърчавайки както икономическата устойчивост, така и социалното сближаване. Призивът за съвместна работа между правителството, институциите, бизнеса, образователните и неправителствените организации надхвърля обикновената политическа препоръка – той рамкира въвеждането на еврото като национален обществен проект, изискващ нова форма на обществен договор. Това означава, че успехът на прехода към еврото не е само икономическа или правителствена отговорност, а споделена обществена задача, която влияе върху дългосрочното национално развитие и върху благосъстоянието на гражданите.

Конфликт на интереси

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THE EURO, FINANCIAL LITERACY AND THE EXPERIENCE OF OTHER COUNTRIES: A COMPARATIVE ANALYSIS

Abstract: The article analyses the pivotal role that financial literacy will play in Bulgaria’s forthcoming adoption of the euro, portraying the transition as a fundamental transformation that entails significant opportunities alongside systemic risks. Empirical evidence reveals a capability gap that could deepen market inefficiencies, stimulate price speculation and fuel public discontent. The study identifies the economic and social imperatives of literacy: facilitating price comparisons, protecting consumers from fraud and strengthening trust in the monetary changeover. A multi-layered national strategy is advocated, combining (1) systematic financial education at every scholastic tier; (2) large-scale informal programs for vulnerable adults; (3) digital calculators and mobile applications; (4) communication campaigns adapted to demographic specifics; and (5) coordination among government, the Bulgarian National Bank, business and NGOs.

Comparative scrutiny of Estonia’s, Lithuania’s and Croatia’s changeovers isolates proven instruments: mandatory dual price display, business ethics codes, free cash exchange and mobile information teams. Evidence from these cases shows that the mix of preventive inspections, public disclosure of violators and fines limits the one-off inflationary effect while bolstering public confidence. Enhanced literacy, in turn, reinforces economic integration through lower transaction costs, greater investment appeal and stabilized inflation expectations. The article concludes by urging Bulgaria to adopt an urgent communication strategy with measurable milestones ($\geq 80\%$ awareness, $\geq 60\%$ support), to intensify price oversight and to frame euro adoption as an “inter-sectoral social contract” requiring strategic managerial resolve.

Keywords: financial literacy; euro introduction; Bulgaria; economic integration; communication strategies; financial education; Estonia; Lithuania; consumer protection; public project

JEL codes: F36; E42; I22; D14; H12

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INSTITUTIONALIST CLUES IN CELSO FURTADO'S ECONOMIC THOUGHT: A BRIDGE BETWEEN OLD INSTITUTIONALISM AND LATIN AMERICAN STRUCTURALISM

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Abstract: This paper examines the intersection between Celso Furtado's economic thought and Old Institutional Economics (OIE), a connection largely overlooked in the literature. Although best known as a leading figure of Latin American structuralism, Furtado's work incorporates key institutionalist principles, notably the centrality of institutions, historical path dependence, and the role of power in development. His approach converges with OIE in its critique of neoclassical equilibrium models, emphasis on cumulative causation, and evolutionary view of economic systems. Furtado's analysis of social heterogeneity, institutional constraints, and cultural factors further resonates with institutionalist frameworks. By combining historical analysis, interdisciplinarity, and an active role for the state, his work bridges structuralism and institutionalism, offering valuable insights for contemporary development theory. Recognising these connections enriches both traditions and advances the debate on the institutional foundations of economic development.

Keywords: Latin American structuralism; Celso Furtado; Old Institutional Economics

JEL codes: B20; B25; B52; O17

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Introduction¹

This paper examines the similarities between the work of economist Celso Furtado² and the Old Institutional Economics (OIE). It aims to highlight the numerous points of

¹ We are grateful to the participants of the Annual STOREP Conference (October 2020), the YSI Virtual Plenary on New Economic Questions (November 2020), the ASU Winter Institute (January 2021), and the Seminario del Programa de Historia Económica y Social (PHES), Universidad de la República, Uruguay (May 2021), for their valuable comments and critiques.

² Celso Furtado (1920–2004) was born in Pombal, Paraíba, in Brazil's Northeast – a region marked by past prosperity, long decline, and rigid social structures. Growing up there shaped his worldview and commitment

convergence between Furtado's approach and Old Institutionalism, many of which remain underexplored in the existing literature.

Theoretical Background: Old and New Institutional Economics

Although Institutionalism is a method of investigating economic phenomena under which very distant and even contradictory theses can be found, the OIE – also known as American Institutionalism – appears relatively cohesive within its framework. The OIE views economic behaviour as influenced by social, cultural, and institutional factors, emphasising the historicity and evolutionary dynamism of institutions. From the earliest works (Mitchell, Commons, and especially Veblen), the need for an interdisciplinary approach to the study of economics was asserted, rejecting the strictures of marginalism and highlighting the crucial role played by history, culture, laws, rules, habits, and social structures in shaping the economic conditions and growth prospects of regions, even when these are different and distant from one another. Due to these characteristics, OIE must be clearly distinguished from New Institutional Economics (NIE), which emerged in the 1970s. The NIE uses the tools of neoclassical theory to study the role of institutions, but maintains an individualistic and rationalist focus. It examines institutions through the lens of transaction costs and contractual frameworks, attempting to integrate them into the neoclassical paradigm, ultimately sterilising their role. According to Rutherford (2011), interdisciplinarity and the lack of a unified theoretical core position OIE more as an intellectual movement than a structured school of thought. Nevertheless, despite the variety of approaches, OIE shares some foundational principles: (i) the rejection of the reduction of economics to abstract

to understanding Brazil's challenges. Early on, he developed core beliefs: human relations are often governed by arbitrariness and violence; confronting them requires more than reason; and this struggle, like a river, is ongoing, without final victories. From high school onward, he drew on positivism, Marxism, and North American sociology. In 1939 he moved to Rio de Janeiro to study law, graduating in 1944. Though economics was not yet a discipline, his studies in administration led him to the field. He earned a doctorate in economics at the Sorbonne in 1948 with a thesis on Brazil's colonial economy. His work thereafter focused on three major themes: capitalist expansion, the nature of underdevelopment, and Brazil's economic formation. Furtado's career unfolded in three main phases. During his years at the Economic Commission for Latin America and the Caribbean (ECLAC), he collaborated with Raúl Prebisch in Santiago, gaining direct exposure to Latin America's development challenges. On returning to Brazil in 1959, he founded the Superintendence for the Development of the Northeast (SUDENE) to reduce regional inequality, and in 1962 became the country's first Planning Minister, drafting the Three-Year Plan. The 1964 military coup, however, led to his exile and loss of political rights. He then devoted himself to academic life, teaching at Yale, Columbia, Cambridge, and above all the Sorbonne, where he worked for two decades.

After the 1979 Amnesty Law he returned to Brazil, but continued his research in France. In the following years he also served as Ambassador to the European Economic Community, as Minister of Culture (1986–88), and as a member of international commissions on culture and development. In 1997 he was elected to the Brazilian Academy of Letters. Celso Furtado died in Rio de Janeiro on November 20, 2004.

models of rational agents maximising utility; (ii) the centrality of institutions; (iii) an evolutionary and historical perspective; (iv) and an empirical orientation as opposed to the abstractions of neoclassical theory. OIE authors were uniformly critical of the neoclassical concept of equilibrium.

Over the years, this original institutionalist root has experienced mixed fortunes, until it was substantially reshaped by the rise of New Institutional Economics (NIE) Around the early 2000s, an important revival of the traits and methods characteristic of the OIE tradition was carried out by Geoffrey Hodgson, who is credited with the attempt to systematize the American institutionalist tradition and to identify (Hodgson, 2000) the common denominator among its adherents: the institutionalized individual.

1. Celso Furtado and Latin American Structuralism

Celso Furtado stands as one of the most innovative intellectuals of the twentieth century. He integrated diverse influences into his economic studies and intellectual journey, a practice common within the Latin American structuralist approach. Despite being a key figure in the development of Latin American Structuralism, however, he transcended its boundaries, contributing to its enrichment. This nuanced perspective can be attributed, in part, to influences from French Structuralism, as highlighted by Love (1999). With key figures such as Claude Lévi-Strauss, Louis Althusser, and Michel Foucault, French Structuralism shaped Latin American thought in various ways. Lévi-Strauss's structural anthropology impacted Latin American thinkers in their understanding of indigenous cultures and social structures (Lévi-Strauss, 2011). Althusser provided theoretical tools to analyse how institutions and social structures reproduce the dominant ideology; his concept of Ideological State Apparatuses (Althusser, 1970) has been widely used in Latin America to examine the role of institutions such as schools, the Church, and the media in maintaining social order and political domination. Foucault, with his focus on power and social control, influenced the analysis of how power manifests in institutions, legal systems, and the economy. He was instrumental in developing critiques of authoritarian institutions in Latin America, particularly during periods of dictatorship and repression (Merquior, 1985)³. In summary, French Structuralism offered a theoretical framework that Latin American thinkers adopted and adapted to their unique realities, blending the European structuralist approach with the need to understand the continent's political, social, and cultural specificities.

To contextualise Furtado's contributions, it is essential to examine more closely Latin American Structuralism, a methodology inaugurated by Argentine economist Raúl

³ Although Merquior was a critic of Foucault, his book reflects the significance of Foucauldian thought in the Latin American context. Foucault's theories on power, biopolitics, and institutions have been widely adopted to analyze dictatorships, political repression, and mechanisms of social control across the continent.

Prebisch (1901–1986) during his tenure as the second Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC) in the early 1950s.

The structuralist approach (see Rodríguez, 2006), first presented by Prebisch in *The Economic Development of Latin America and Its Principal Problems* (see Prebisch, 1962), posits that the underdevelopment of Latin America is not a transitional phase toward development but rather a consequence of the international division of labour. According to this perspective, advanced and industrialised economies such as Western Europe and the United States play a dominant role in producing manufactured goods for export, while Latin America is relegated to producing primary commodities. Within this framework, Prebisch reevaluated Ricardo's comparative advantage theory. The specialisation of the periphery in primary products, he argued, does not result in a mutually beneficial scenario. Instead, Prebisch observed a continual decline in the relative prices of primary products over the long term compared to manufactured goods produced in the centre. The centre benefits from domestic technological advancements, enabling it to retain savings and distribute higher wages and profits, while peripheral countries must export more to obtain the same value of industrial imports⁴.

Key features of the periphery include low diversification of its economic structure, high specialisation in a few sectors (agriculture, minerals), low average productivity, a significant productivity gap among sectors (with a few high-productivity, low-employment sectors and a vast majority with very low productivity), institutional weaknesses, and a low-risk propensity in the private sector. Structuralists, therefore, recommended an active role for the State in promoting industrial policies to alleviate growth constraints in the periphery.

Furtado collaborated with Prebisch at ECLAC from 1948 to 1957. In this context, he adhered to and contributed to the structuralist tradition. He utilized tools and analytical categories from multiple disciplines and enriched the tradition by incorporating economic history, culture, and institutions into a country's development pattern in a pragmatic approach: "The need for diagnosing the problems of national economic systems in various stages of underdevelopment led him to bring economic analysis closer to the historical method" (Furtado, 1964, preface, vii).

In this sense, he established (Furtado, 1965) a link between growth and income distribution and analysed the tendency toward continued underemployment (Furtado, 1964). Most notably, he introduced the idea of underdevelopment as a "system of culture" (both material and non-material), a permanently "locked" cultural system:

⁴ The well known Prebisch-Singer hypothesis (1950), autonomously elaborated by the two economists, is one of the pillars of the Latin American structuralism.

“Celso Furtado highlighted creativity and culture as fundamental factors for development. Two aspects set him apart from other scholars. First, he considered culture a value system that can be dialectically defined – determinant or determined – as both a function of the social (creative) process and a framework within which this process develops. Second, he diverged from his structuralist, ECLAC-based colleagues in viewing creativity and culture as (i) endogenous elements of development and (ii) central to the dependent relationship between peripheral Latin American nations and central countries, the owners of the so-called ‘industrial civilisation’” (do Amaral Filho and Farias, 2016, p. 445).

Regarding pragmatism and policies, Furtado believed that economists should play an active role in public life as social scientists. He personally served as director of the Brazilian National Economic Development Bank, led the Economic Superintendence of Brazil's underdeveloped Northeast, and twice held ministerial posts in his country. On the role of the intellectual, he wrote: “I was left with some idea of the social role of intelligence, particularly in times of crisis. I imagined myself above the conditions created by my social insertion and was convinced that the challenge consisted in instilling a social purpose in the use of that freedom” (cited in Mallorquín, 2005, p. 638, own translation).

Above all, Furtado's contributions made a lasting impact on development economics. According to Bielschowsky (2006), he is recognised as a pioneer in several areas: the theory of underdevelopment; the historical analysis of Latin America's economic lag; the concept of social heterogeneity as a key factor shaping the diversity of economic structures; and the critique of a “one-size-fits-all” development model based on the European industrial revolution. In addition, he highlighted the importance of technological and intangible innovations in economic growth. While Furtado is undoubtedly a central figure in Latin American Structuralism, his ideas reveal institutional dimensions that are vital to his work.

This paper highlights the key points of convergence between Furtado's thought and the OIE approach. Like OIE, Furtado's framework is characterised by pragmatism, rejecting rigid a priori principles in favour of continuous adaptation to evolving circumstances. This perspective aligns with a core pillar of institutionalism: the evolutionary nature of economic phenomena, which are inherently path-dependent. Similarly, Furtado recognised the necessity of intervention in response to undesirable equilibria, reinforcing the institutionalist notion that the evolution of economic systems can be “intelligently guided.”⁵ Moreover, he consistently attributed economic disparities between regions to historical circumstances, echoing the institutionalist emphasis on the role of history in shaping economic trajectories. Hodgson (2000) identifies the

⁵ Unlike Furtado, however, Veblen considered the cultural lag of the leisure class inevitable.

historically institutionalised individual as a defining feature of institutionalism, a concept that resonates with Furtado's thesis that individuals, while constrained by historical conditions, can reshape these constraints through their actions, creating a reciprocal process of causation.

Another point of convergence is the interdisciplinary nature of both Furtado's work and the OIE tradition, reflecting a shared commitment to integrating insights from various disciplines. Finally, both OIE and Furtado's approach acknowledge the central role of power – political and otherwise – in shaping economic outcomes, further reinforcing their conceptual alignment.

The remaining sections of this paper are structured as follows: the next section outlines the main points of contact between Institutionalism and Structuralism in general. Section three delves into the conceptualisation of Institutionalism, elucidating its specific features. Section four identifies the elements of an institutional perspective within Furtado's thought. Section five concludes.

Structuralism and Institutionalism: An Essential Comparison

Several scholars, such as Mallorquín (2006) and Ormaechea (2020), have identified points of contact between structuralism and institutionalism. However, despite these connections, efforts to foster a dialogue between representatives of the two traditions – as undertaken by scholars such as Street (1987a, 1987b), Street and James (1982), and Sunkel (1989) – have faced challenges, with the two approaches remaining largely unaware of each other, except in some specific cases⁶.

Hereinafter, three primary points of contact between structuralism and institutionalism will be explored: the role of habits, the resurgence of power in economic discourse, and the theme of development.

Firstly, both structuralism and institutionalism reject the idea that economic phenomena result solely from rational choices made by maximising, self-interested agents. Instead, they emphasise the ordinary nature of decision-making based on habits. However, recognising the role of habits does not imply a rejection of rational choice. Rather, it suggests that both rational decision-making and adherence to habits are credible ways of making decisions and, consequently, producing economic outcomes. According to Mallorquín (2006):

“[...] decisions of many consumers are activities close to ‘habit’ or ‘custom’; in other words, they are not ‘choices’ derived from preset general criteria among different alternatives.” (cited in Mallorquín, 2005, pp. 88–89, own translation).

⁶ Santiago Macario, who was student of Ayres, is a relevant exception (see Mallorquin, 2006, p. 85).

Habits, being at the core of institutionalism, also assume a central role for structuralists. This results in a relativisation of rational choice, a shared aspect that unites them and represents a unique case within a specific institutional context.

Moreover, by defining economic phenomena as partially dependent on institutional patterns, addressing the question of the origin of these institutions becomes essential. Exploring the origin of institutions, in turn, leads to an examination of who shapes the specific institutions under consideration. This inquiry necessarily involves the study of power as a force capable of shaping institutions and, in turn, influencing economic outcomes. It is interesting to note that structuralists did not limit their concept of power to the traditional idea of external control, which could be inferred from Latin America's colonial past. Rather, they promoted the notion that any form of power tends to promote the creation of institutions, providing a structure that allows dominant individuals, groups, and classes to maintain their influence.

"Latin American peripheral positioning is not just the result of a dominance imposed from outside, but it is also recreated through the logics deployed by Latin American actors – especially the dominant ones – and institutions" (Omacoechea, 2020, p. 326)

Third, while the issue of development has been central to structuralist analysis since its inception, institutionalist interest in this domain emerged later, primarily as a consequence of a focus on the technological dimension of new social structures (Dutta, 2014). As a result, the study of development dynamics evolved independently within Old Institutional Economics (OIE) and Latin American structuralism until the 1980s, when, according to Dutta (2014, p. 9), institutionalist and structuralist perspectives in development economics began to converge:

"A convergent approach of the two views of structuralism and institutionalism seems to have been attempted in the formulation of global (capitalist) productive systems by a diverse group of French writers (Michel Aglietta, Alain Lipietz, etc.) known as the 'regulation school!'"

Finally, in addition to the three characteristic elements briefly discussed, there may be a deeper connection in terms of the normative objective of economic analysis. Mallorquín (cit., p. 19) notes that two distinguished representatives of the two approaches, Mitchell and Prebisch, shared similar objectives. Mitchell maintained that "[t]he only reason to study economic theory is [to make] the world a better place to live in"⁷, while Prebisch claimed: "[...] the duty I imposed on myself, and that I always tried

⁷ "La única razón para estudiar la teoría económica es para hacer del mundo un mejor lugar en donde vivir", translation is ours, Mitchell (cited in Ramstad, 1989, p. 762, own translation).

to accomplish: to contribute, as far as possible, to the education of a youth able to serve effectively the national economy.”⁸

The Essence of Institutional Economics

In this section, we will present the most relevant institutionalist features for comparison with Celso Furtado’s thought.

1. Institutions shape consumption and investment patterns

Institutional economics approaches consumption from a distinctive epistemological and methodological perspective. Consumption does not solely respond to individual needs, nor is it always optimising and coherent; rather, it is a social phenomenon shaped by historically and socially determined norms and values. Consumer goods, therefore, are not directly aimed at satisfying individual needs, but also become desirable because of the social context to which individuals belong or aspire to belong. Luxury goods, for instance, may be perceived as undesirable in one context or as a *conditio sine qua non* for entry into another. This concept is clearly illustrated by Veblen’s conspicuous consumption: the purchase of goods adheres to social norms that demand such purchases as a signal of membership in a certain status group.

“Conspicuous consumption of valuable goods is a means of reputability to the gentleman of leisure.” (Veblen, 1899, p. 75).

More generally, as Hamilton (1987, 1541) himself puts it:

“[...] today it is realised that all behaviour is both individual and social at the same time, and that the form that it assumes is a culturally conditioned and derived one. In fact, there is no such thing as a solitary individual who is not [the] product of the acculturation process” (Commons, 1931, p. 653).

Commons emphasises the role of customs and contracts in shaping consumption choices, which are not merely directed toward the good to be purchased but toward the property rights that the transaction allows one to acquire. Thus, not only social norms but also the very instruments mediating the relationship between the individual and the good can influence consumption decisions. Starting from the idea of institutions as collective action, he introduces the concept of the transaction as the *“smallest unit of institutional economics”* (Commons, 1931, *ibidem*). He concludes:

⁸ *“el deber que me había impuesto y que siempre traté de cumplir: el de contribuir en lo que fuera posible a la formación de una juventud apta para servir eficazmente a la economía nacional”* (Prebisch, cited in López, 1988, p. 71, own translation).

“Transactions intervene between the labour of the classic economists and the pleasures of the hedonic economists, simply because it is society that controls access to the forces of nature. Transactions are not the ‘exchange of commodities,’ but the alienation and acquisition, between individuals, of the rights of property and liberty created by society, which must therefore be negotiated between the parties concerned before labour can produce, or consumers can consume, or commodities can be physically exchanged.”

Investments, too, and therefore growth, depend – within the perspective of the OIE – on institutional characteristics. Ayres (1944) argues that economic growth is driven by technological progress, while institutions can act either as obstacles or catalysts depending on their ability to adapt to change. For example, traditional institutions and power groups often resist new investments to protect their own interests. Conversely, advanced educational systems, which prepare individuals to work in rapidly changing economic environments, foster a greater predisposition toward new investments.

Mitchell (1927), despite adopting a predominantly empirical approach based on statistical data, demonstrates how institutions implicitly influence the business cycle. The banking system and credit emerge as key institutions, determining the amount of credit available for investments, just as government institutions can shape the cycle through credit regulation and public spending management. Investment decisions themselves are not purely rational but are influenced by social factors, expectations, and market conventions.

In summary: *“Mitchell thought of business cycles as a phenomenon arising out of the patterns of behaviour generated by the institutions of a developed money economy”* (Rutherford, 2011, p. 177).

2. The role of rules in shaping economic outcomes: development and underdevelopment

The OIE rejects the notion that universal market mechanisms, such as capital accumulation, are sufficient to ensure economic development. Instead, it focuses on the frameworks of rules that can promote, constrain, or obstruct the development of certain economic systems while condemning others to persistent underdevelopment. Free trade, secure and efficient property rights, or adequate capital accumulation alone are not enough to guarantee economic progress, as development is a process of cumulative causation, driven by technological innovations and resisted by outdated institutions. By rejecting the idea that the free market automatically leads to development, institutionalist economists argue that economic progress is an evolutionary process, strongly shaped by social and cultural structures.

Ayres (1944) introduces the concept of institutional lag: while technology advances rapidly, institutions tend to be slower in adapting to change. When institutions fail to evolve, they hinder progress, leading to economic inefficiency and underdevelopment. Conservative institutions often seek to preserve the status quo, resisting technological transformations. Economic underdevelopment is therefore not a natural condition but rather the outcome of institutions' inability to adapt to technological change. In underdeveloped countries, institutions tend to protect dominant elites, thereby limiting the diffusion of innovation. They often suffer from a vicious cycle of institutional backwardness, where social, political, and economic structures obstruct modernisation and the adoption of new technologies. Unequal access to resources, imbalanced power relations, or institutions – whether formal or informal – can concentrate the distribution of surplus generated by production and trade into the hands of a few. This stifles growth and condemns the economy to permanent underdevelopment. Conversely, development requires inclusive institutions⁹ that promote the participation of a wide range of economic actors, ensuring fair access to resources, opportunities for technological innovation to ignite the engine of development, and the protection of property rights.

Myrdal (1957) demonstrates that economic dynamics do not automatically tend toward equilibrium but can instead perpetuate existing inequalities, requiring deliberate interventions to foster equitable development. In analysing the root causes of these inequalities, he introduces the concept of circular and cumulative causation. Economic processes tend to reinforce each other, creating virtuous cycles in developed regions and vicious cycles in underdeveloped ones. To counteract these processes, Myrdal advocates targeted policy interventions, including institutional reforms, investments in infrastructure and education, and redistributive policies, with the goal of breaking the vicious cycle of underdevelopment and promoting balanced economic growth.

3. The Institutionalised Individual

The institutional approach to understanding economics traces back to Veblen, who rejected the idea of man as

"[...] a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire for happiness under the impulse of stimuli that shift him about the area, but leave him intact" (Veblen, 1899, p. 89).

⁹ This definition contrasts with the later concept of "extractive" institutions developed by Acemoglu and Robinson (2012). In their framework, "inclusive" institutions are those that ensure a broad distribution of the economic surplus among the actors who contribute to its creation, whereas "extractive" institutions concentrate that surplus in the hands of a restricted elite.

Quite the opposite, the institutional view of individuals is closely tied to relational modalities, which are defined as institutions:

"The situation of today shapes the institutions of tomorrow through a selective, coercive process, by acting upon men's habitual view of things, and so altering or fortifying a point of view or a mental attitude handed down from the past" (Veblen, 1899, pp. 190–191).

In his seminal paper, Hodgson (2000, p. 323) identifies the crucial aspect that characterises institutional economics as the concept of the "institutionalised individual." From Veblen to the present day, institutional thought has consistently rejected the neoclassical simplification that assumes individuals' tastes and utility functions are given. Instead, the institutional tradition asserts that human decisions are co-determined by constantly changing circumstances and influenced by various internal and external stimuli. In the words of Veblen (1919, pp. 242–243):

"[t]he wants and desires, the end and the aim, the ways and the means, the amplitude and drift of the individual's conduct are functions of an institutional variable that is of a highly complex and wholly unstable character."

The Veblenian concept of the institutionalised individual is closely connected to a Darwinian approach to evolution. Celso Furtado's approach, however, is distant from Darwinian evolution. Yet such a rejection does not imply a real distance from the evolutionary view of OIE scholars, at the core of which lies the idea of individuals conditioning institutions and being conditioned by them. This is because not all OIE scholars adopted the Darwinian view of evolution. For instance, Commons (1934) related the evolution of economic phenomena to laws and legal institutions; Ayres (1944) connected evolution to the contrast between technology and institutions, drawing more on John Dewey's pragmatist philosophy than on biological Darwinism; Clark (1939) tied evolutionism to the relationship between regulation and social control; and Mitchell (1927) studied economic cycles through empirical and statistical methods rather than a Darwinian framework. In this sense, the temporal dynamics of history as a matrix of development and underdevelopment, as adopted by Furtado, refer to a non-Darwinian conception of evolution.

Institutions, which both condition and are conditioned by individuals, can manifest as either rules or organizations¹⁰, exerting influence on people's behaviour in various ways. For instance, they may function as constraints on human choices, as seen in legal measures that prohibit certain actions. Conversely, they can act as incentives to engage in alternative behaviours, as illustrated by habits. This delineation serves to exemplify institutions functioning specifically as rules of behaviour. Prohibitions, habits, and

¹⁰ About the opportunity of including organizations in the set of institutions see Hodgson (2006).

organisations are not static; rather, they are continuously shaped by human agency, operating with varying degrees of consciousness, intentionality, and deliberation. Consequently, asserting that the institutionalised individual is the defining characteristic of institutional economics necessitates acknowledging a recursive process in which institutions shape individuals, who, in turn, reshape institutions in an ongoing cycle. Hodgson (2000, p. 327) describes this dynamic as “*reconstitutive downward causation*,” a form of causation contingent upon both human agency and institutional structures. This perspective contrasts with the top-down causation typically associated with the neoclassical tradition.

Significantly, such a mechanism can shed light on the concrete patterns that lead to specific economic outcomes, but it cannot predict, given certain preconditions, the exact outcome that will emerge¹¹. In contrast to the neoclassical view of the world, the future is not predetermined by an omniscient human reason. Instead, reason, institutions, and historical accidents¹² interact reciprocally to shape economic reality. At the heart of this interaction lies the institutionalised individual – an individual undoubtedly shaped by the institutions within which they operate, but also capable of transforming those very institutions. These institutions, renewed through the individual’s intervention, will in turn continue to influence the individual according to the dynamics of reconstitutive downward causation.

This circular trajectory cannot unfold in an abstract and timeless world. It necessarily transpires in time, because its intrinsic logic requires a continuous sequence of events involving a before and an after. It is crucial to emphasise that this sequence is not solely logical but unfolds in a factual, chronological manner. Consequently, history ceases to be a mere accessory of economic analysis and instead becomes the concrete manifestation of individual–institution interactions. In other words, placing the institutionalised individual at the centre means giving a prominent role in economic analysis to both history and the power that history consolidates.

In this light, different historical trajectories appear unpredictable as they are. According to Ayres (1944, p. 88):

“Understanding economic history is crucial for evaluating how technological and institutional forces have interacted in shaping economic evolution.”

¹¹ Significantly, the same result occurs in the generalized Darwinism version of the evolutionary institutionalism, which may be considered as a specification of the more general reconstitutive downward causation. See Hodgson and Knudsen (2010).

¹² For an overview of the concept of “critical juncture” in the sense here adopted, see Robinson and Acemoglu (2012).

Nevertheless, these interactions exhibit a specific inertial character, adding further uncertainty to the overall picture, as noted by Veblen (1899, p. 191):

"Institutions are products of the past process, are adapted to past circumstances, and are therefore never in full accord with the requirements of the present."

The role of institutions in shaping human conduct underscores, moreover, the significance of power in economic events: individuals with greater bargaining power possess the ability to influence institutions and, as a result, shape specific economic outcomes. This bargaining power, as North (1990) highlights, stems from an initial inequality of resources, which in turn explains the persistence of institutions that sustain these inequalities in favour of those who hold power. In this same sense, Mitchell argues:

"The dynamics of economic power are evident in business cycles, where the decisions of a few affect the welfare of many" (Mitchell, 1927, p. 78).

Accordingly, the discourse about power cannot be abstract but must be developed in concrete historical terms in which various forms of power manifest. Both these characteristics of the institutionalised individual – history and power – are reflected in Furtado's work.

Institutionalist clues in Celso Furtado's economic thought

According to Boianovsky (2010), Furtado's contributions in works such as *The Economic Formation of Brazil* and *Economic Development of Latin America* extend beyond the traditional domains of Latin American Structuralism for at least two reasons: his use of history, drawing from Braudel and Lévi-Strauss, and his emphasis on economic institutions. Within his historical perspective, Furtado demonstrates how culture and institutions have shaped the development processes of certain Latin American countries, particularly Brazil. He argues that the growth constraints of Brazil's economy – such as specialisation, the production of raw materials (coffee, minerals, sugar), and the dualistic structure of the economy – are legacies of colonial institutions. This is why Bielschowsky (2006) characterises Furtado as a historical-structuralist author.

Furtado stands out as the first Latin American structuralist to establish a direct link, a causal relationship, between culture and the development process of a country – an achievement rooted in the harmony of the social process (*el todo social*) (Rodríguez, 2006). In Veblenian terms, economic outcomes are intricately linked to rules and institutions implemented in the past, and are thus historically conditioned. This section highlights three features where Furtado's thinking can be directly aligned with Institutionalism: first, the way he attributes certain economic outcomes to institutional

variables, with particular emphasis on habits; second, the role he assigns to power; and third, his adherence to what Hodgson (2000) deems the essence of institutional economics: the institutionalised individual.

1. Institutions shape consumption and investment patterns

Celso Furtado was primarily a development economist, focused on identifying the factors that could drive progress in a country. He believed that technology plays a pivotal role in development and that technology is driven by savings and investments. Therefore, he concluded that the overall progress and development of a country are closely linked to its savings and investments. However, he also perceived these as variables that, in turn, depend on institutional factors:

“In the process of development, the behaviour of the coefficient of investment is strongly influenced by institutional and other factors bearing on the propensity to consume.” (Furtado, 1964, p. 71).

Furtado does not confine himself to general references to institutions, such as political systems, regulations, or traditional behaviour. He specifically alludes to particular institutions, as in the case of the consumption habits of the ruling classes:

“[...] the consumption of the capitalist class is determined by institutional factors and is largely independent of short-term fluctuations in the level of aggregate income.” (Furtado, 1964, p. 131).

The consumption behaviour of the wage-earning class, by contrast, is strictly dependent on the level of income and changes accordingly. Emphasising the inelasticity of the consumption pattern of the ruling classes, Furtado argues that the surplus generated by export activities is utilised to finance an increase and diversification of consumption rather than capital accumulation and investment:

“Actually, if it is assumed that the consumption of the higher income groups is regulated by institutional factors and is little affected by short-term alterations in the level of aggregate income, and that the consumption of wage earners is determined by the level of their current income and that their saving capacity is almost nil, then it appears that the maximum real consumption of the wage-earning class is determined jointly by the aggregate supply of consumption goods and services and by the level of consumption of the non-wage-earning classes” (Furtado (1964, p. 122).

Through the connection with investments, Furtado links institutional variables to total demand and, consequently, to the level of national income:

“The way demand develops is therefore a basic determinant of the course of new investments. The development of demand by virtue of the growth of national income is, in turn, largely [determined] by institutional factors” (Furtado, 1964, p. 66).

He therefore concludes:

"It may therefore be concluded that the production structure, the allotment of production assigned to accumulation, and the distribution of income all have the same fundamental causes. They are based on the institutional system, which in turn hinges on the appropriation of the surplus" (Furtado, 1964, p. 83).

Even though they are independent within this framework, institutional variables are themselves caused. In Furtado's view, the origin of such consumption behaviour lies in the specific structure of regional economies, which, in turn, trace their roots to power relations and the local histories that these relations have engendered.

2. The role of rules in shaping economic outcomes

We have just observed that the consumption patterns of the capitalist class hinder the economic development of underdeveloped regions. This dependence arises from the subordinate position of these economies relative to more developed regions. From this perspective, the underdevelopment of the periphery is the counterpart of the development of the centre, both being consequences of the Second Industrial Revolution. In this view, the dualistic economy is the result of a historical process rather than an inevitable stage in a singular path to development.

Furtado argues that the periphery should pursue development through industrial policies, yet industrialisation remains subject to its own historical dynamics and does not automatically follow the trajectory of the centre. The stagnation characteristic of underdeveloped peripheral regions can also be understood as a situation in which certain institutions persist unchanged for extended periods. As Hodgson (2010) suggests, this may occur when there are no significant factors driving variation. For instance, in an environment where institutions lack incentives for change, they may remain static. Likewise, an economic structure may fail to evolve over time if the surrounding environment, including the political context, does not create the necessary conditions for its transformation.

This discussion inevitably leads Furtado to address the problem of power. A prime example is found in chapter six of Furtado (1961), which describes the structural change in the British and French colonisation model of the Antilles Islands in the seventeenth century. The shift from settler farming and small landholdings to a slave economy was driven by the increase in European demand for tropical products and the competition of new suppliers, such as Virginia in North America, that employed slave labour intensively. As a result, the Antilles altered their economic trajectory, specialising in sugar production with enslaved labour imported from Africa.

Within just a few decades, the Antilles became strong competitors for Brazilian sugar. According to Furtado, the overspecialization model of the Antilles, based on sugar cultivation, encouraged the settler economy in the northern colony of America. The influx of enslaved people led to emigration, with European settlers leaving the Antilles for North America. Ultimately, the Antilles and the North American colonies came to represent two distinct models of colonisation, each shaped by different power dynamics.

The first model, based on extensive plantations, concentrated economic surplus in a small circle of landlords who met their consumption needs by importing goods from abroad. In contrast, the second model saw property rights of land shared among several small owners, fostering a larger national consumption market. These sharp differences in economic structure corresponded to variations in the behaviour of social groups in the two colonies. In the Antilles, the ruling class had close links to financial groups in London and exerted strong influence in the British parliament, treating the islands as an extension of British firms. Conversely, the ruling class of North America had connections with traders based in New York or Boston (often in conflict with London), or were agrarian groups disconnected from Old England. According to Furtado, the independence of the North American ruling class from London was a key factor in the region's development, as these groups represented their own interests rather than the business interests of England. Thus, power relations were not simply bidirectional but rather complex, involving a third pole on the other side of the Atlantic.

Another example from Furtado (1961), chapter twelve, presents two different models for employing indigenous people as workers in Brazil between the eighteenth and nineteenth centuries. In Maranhão, settlers hunted indigenous people and employed them as slaves. The Jesuits, on the other hand, took a completely different approach: they kept indigenous communities intact, organised a network of them, and enlisted their help in gathering forest products (cocoa, cloves, etc.). The Jesuit solution proved much more effective, yielding higher labour productivity. Different power relationships thus led to different development outcomes.

In general, the development process as reconstructed by Furtado cannot escape specific forms of power relationships:

"The form of utilisation of surplus production and the social position of the group appropriating it are basic elements of the social process which engenders development." (Furtado, 1964, p. 86).

A power relationship can emerge and persist only insofar as it is socially embedded. Without such a foundation, it would lack stability and fail to generate enduring economic

outcomes. In other words, power must be legitimised through a form of social acceptance – an institution – if it is to exert lasting effects.

3. Institutionalised individuals

We have previously examined the idea that the institutionalised individual can be seen as embodying the essence of institutionalism. This concept closely parallels that of history. In its origins, material conditions imposed certain constraints on human freedom. However, within these limits, free human choices played a role in shaping new conditions – both material and non-material – which, in turn, restricted subsequent choices, and so forth. The cumulative sequence of choices made by individuals, influencing the conditions in which future choices would be made, constitutes nothing less than history itself. It is an unfolding process where every element (facts, choices, circumstances) is caused, and those causes are, in turn, themselves caused.

“Celso Furtado highlighted creativity and culture as fundamental factors for development. Two aspects set Furtado apart from other scholars. First, he considered culture a value system that can be dialectically defined (that could be determinant or determined): a function of the social (creative) process and the way in which this process relates to a cultural system. Second, he set himself apart from his structuralist, ECLAC-based colleagues by seeing creativity and culture as (i) endogenous elements of development and (ii) an important part of the dependent relationship between peripheral (Latin American) and central nations (owners of the so-called ‘industrial civilisation’). In this context, one fundamental point in Furtado’s reflections is that the individual is not only the heir to a given culture, but he/she can also transform and improve it.” (do Amaral and Farias, 2016, p. 445).

In this sense, the entirety of Furtado’s work revolves around the concept of institutionalised individuals, intrinsically linked to historical dynamics. Consider his depiction of the European Middle Ages as a period marked by a high technical level but essentially lacking an endogenous process of development:

“[F]or development to occur as an endogenous process in feudal Europe, it would have been necessary for political integration to come about first of all. This would have involved one group’s imposing itself progressively on other groups, leading to the formation of larger economic units in which commerce might be able fortuitously to encounter conditions favourable to its development and intensification. Various kinds of factors outside the scope of economic analysis prevented this political integration from occurring, gaining stability or penetrating deeply into the social organism. The linkages formed through personal connections did not have sufficient driving power to permit the agglutination of an economic system, inasmuch as they did not require setting up an integrated administrative and security system. As a matter of fact, such linkages reflected

the inability of the central authority to govern; they amounted to delegations of that power” (Furtado, 1964, pp.92–93).

This passage encapsulates the fundamental elements necessary to identify an authentically institutionalist dimension in Furtado’s thought, emphasising three key points. First, it illustrates that the phenomenon he examines – the endogenous process of development – is not uniform across different historical contexts but is instead contingent upon specific historical conditions. For instance, this process did not materialise in feudal Europe. Second, the absence of this process can be attributed to the lack of a critical prerequisite, which is unequivocally institutional in nature: a certain degree of political integration. Finally, political integration encompasses the entirety of institutions previously discussed – shared rules and organisations that emerge from autonomous human choices yet remain constrained by preexisting structural conditions.

Furtado’s argument, however, may encounter objections from those who contend that the mere elimination of external constraints would suffice to restore the natural trajectory of economic development. In response to such objections – common in classical development theory¹³ – Furtado clarifies:

“This perspective, however, presents a fundamental flaw in ignoring the intrinsic historical dimension of economic development.”

And further:

“By introducing the historical dimension, I was led to ask a methodological question: what contribution can the social sciences, particularly economics, make to the study of history? A similar question had been asked by European historians at the École des Annales. They sought help from the social sciences, and we, starting from the latter, sought it from history. My question stemmed from the idea that underdevelopment, because of its specificity, was beyond the explanatory reach of theories of economic growth.” (Furtado, 1990, p. 166, own translation)

As do Amaral Filho and Farias (2016, p. 445) note, the idea of an individual who is both conditioned and conditioning is explicitly present in Furtado:

“[...] one fundamental point in Furtado’s reflections is that the individual is not only the heir to a given culture, but he/she can also transform and improve it.”

Furtado explicitly communicates the notion that individual economic patterns may conform to predictable schemes, but always within the context of historical conditions

¹³ This is the case of the developmental economics as designed by Harrod (1939), Domar (1946), Kaldor (1957).

determined by individuals of the past. His perspective – that economic circumstances are influenced by human choices, which are themselves constrained by institutions shaped by those very choices – reinforces his alignment with the core principles of institutional economics.

Conclusions

This paper aims to highlight the significant yet often overlooked intersections between Celso Furtado's economic thought and the tradition of Old Institutional Economics (OIE). While Furtado is primarily recognised as a structuralist, our analysis demonstrates that his work incorporates several foundational elements of OIE, particularly in its emphasis on institutions, historical path dependence, and the interplay between power and economic development.

Both Furtado and OIE scholars reject the neoclassical assumption of economic equilibrium, instead highlighting the evolutionary and historically contingent nature of economic processes. By integrating economic history, cultural factors, and institutional dynamics into his analysis of underdevelopment, Furtado extends and enriches the structuralist framework in ways that resonate with OIE principles. His insistence on the institutional and historical roots of economic disparities aligns with OIE's methodological focus on cumulative causation and institutional inertia.

Furthermore, his insights into power structures and economic dependency align with the institutionalist critique of extractive institutions and their role in perpetuating economic asymmetries. Concrete examples have been provided to illustrate how institutions shape consumption and investment patterns, influence economic outputs, and reinforce the reciprocal relationship between institutions and individual agency. This dynamic interaction is central to both traditions and underscores the need for an interdisciplinary approach to economic development.

By highlighting these points of convergence, this paper contributes to a broader intellectual dialogue between Latin American structuralism and OIE. It suggests that while Furtado's work is deeply rooted in the historical realities of Latin America, its conceptual depth extends beyond structuralism into the broader domain of institutionalist thought. Future research should further explore additional points of contact between Latin American structuralism and OIE.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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THE CONCEPT OF TAX GAP: ESSENCE, DEFINITION, TYPES, COMPONENTS, METHODS, INTERNATIONAL PRACTICES AND CHALLENGES IN ITS MEASUREMENT

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Abstract. The tax gap, also referred to as a tax 'difference', 'mismatch', 'emptiness', 'omission', 'hole', 'deficit', 'shortage', 'loss' or 'damage', represents the amount of tax revenue lost or foregone. It is the difference between the potential and actual revenue collected. More specifically, it is the difference between the amount of tax that could theoretically be collected if all taxpayers fulfilled their tax obligations by voluntarily submitting complete and accurate tax returns and paying the taxes due, compared to the current, or hypothetically most extensive, tax legislation, and the amount of actual collected tax over a specific period. This article provides a literary overview of the 'tax gap' concept and issues related to it, as well as theoretical and practical insights related to its nature, components, and methods and practices used for measurement in some advanced countries and in Bulgaria. Statistical data are also presented along with results from a survey conducted in December 2024 and January 2025 among experts in the field of financial control in Bulgaria working at the National Revenue Agency (NRA) and the Customs Agency, as well as university lecturers in finance and accounting. The author's insights are intended for experts from revenue organisations and can also be useful to scientific and business analysts more broadly.

Keywords: tax gap; compliance gap; tax gap analysis; positive tax gap; shadow economy tax gap

JEL codes: H25; H26; E26

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Introduction

A strategic objective of risk management in revenue administrations is to increase the level of compliance by taxpayers. To achieve this objective, tax, customs, and other revenue agencies should make a conscious choice of measures to maintain and promote

voluntary tax compliance and limit tax noncompliance. Accordingly, increasing trust in public authorities leads to voluntary compliance, while strengthening authorities' powers leads to forced compliance. This presupposes an assessment and analysis of the level of compliance with tax obligations, respectively non-compliance, and the study of the tax gap helps risk management to better understand the scale of tax compliance and the potential for revenue increase.

Although the functioning of modern revenue administration is based on the assumption of voluntary taxpayer compliance, there are often few tools to comprehensively measure and monitor tax compliance. Knowledge of the value of tax differences can be used as a strategic tool to decide on the allocation of resources to improve compliance and tax policies in general. Knowledge of tax gaps also contributes to transparency in public administration among stakeholders as an indicator of tax administration performance and fiscal potential. The tax gap is an indicator of fiscal risk and areas where revenue can be mobilised if taxpayers' non-compliance is reduced or the legislative framework of the taxation and incentive policy is amended. Tax mismatch is the most common indicator of various problems related to tax collection.

Compliance risk management is crucial for revenue administrations. If taxpayers are the 'soul' and control the 'heart', risk analysis is the 'mind' of the modern tax process. The analysis aims to identify risk levels and differences in taxation. Gap analyses are an important component of risk management, which is the basis for the prioritisation and treatment of tax risks.

Addressing the problem of unpaid taxes is a collective responsibility that starts with understanding the scale and scope of the 'tax gap' (FTGPG, EC, 2016; 2018). Understanding the elements of the tax gap enables tax policymakers and tax authorities to make better decisions on how to allocate the resources used to administer taxes (IRS, 2016). The tax gap is a valuable tool not only to define the tax administration's enforcement strategies, but also to improve its accountability (Durán-Cabré et al., 2019). It is a useful tool for measuring fiscal performance, as it can provide insight into the effectiveness of the government in fulfilling its tax collection task (Mitu, 2023). By assessing the tax gap, the administration can both get a clearer picture of the size of the problem and how and why taxpayers do not comply, as well as analyse certain trends. Moreover, a more insightful understanding of the gap can also help to better target compliance and recovery measures, as well as help ensure a tax system that is fair and responsive to all taxpayers (CRA, 2022).

The subject of research in the publication is the concept of 'tax gap', with a focus on the compliance gap caused by taxpayers' non-compliance and the issues related to its nature, components, methods, international practices and challenges in measuring it in the advanced countries and in Bulgaria.

The main objective of this article is to provide a literary overview of the fundamental and most recent documents published by leading international tax organisations, developed tax and/or customs administrations, and some scientific studies, as well as an overview of the views of experts from Bulgaria in the field of financial control – tax and excise control, analysis, compliance risk management – working at the NRA, the Customs Agency, and teaching at some universities in Bulgaria, collected through a survey. As a result, the aim is to derive comparisons and insights of the author related to the publication.

The tasks to achieve the goal are limited to an analysis and a summary of the main theoretical and practical situations and modern practices in the measurement of the tax gap.

The topicality of addressing the concept of the tax gap as a whole is of increasing interest and a challenge for more and more revenue jurisdictions, and the assessment of the tax gap has become a more popular topic of discussion in recent years (OECD, 2024; FTGPG, EC, 2018). The need for research on the issue is in line with the governmental priorities to reduce noncompliance, counter violations of legislation, combat tax fraud and tax evasion, facilitate legitimate trade, modernise, and improve working methods. These priorities are constantly in discussion among society worldwide, with prospects promising to continue to do so.

The methodology of the submitted study contains the methods of ‘documentary research’ and ‘content analysis’, as well as methods of scientific knowledge such as ‘comparative analysis’, ‘expert analysis’, as well as ‘analogy’ and ‘observation’. A ‘descriptive method’ was also applied, using an anonymous email survey related to individual questions about the tax gap implemented through Google Forms (forms). The survey was carried out between December 2024 and January 2025 among 238 people out of a total of 1057 invited experts from Bulgaria in the field of financial control – tax, customs and excise, analysis and management of tax risks, tax fraud, and the shadow economy. Experts from the NRA¹ and the Customs Agency, mainly from the central departments, as well as lecturers from financial and accounting structures of universities, who, according to their professional and functional affiliation, are supposed to have theoretical and practical expertise and vision on the topic, were interviewed. At the end of the publication, only some of the results of the entire study are presented (see Yotov, 2025a; 2025b).

The limitations of this study are related to limited access to information with results of evaluations and analysis of differences in taxation, as well as the research methodologies of most revenue agencies in the EU and beyond. The available knowledge is generally limited to commentary on the background by international tax organisations, such as

¹ The survey was conducted after permission from Executive director of the NRA of Bulgaria.

the OECD, the IMF, the IOTA, the CIAT and the EC, as well as some more advanced administrations, such as those of Australia, the United Kingdom, Sweden and Canada. In this regard, there is limited public data on the understanding of the tax gap, as well as details of methods, methodologies and results of similar surveys of revenue administrations in Bulgaria, in order to better understand them and subject them to critical analysis.

Specific scientific contributions of the publication are:

- *Systematisation of concepts and definitions of the 'tax gap'* – provides an overview and analysis of the different definitions of the 'tax gap' introduced by leading international organisations, national tax administrations and other researchers, structuring them into an overall classification. An author's definition of 'tax gap' and divisions for its components are proposed;
- *Conceptualisation of the term 'positive tax gap'* – the phenomenon is defined and justified, which is a situation in which the revenue actually collected exceeds that which is theoretically due. The main scenarios for the occurrence of such a difference are outlined;
- *Conceptualisation of the term 'shadow economy tax gap'* – a separate component of the tax gap is defined and justified in the sense of the part of the shadow economy that leads to the emergence of a tax gap. For the purpose of deriving the concept from a survey, experts from Bulgaria are asked how they would define the concept of 'tax loss from a shadow economy' after being presented with definitions of the shadow economy and tax gap. The differences and similarities between the concepts of 'shadow economy' and 'tax gap' are drawn, and the author's definition is proposed;
- *Systematisation of the methodological framework for assessing the tax gap* – a comparative analysis of the two leading approaches – top-down and bottom-up, as well as of the logics 'from general to private' (deduction) and 'from private to general' (induction) is presented. A matrix of advantages and limitations has been created, which can be used as a basic practical guide by revenue administrations;
- *Empirical contribution* – for the first time in Bulgaria, a survey of financial control experts in Bulgaria by the NRA, the Customs Agency and academia on tax risk management, including the tax gap, is being conducted and presented. The study reveals the familiarity with the concept of the tax gap, the attitudes towards the publicity of the data and the need for the participation of external experts in the assessments of the tax gap in Bulgaria, in the context of the good practices of the developed administrations.

1. Tax gap: Essence and definitions

The gap in taxation can be determined from the institutional point of view of the revenue authorities (national or local) or of the international organisations which administer or determine the taxation policy, in general, as the difference between the potential and the actually collected revenue of taxes and fees in the respective type of budget (national, local, other).

The term 'tax gap' can be defined broadly as the difference between potential taxes and taxes actually collected of a certain type. This, according to the author, is the difference between the amount of tax that can theoretically be collected, providing that all relevant activity, income and assets were taxed, if all taxpayers have fully fulfilled their tax obligations in taxation by voluntarily submitting complete and accurate tax returns and paying the taxes due compared to the studied structure of tax policy (current, normative or optimal, with or without tax relief) and the amount of tax actually collected for a certain period. The gap arises because the amount of tax collected is always lower than it should have been and lower than it could have been legally if all economic activities had been taxed on equal terms at a flat rate. The less tax collected in the budget is called a 'tax gap'.

The definition shows that the gap may exist for a different type of tax, not only because of taxpayers' non-compliance (the 'compliance gap'), but also because of the tax policy for preferential taxation (the 'policy gap'). *The source of the tax gap* is the discrepancy compared to a hypothetical tax structure in the form of *the broadest possible theoretical' tax base*.

There is no common harmonised definition of the concept of 'tax gap' among revenue administrations. In this respect, the overall tax gap is usually defined as the difference between the potential and the actual tax revenue (OECD, 2024). For each tax, the gap is the difference between the potential revenue from the basic economic tax base and the actual revenue (Hutton, 2017). The gap in taxation can be calculated as the difference between the total amount of tax that can theoretically be levied on the basis of the applicable tax law and the total amount of tax actually levied in a given period (FTGPG, EC, 2016). The tax gap is the difference between the revenue potential, which provides for the legal and regulatory differences of the country, and the revenues actually collected; accordingly, two sets of possible revenues are established – economic and legal (Khawaja, Iyer, 2014). The effectiveness of tax collection depends on two crucial factors: taxpayer compliance and government rebates. In this respect, the compliance gap is the difference between the revenue that would be collected if all taxpayers complied with the requirements and the actual revenue collected by the tax authorities, and the policy gap is the revenue foregone due to the application of reduced rates and exemptions compared to a uniform flat statutory tax rate (EC, CASE, 2024).

The tax gap is the difference between the taxes actually collected and the taxes theoretically collected, in full compliance with the tax code and at standard rates of taxation (UNI-WIDER, 2024). A comprehensive interpretation of the tax gap is that it is the difference between what the taxpayer would theoretically have to pay under a broader reference tax model, which involves a loss of revenue due to different policy measures, and what is actually collected (MEF, Italy, 2016). It is the difference between the amount of tax actually paid and the maximum amount of tax that could theoretically be collected if all activities, income and assets were taxed at a standard rate and if all taxpayers had paid their tax debts in full and correctly (Petrova, 2022). The tax gap is the difference between the taxes that theoretically have to be collected (based on the scale of the economic activity and the regulations in force) and the taxes actually collected (EY, 2025).

As one of the main objectives of revenue administrations is to increase the level of compliance and reduce the tax gap, *their focus is on measuring the compliance gap*, as a key indicator for understanding the effectiveness of tax and customs administration in tax collection and the general state of the tax system, rather than measuring the difference in tax policy (OECD, 2024). Given this, *administrations and scientific researchers have defined the term 'tax gap' in a narrower sense as the equivalent of 'budget loss' or 'compliance gap'*.

The compliance gap is the difference between the tax that taxpayers have to pay and what they actually pay on time (IRS, 2016; Durán-Cabré et al., 2019) or, otherwise, the difference between the actual tax liability and the amount of tax that is paid voluntarily and on time (IRS, 2005). It is defined as the difference between the amount of tax imposed by the Tax Code and the amount that is accounted for and paid with timely declarations (Mazur, 2007). The tax gap is the difference between the tax that should theoretically be paid and the tax actually paid (HMRC, 2021). Tax gaps assess the difference between the estimate of what is expected to be collected and the estimate of the amount that would have been collected if each taxpayer had fully complied with the law. They are what is not directly observable by the tax administration – what they have not told us (ATO, 2024).

According to another definition, the tax gap is the difference between the taxes that would have been paid if all obligations had been fully met in all cases and the tax actually paid and collected or, in other words, a measure of the potential loss of tax revenue as a result of non-compliance (CRA, 2016; 2022). It is the difference between the theoretical total taxes payable and the taxes actually collected, showing the extent to which payment obligations are fulfilled (FTA, 2023). This is the difference between the amount of tax imposed by the tax law and the amount that is accounted for and paid together with the timely declaration (Korauš et al., 2021). The gap is defined as the

difference between the tax actually collected and the total tax liability in absolute or relative terms, and the total tax liability is an estimated amount that can theoretically be collected on the basis of legislation and supplementary provisions (EC, CASE, 2024). The tax mismatch is the difference between the potential tax and social security revenue that would have to be paid into the budget if all taxable persons had complied with the legislation and the tax and social security revenue actually received, voluntarily paid (NRA, 2025). The tax compliance gap, also known as the 'tax gap', is the difference between actual and potential collections, given the current structure (TADAT, 2019).

Although international organisations and most tax administrations generally interpret the tax compliance gap relatively uniformly, *some administrations define it differently according to what their assessment involves and aims to achieve.*

The Swedish tax administration defines the compliance gap as the difference between the tax that would have been final if all taxpayers had correctly accounted for their activities and transactions and the final tax following the audits by the administration. If the difference is corrected following controls by the tax authorities, it no longer constitutes a tax difference (STA, 2021). The OECD has a developed revenue ratio (VRR) for VAT purposes, which is an indicator that also measures the tax gap, combining the effect of revenue losses due to exemptions and reduced rates, fraud, tax evasion and tax planning. In theory, it measures the tax gap between the revenues actually collected and what would be increased if a standard rate were applied to the entire potential tax base under a 'clean' regime, if all revenues were collected (OECD, 2022). The Bulgarian NRA defines the tax gap as 'audit gap' and 'potential gap' for risk analysis purposes. The audit gap is the difference that is likely to be identified if control actions are taken, and the potential gap is the difference between the taxes theoretically due that would have been charged to the budget if the risk did not exist, and the taxes actually declared and paid voluntarily.

2. Types and components of tax gap

The tax gap, in accordance with the concept of the IMF as also the EC and many tax administrations that have adopted it, can be divided into two main types: the tax compliance gap as a result of taxpayers' non-compliance with tax requirements and the tax policy gap as a result of preferential taxation or incentives, as well as the government's exempt activities ('policy tax gap') (Hutton, 2017; FTGPG, EC, 2016; MEF, Italy, 2016; EC, CASE, 2024). The classification is based on the scale of the scope of taxation (the structure of the tax policy studied) at the relevant level of tax compliance.

The structure of tax policy, for its part, can be divided into three types according to the scope of the taxable base and the applied tax rates – current, normative and optimal (or

often referred to as reference or even maximum) (IMF, 2015). *The compliance gap* covers the current policy structure of a theoretical tax base with normal enforcement tax rates, with preferential treatment and aims to measure how much taxes would potentially be collected under the assumption of full compliance by taxpayers or, in other words, how much taxes are not collected due to various discrepancies. *The policy gap* covers the normative or optimal (maximum) structure when taxed on a theoretical basis up to the level of standard tax rates without preferential treatment and aims to measure how much tax expenditures are for practically taxable economic activities or foregone revenues from non-taxable activities that, if taxed, would potentially be collected taxes under the assumption of full compliance. *In other words*, the compliance gap is the amount of tax that should be paid according to the current tax legislation (the potential tax liability) less the amount collected by the government (the actual revenue), and the policy gap incorporates a reduction in the all-inclusive potential liabilities due to policy choices or nontaxable items.

In general, there is no international consensus among tax organisations on what should be included in the normative and optimal tax policy for individual taxes. For this reason, the policy gap is often not defined as compared to the compliance gap. To some extent, the normative and optimal (reference) policy for VAT (Hutton, 2017; EC, CASE, 2024; FTGPG, EC, 2016) and corporate income tax (Patricio, Hutton, 2023; FTGPG, EC, 2018) is defined (Ueda Junji, 2018), where there is a broader consensus, but it's not defined for personal income taxes (IMF, 2021), excise (Thackray, Alexova, n.d.) and other levies. A policy gap is a legal choice that represents the difference between the potential revenues in the 'standard' tax system and the potential revenues in the current tax system, but may also contain an element of tax avoidance (FRS, 2019). The policy gap is also defined as the difference between the tax calculated on a tax base determined by tax laws, the tax calculated at a standard rate on a theoretical tax base that would include in taxation all the elements (activities, income, funds) that could theoretically be taxed (Petrova, 2022).

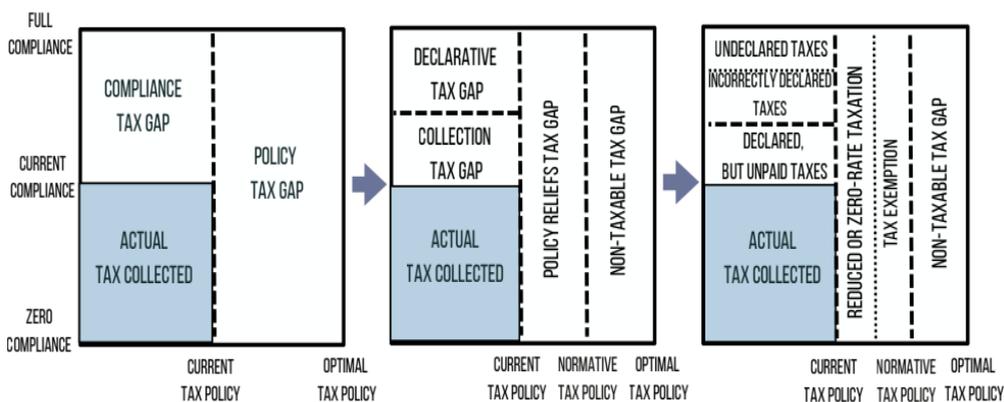
It is more difficult to measure the tax compliance gap than the tax relief policy gap (Ueda Junji, 2018; Hutton, 2017). This is because *the compliance gap is mainly the hidden (the undeclared) tax base, and the policy reliefs gap is usually a clearer (less hidden) tax base* (the declared preferential tax base, but also the undeclared base, in cases where taxpayers are not obliged to declare it).

The author supports the view that the compliance gap can be divided into two components: a declarative tax gap (commonly referred to as the assessment tax gap), which is the sum of the fully and/or correctly undeclared registration tax gap, a reporting tax gap and a filling tax gap and a collection tax gap (also known as payment gap).

The declarative tax gap corresponds to the amount of taxes that are not declared in full or in part but would be due under the current tax system, or, in other words, it is the difference in the hidden economy that is not known or not reached by the tax authorities. It shows the concealed tax base by the revenue authorities due to non-declaration at all (both from taxpayers who are not registered in the tax system and those who are in) and incorrect declaration or improper use of a tax credit (from taxpayers who are registered in the tax system), as a result of which no taxes and other levies were collected. It's a filing and reporting gap.

The collection tax gap is the difference between the amount of taxes charged and declared voluntarily by a taxpayer or additionally established by control but not paid, or, in other words, the debts of which the tax authorities are already aware, but which have not been effectively collected.

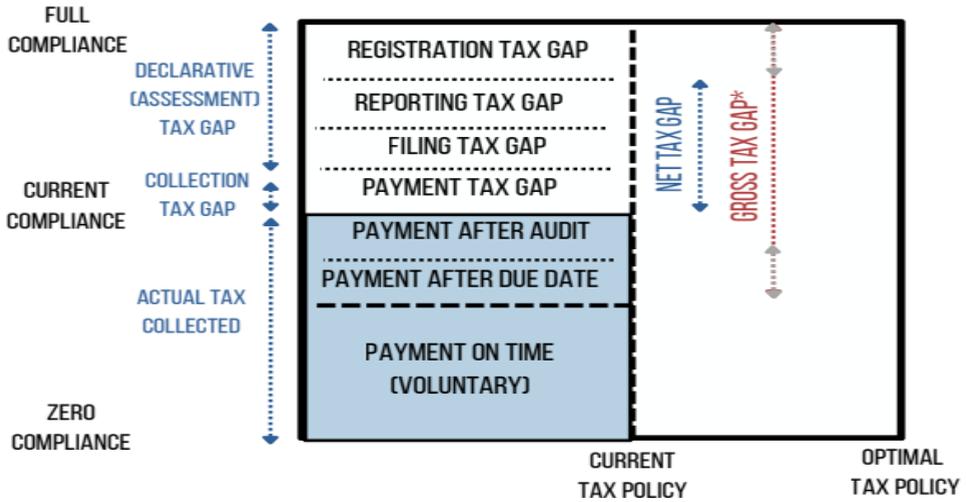
The policy gap is also divided into two sub-types – a gap in the tax reliefs, representing tax expenses for the government (*policy reliefs tax gap* or also expenditure tax gap), as well as a gap in the activities that are not taxable in principle, but could hypothetically be taxed – *non-taxable tax gap* (see Figure 1).



Source: Author's illustration.

Figure 1. Components of the tax gap

The compliance gap can be divided according to the source of non-compliance with the main tax obligations by taxpayers for correct registration, timely declaration, correct filling in declaring and timely payment as a – *registration tax gap, reporting tax gap, filing tax gap and payment tax gap*. These sources of non-compliance are the forms of manifestation of tax risks that lead to a reduction in the tax base collected and are therefore the source of a gap. The compliance gap can be divided into a 'gross tax gap' and a 'net tax gap' in terms of before and after the audit results are reported and taxes are paid on time (see Figure 2).



Source: Author's illustration.

Figure 2. Gross and net tax compliance gap components

The gross tax gap is defined as the difference between the actual (theoretical) tax liability for a tax year and the amount actually paid on time by taxpayers voluntarily and in a timely manner, and the net tax difference refers to the remaining amount due from the total tax liability, after taking into account all payments made through enforcement actions and voluntary late payments. The net tax gap is the part of the gross gap that will not be paid (IRS, 2016). According to another definition, the gross tax gap is an estimate of the difference before taking into account compliance and collection actions, and the net is an estimate after subtracting compliance and collection as a result of the gross tax difference. The gross difference is the total projected tax compliance gap, while the net tax gap takes into account the impact of tax administration enforcement activities (CRA, 2016; 2022). The gross gap is the difference between the estimate of the amount we expect to receive (which includes what is voluntarily reported and paid) and the estimate of the amount of tax we would theoretically receive if every taxpayer complied fully with the law. The net gap is the one that reduces the gross difference by the amount of amendments that represent compliance actions by the tax administration, plus any amendments made by the taxpayer (ATO, 2024). The net tax gap is the gross tax liability minus the amount of tax required by the supervisory authorities (Kosova et al., 2018).

The components for determining the gross and net tax gap also differ in different valuation concepts and practices across countries. In the net gap some countries only look at the audit results (STA, 2021), which may be before and after the final determination of the additional tax accrued in cases of legal challenge, while other countries also include

voluntary paid taxes beyond the deadline (late payments) (IRS, 2016; CRA, 2016; ATO, 2024; Patricio, Hutton, 2023). The gross tax gap, as understood by the US Revenue Service (IRS), Indonesia and some other administrations, is divided into three components – the non-filing gap, the underreporting gap and the underpayment gap (IRS, 2016; DGTI, 2024; Mazur, 2007). In the last examples, like the IMF, the registration gap is not covered (Patricio, Hutton, 2023), while OECD and other researchers have defined it (OECD, 2016; UNI-WIDER, 2024).

The compliance gap can also be divided according to the reasons for the occurrence as an “intentional tax gap” and “unintentional tax gap”. In both cases, there is a tax loss, but in one case, it is due to intent (unwillingness to pay taxes) and in the other to lack of intent. The intentional gap may be due to targeted actions of tax avoidance (legal), tax evasion (illegal) and tax fraud (illegal). The unintentional gap is caused by errors due to ignorance of the law or complex and unclear legislation leading to misinterpretation and misapplication of tax rules, technical errors of declaration, negligence, bankruptcy, but also other extraordinary circumstances of occurrence, like a war, non-tariff commercial policy measures such as prohibitions and restrictions (including embargoes).

The tax compliance gap can be divided into different incisions according to the focus of the study. For example, in some studies, it is divided into a gap from the shadow economy, tax fraud, tax evasion and others, such as legal disputes, bankruptcies, mistakes and tax optimisation (see EY, 2025).

Each of the components of a tax gap may contain an ‘undetected tax gap’. It may be separated as an unvalued component or as a valued component under certain assumptions.

It should be made clear that the terms ‘tax gap’ and ‘shadow economy’, also referred to as ‘grey economy’, ‘hidden economy’, ‘underground economy’, ‘informal economy’, are different; they are not equivalent. The both terms are often used as synonyms in the research space of ‘economic activities’ with goods, assets and services, as they are carried out for profit purposes that are not ‘not reported’ in the official national accounts of statistics and finance, generate income/turnover that ‘violates existing legislation’, including avoiding prohibitions and restrictions or the payment of taxes are generally due. According to the author, *the tax gap reflects* a loss of revenue in the budget from legal economic activities subject in principle to taxation as a result of intentional and unintentional behavior infringing tax legislation, *while the shadow economy reflects* monetary income/turnover from legal and illegal activities that may not be taxed on the fiscal side as a result of intentional behavior infringing tax or criminal legislation, including avoiding prohibitions and restrictions or the payment of taxes if taxes are generally due.

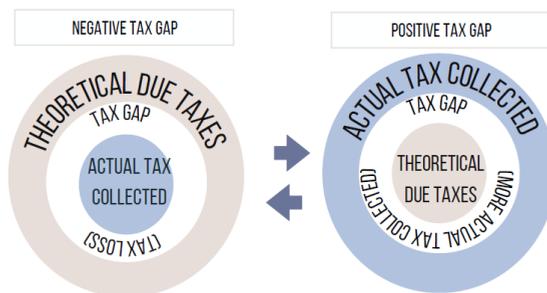
In this context, the term *'shadow economy tax gap'* can also be defined², in the sense of part of the shadow economy that leads to the emergence of the tax gap. The shadow economy, is a source of tax gap only when each of the conditions is met – that the activities are economic, that there is a requirement to declare them in full and correctly to the tax administration, but not to declare them, that they are therefore not taxed and that they are, in principle, permitted by law, that is to say, that there is a legal framework for its carrying out and that they are subject to a tax rate other than zero. It is the deliberately hidden tax base for the tax authorities, which is the source of a tax gap (loss) from non-compliance with fiscal legislation, regardless of whether the perpetrator is a registered or unregistered taxpayer. It follows that *not every shadow economy in the broad sense is a source of the tax gap. Given the components of the tax gap set out above, it is also valid vice versa – not every tax gap is a source of a shadow economy, but only the 'declarative compliance gap', which is linked to a lack of fully and correctly reporting when required. In this sense, it should also be emphasised that the tax frauds and other forms of tax non-compliance, which are generally declared, should not be a source of the shadow economy in the broad sense, once they are declared and reported, even though they are a source of tax loss.*

From a tax perspective, the 'shadow economy' is seen as a significant part of the tax gap by most international tax organisations and national tax administrations (OECD, 2012; 2017; FTA, 2023; Schneider, Buehn, 2010; Khwaja, Iyer, 2014; CRA, 2023; 2024; EY, EC, 2023; EY, 2025; EC, 2021; HMRC, 2017; MEF, Italy, 2016). There is no common harmonized definition of the concept of 'shadow economy' even among the revenue administrations and in the scientific literature it is interpreted much more broadly, because the components within the scope of the term differ on the offending entities, the legality and legal nature of the actions, as well as the results differ (see Karpuzova, Naydenov, 2024; Dimitrova, 2024; Chengelova, 2014; Schneider et al., 2015; Breusch, 2016; Feige, 2016; Koufopoulou, Williams, 2019; Bitzenis, Vlachos, 2016).

*The tax gaps, according to the thesis in the paper, can be divided by the result of – "negative tax gap" and "positive tax gap"³. In other words, when the revenue collected is less than the theoretically collectable, the result is a negative gap (or simply said, "a gap"). When the revenue collected is more than theoretically due, the result is a positive gap (see Figure 3). *When measuring the overall tax gap, negative and positive tax flows should be assessed, i.e. the minuses and the pros.* This is because the symmetry in the measurement and interpretation of the result requires it, but also because when tax policy is changed, each country can be indicated in the opposite situation. Most often, the practice of administrations is not to assess positive flows or to focus on tax losses.*

² Some of the author's insights were derived after conducting a survey aimed to define the term (Yotov, 2025b).

³ According to the basis of comparison, the two terms can be named backwards.



Source: Author's illustration.

Figure 3. Types of tax gap by outcome

In general, the tax gaps are negative, i.e. there are losses to the budget, and the revenue agencies use the concept of 'gap' in the sense of 'negative gap'. The positive gaps are rather an exception that can occur both in the case of the compliance gap and the policy gap. They most often occur in international transactions for indirect taxes such as excise duties, VAT, customs duties, but also in transfer pricing and money laundering. The reasons for the emergence of positive gaps can be significant differences in tax rates, tax incentives and reductions, exchange rates, non-tariff commercial policy measures such as prohibitions and restrictions (including embargoes) on imports, exports, production and consumption or avoidance of burdensome administrative procedures in international supplies. Their emergence is facilitated in the international free movement of goods, persons and capital between countries where border controls are not in place and/or where there are no additional controls on operations, such as the Schengen Area and the European Union. Positive tax gap also arises in the case of document tax frauds, where taxes are paid in one country without the transaction being physically carried out in that country in order to avoid paying taxes in the less advantageous country or, conversely, in order to obtain a tax preference. Such differences can also occur when there is no actual tax non-compliance – for example, when taxes are paid in one country, but the goods are deliberately exported within the limits of free movement to another country from companies and individuals, since from a legal point of view the laws in the exporting country are not violated, but certainly this represents a positive gap for the exporting country.

Measuring the tax gap in absolute and relative terms is important to know when comparing the gaps between different types of taxes, tax categories, forms and manifestation scenarios, different parts of the economy and groups of taxpayers in terms of prioritisation of resources and expected treatment effect. However, it is more common to present losses in relative terms as they are not dependent on changes in inflation and are less affected by changes in the size of the economy, tax rates, tax rules and make comparisons at the international level possible to some extent when a

uniform methodology is applied. An advantage of the relative size gap is that it should facilitate comparison between different countries, as tax rates and economic sizes differ from one country to another, and an absolute comparison would not take these factors into account. That is to say, *comparing tax gaps in different countries on the basis of relative expression is, to a certain extent, hypothetically possible if there is a measurement using a single methodology, but under multiple theoretical assumptions*. At present, measurement according to a uniform methodology of tax gap is carried out only in the EU by the Centre for Social and Economic Research (CASE) on behalf of the EC, covering only VAT (EC, CASE, 2024) and a project to VAT gap due to Missing Trader Intra-Community (MTIC) tax fraud (EC, CASE, WIVO, 2024). In this regard, *the focus in the interpretation of the results should be on the trend of the results over time, and not on absolute or relative values*.

Tax gaps are usually presented at a higher level in relative proportion to the theoretical tax base (taxes), but also to the accrual or collected tax base (taxes). It is also possible to be presented as a proportion of the GDP or NDP of the country (Raczkowski, 2015; Harremi, 2014; FTGPG, EC, 2016).

All estimates of the tax gap are rough indicators of tax revenue losses. However, as long as the estimation approach and methodology used are consistent over time, the gap analysis would provide a reliable estimate of the trend over time.

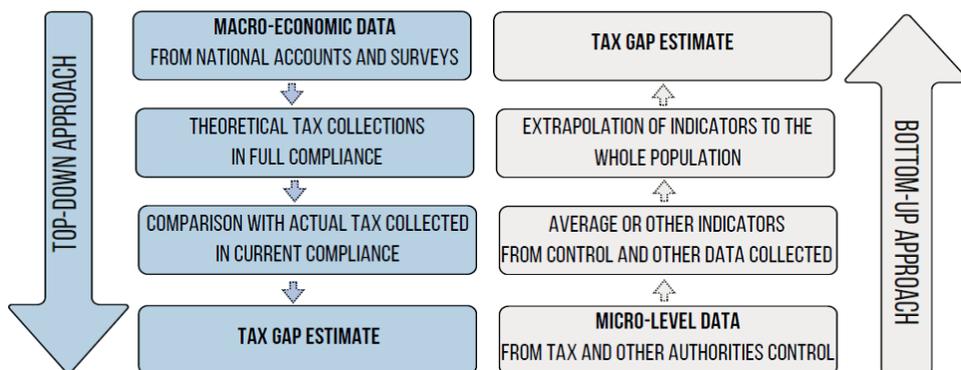
3. Methods for estimating the tax gap: types, advantages and disadvantages

In general, there is no international consensus on which method and even more so, what methodology as a set of logically related approaches, methods, data and techniques to determine tax gaps. There is no approach that can be identified as the best. The choice of method and specific methodology depends on the desired level of understanding of the tax gap, available data, available resources, time to perform the analyses and other factors. Therefore, *when considering evaluations, it is also important to clarify how it has been carried out and what is or is not also covered in the relevant evaluation and, accordingly, what objective is pursued by the evaluation*.

The assessment of the tax gap is carried out using two main methods, also called approaches or techniques – top-down and bottom-up. It should be borne in mind that *there are other alternative methods, such as monetary methods, Mimic model, shadow economy models, econometric techniques, surveys and other physical survey techniques, including hybrid methods, which cannot be classified as pure top-down or bottom-up methods and which are less suitable for being applied for the tax administration's purposes*. They may also be a potential means of calculating individual parts of a tax gap for certain taxes.

Top-down methodologies (also called indirect) are based on macroeconomic data for national accounts indicators of statistics and finances of a country for the whole economy, including often consumption and production, as well as survey data as an alternative or complement to national accounts information in quantitative or value terms. These data are presented at an aggregated level and are considered to be independent of (external to) the tax authorities, i.e. not contained in the tax returns and other data of the tax authorities. However, in cases where national accounts are based, they are also largely dependent on other government bodies, as some of them are contained in declared or created government data. The approach is based on the calculation of the theoretical tax base in full compliance with the legislation, from which is calculated the theoretical final tax that should have been collected, and the tax gap is the difference between this assessment and the total amount of taxes voluntarily charged by the persons and collected by the administration.

Bottom-up methodologies (also called direct) are based on microdata, which are individual taxpayer data from tax control results (most often from risk-based audit or random audit selection data) carried out by tax authorities and from controls by other government authorities, such as customs, police, economic agencies, but also other (non)-government data. These data are dependent on the tax authorities, and quite often other state authorities (internal ones), as they are declared for them or created by them. Individual data may also be collected through surveys and observations by the tax authorities, to be extrapolated for the respective infraction. These approaches do not first estimate the theoretical tax that can be collected, but first collect data from control results (audit) or other data, often based on samples. Their results are extrapolated, and thus statistical and econometric techniques lead to an assessment of the theoretical tax that can be collected from the entire population of economic units and population.



Source: Author's illustration.

Figure 4. Main approaches to estimating the tax gap

The two methods have different strengths and weaknesses depending on what data they are based on, what scope they have, how long their implementation takes, how much financial and human resources they require, what the results include and how they can be used. *With this in mind, both methods should be combined and applied, as such integration provides better and more detailed information on the tax gap than using only one method. Both approaches complement each other and are necessary to assess the real tax gap.* The advantages and disadvantages of the main methods can be summarised as follows:

	TOP-DOWN METHODS	BOTTOM-UP METHODS
DATA	MACROECONOMIC INDICATORS AND DATA	MICRO DATA INDICATORS FROM TAX CONTROL AND OTHERS DATA
	INDEPENDENT ON TAX AUTHORITIES (EXTERNAL)	DEPENDENT ON TAX AUTHORITIES (INTERNAL)
	DEPENDENT ON OTHER GOVERNMENT AUTHORITIES	DEPENDENT ON OTHER GOVERNMENT AUTHORITIES
	RELATIVELY LESS DATA AND PROCESSING	LARGER VOLUME OF DATA AND PROCESSING
	LOWER QUALITY, LESS SECURITY AND LESS ACCURACY	HIGHER QUALITY, GREATER SECURITY AND HIGHER ACCURACY
TIME AND RESOURCES	LESS TIME TO APPLY	MORE TIME TO APPLY
	SMALLER LAG WITH THE RESEARCH PERIOD	LARGER LAG WITH THE RESEARCH PERIOD
	FEWER FINANCIAL AND HUMAN RESOURCES	MORE FINANCIAL AND HUMAN RESOURCES
SCOPE	COMPLIANCE TAX GAP AND POLICY TAX GAP	COMPLIANCE TAX GAP AND PARTLY POLICY TAX GAP
	COMPREHENSIVE, COVERS THE ENTIRE DIFFERENCE (LOSS)	PARTIAL, DOES NOT COVER THE ENTIRE DIFFERENCE (LOSS)
	THE HIGHEST LEVEL THAT IS DIVIDED INTO SECTIONS	INDIVIDUAL LEVEL THAT IS EXTRAPOLATED AND GENERALIZED
	LOW RISK OF DUPLICATING AN ALREADY ASSESSED DIFFERENCE	HIGH RISK OF DUPLICATION OF AN ALREADY ASSESSED DIFFERENCE
METHODOLOGIES	SIMPLER, STANDARDIZED AND STABLE OVER TIME	MORE COMPLEX, MORE SPECIFIC AND MORE UNSTABLE
DETAILING	SMALL, MOST GENERAL	A LARGE, DETAILED ASSESSMENT OF SPECIFIC DIFFERENCES
	DOES NOT INDICATE THE REASON AND SOURCE OF THE DIFFERENCE	INDICATES THE CAUSE, SOURCE AND FORMS OF DIFFERENCE
RELIABILITY	LOWER RELIABILITY OF THE RESULT	HIGHER RELIABILITY OF THE RESULT

Source: Author’s illustration.

Figure 5. Advantages and disadvantages of the main approaches to estimating the tax gap

A choice of an appropriate top-down or bottom-up method does not depend on the type of tax being examined, as both methods are applicable. Usually, a top-down approach is used for indirect taxes, and a bottom-up approach is used for direct taxes.

The top-down approach allows assessment of the compliance and policy tax gap, while the bottom-up approach allows assessment of the compliance gap and only in some cases, a policy gap for a certain type of taxes, components and sources of tax reliefs for which the tax authorities have or could collect data to extrapolate.

The top-down approach aims to provide an overall assessment of all tax revenue foregone as the difference between potential and actual tax bases and tax collections

through macro-level data, while the bottom-up approach aims to provide a partial assessment of tax revenue foregone by assessing a specific source of tax non-compliance, based on individual control results (random or risk-based audit) or other administrative data that are extrapolated and obtain an overall assessment of revenue foregone.

The outcome of a top-down approach should also include an assessment of the non-observed and, in some cases, of the shadow economy, insofar as it is based on national accounts data and should be assessed by the statistical institute of the country concerned. However, it is often possible that the grey economy data are not derived or that there is a consideration in the measurement. The bottom-up approach should not fully cover the assessment of grey economy losses, as it is primarily based on declared data or data from random or risk-based controls (tax audits), the quality and scope of which are usually incomplete.

A top-down approach is cheaper for the administration and less time-consuming than a bottom-up approach (Hutton, 2023; IMF, 2021; STA, 2021; FTGPG, EC, 2016; 2018; CRA, 2016).

A top-down approach requires relatively less data volume and less data processing, as opposed to a bottom-up approach.

Top-down methodologies are relatively simpler, standardised and more stable over time than bottom-up methodologies.

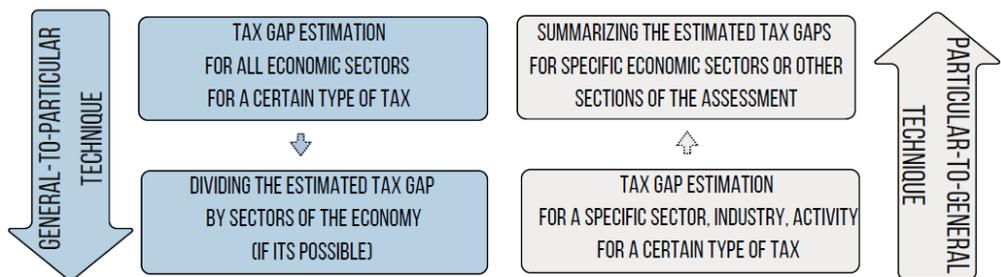
The top-down approach has less certainty and accuracy of the assessment due to lower granularity, and because the result obtained represents an indirect rather than a direct link between the assessments obtained and the taxpayers' behaviour that generates them. For the bottom-up approach, the opposite is true – it provides more certainty and accuracy of estimates due to greater granularity, as the gap is broken down into partial gaps, which are a direct link to the gap and taxpayers' behaviour (FTGPG, EC, 2016). The lower accuracy of the data in the top-down approach is due to the fact that they are most often based on national accounts for statistics, finance and money, which may not fully cover the unexplored economy and fraud, where in fact the biggest loss to the budget should be generated. In this regard, the following discussion logically arises – since national accounts data are mainly based on declared data for various government purposes, can they provide a relatively reliable, accurate and comprehensive result on the size of the total tax gap, given that this is a type of "cross-check" mostly among declared data with multiple assumptions about differences in research methodologies? In this regard, according to the author, when more reliable estimates are needed, i.e. less risk of omissions, the "top-down" approach should be used, but based on data and independent studies (surveys and others), when possible, rather than on data from government accounts or a "bottom-up" approach should be used.

The top-down approach mainly presents information on the total amount of the gap, but does not identify the source (type of non-compliance), the forms, causes and manifestation scenarios of the gap, the specific groups of taxpayers (legal and illegal, large, medium and small), separated taxpayers, does not allow for the distribution of the gap by territorial basis or other more detailed sections, as long as the bottom-up approach normally allows it. This means that the result of the top-down method cannot be used for more precise control interventions against certain sectors and branches of the economy, while the bottom-up method can.

The top-down approach estimates only the total gap, but not the components of this gap, while the bottom-up approach estimates only parts of the components (partial gaps) and the total difference must be calculated by aggregating all gaps (STA, 2008). This means that under a bottom-up approach, there is a risk that by taking into account partial differences for individual cuts, there may be double-counting for some cuts, hence an overestimation of the overall gap.

The top-down approach depends on broad economic indicators and may overlook the subtleties of action by individual sectors of the economy or taxpayers, while the bottom-up approach uses data and performance indicators at the lowest level and can serve to target controls more precisely. At the same time, however, based on some data and results of tax controls, mainly on registered taxpayers, the bottom-up approach means that factors that are not easily observable are difficult to take into account. This, in turn, means that the whole part of the informal economy, tax avoidance and tax fraud, may not be covered, as opposed to a bottom-up approach (FTGPG, EC, 2016). This is because top-down methods only cover loopholes that are known and proven for tax authorities or areas that are suspected to be riskier.

The assessment of the tax gap, under both approaches, can be carried out in two main technical ways, called by the author 'from general to particular' (deductive) or 'from particular to general' (inductive) (see Figure 6).



Source: Author's illustration.

Figure 6. Tax gap assessment techniques

The 'general to particular' technique makes an overall assessment of the tax gap from a certain type of tax for the whole economy (all sectors/industries at a national level) and then breaks it down into individual sectors of the economy, if possible. These are theirs at CASE and, to some extent, at the IMF and the World Bank. In the case of the 'particular to general' technique, a more detailed assessment of the difference by individual sectors, industries, branches or other segments, followed by a summary of the total gap from a particular tax. In some cases, the gap from a certain type of tax may even be used as a basis for calculating another type of tax (e.g. the tax base, its components or the amount of the gap in customs duty and/or excise to be used to calculate the VAT gap or vice versa; the VAT gap to calculating the corporate tax gap; the gambling activity gap for calculating the corporate or personal taxes gap).

The tax gap in both methods and techniques ways can be measured under any assumptions about the size of the tax rates, according to the purpose of the study – standard, effective, unified, modified for the entire economy or sector, but also specific rates for a separate sector, industry, branch and activity.

To the extent that both the 'top-down' and 'bottom-up' approaches and the ways of applying the 'general-to-particular' (deduction) and 'particular-to-general' (induction) techniques lead to an estimate of the amount of the tax gap, the results of their application should be without significant differences when comparing the total gap. In this perspective, it should, wherever possible, be resourced and effectively justified in order to make the best picture of the gap to be applied collectively. What cannot succeed in one approach can be corrected by another.

4. International initiatives and statistics in the tax gap assessment in the world and in Bulgaria, as well as the results of a survey in Bulgaria

Globally, there are three broader initiatives to develop and explore issues related to the concept of the tax gap – the IMF, the OECD and the EC. Technical assistance initiatives directly or indirectly related to tax gap issues are also available from the World Bank and the Addis tax initiative (ATI, 2024). Issues of the tax gap can also be addressed by international associations of tax administrations, such as the CIAT, IOTA, the Tax Administration Diagnostic Assessment Tool (TADAT) and the summit forums of tax administrations in the EU (TADEUS) (TADEUS, 2024).

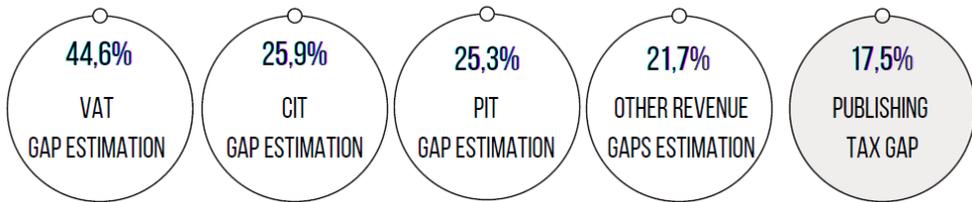
The IMF has established a Revenue Administration Gap Analysis Programme (RA-GAP) as a country capacity development service run by its fiscal departments since 2011. The program offers assistance with the assessment of VAT, CIT, PIT and excise duties. It can be argued that the IMF is the leading driver of the concept of the tax gap in the world.

The OECD has set up a 'Forum on Tax Administration' (FTA) to share knowledge, undertake research and develop new ideas to improve tax issues among members and other countries with "tax gap" and "shadow economy" interest groups.

The EC has set up a "FISCALIS" program under DG TAXUD, which has a 'Tax Gap Project Groups' (TGPG). Within this project group, subgroups on types of taxes and manifestations of gaps are formed – for VAT, including MTIC fraud and e-commerce, CIT and PIT/SSC. The EC, through CASE, has the initiative of a single measurement and comparison of the tax gap within the EU, with only VAT coverage, including the VAT MTIC gap. Some issues of the tax gap were addressed in the framework of the Risk Management Platform of the EC, which is currently suspended.

Practices in measuring tax gaps are summarized in documents produced for a broader (OECD, 2024; IMF, 2021) or closer comparison of tax administrations by international tax organisations and the EC (FTGPG, EC, 2016; 2018a; 2018b; EC, CASE, WIVO, 2024; Hutton, 2017; IMF, 2021; Thackray, Alexova, n.d.; Ueda Junji, 2018).

The study of practices with the widest geographical coverage for collecting data on tax administrations, including the tax gap, is the International Revenue Administration Survey (ISORA). This is a common product of the cooperation of the IMF, OECD, CIAT and IOTA. The most recent study, covering 2022, was published in 2024 and covers as many as 166 jurisdictions (ISORA, 2024).



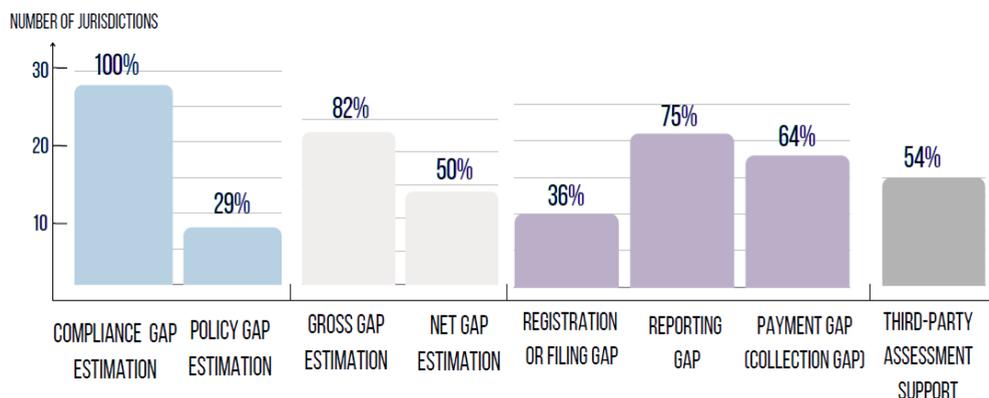
Source: Author's illustration.

Figure 7. Assessment of the tax gap under ISORA 2024 for 2022

The results of the latest ISORA survey show that 44.6%, or 74 countries, measure the tax compliance gap, the most common being the VAT gap measurement. The share of corporate income tax (CIT) measurement (25.9% or 43 units) and personal income tax (PIT) measurement (25.3% or 42 units) is approximately the same, and 21.7% of administrations report that they measure tax gap in other taxes as well. In Bulgaria, all types of gaps from the listed taxes are measured. Information on the tax gap is published by only 17.5% of jurisdictions, as Bulgaria is not among them, but the need for high publicity in the country is identified by over 79.8% of financial control experts,

and over 50% of them even consider that methodologies should be public, according to the results of a survey by the author (Yotov, 2025b).

The most detailed study on the practice of assessing the tax gap, both in terms of issues and geographical scope, was carried out in 2023 for the purposes of OECD. The same covers 58 countries, which are mostly highly developed, the EC and some other countries (OECD, 2024). Of these, only 28 countries have indicated that they assess the tax gap. Bulgaria does not fall under this survey, maybe because it was not yet a member of the FTA of OECD in 2023. The results of the OECD's tax gap survey are as follows:



Source: Author's illustration.

Figure 8. Assessment of the tax gap by type and component according to OECD for 2023

According to the results of the OECD survey, 28 out of 58 jurisdictions or 48% indicated that they produce periodic estimates of the tax gap for one or more major types of tax. Only 8 (30%), including Belgium, Brazil, Greece, Hungary, Indonesia, Romania and Switzerland, as well as the EC, assess the policy tax for some taxes; Bulgaria is not among them.

All countries measuring the tax gap focus on the compliance gap (100%) and, in particular, on the assessment of reporting (75%) and payments gap (64%), as they are major sources of the gap. Only 36% estimated a gap in registration or filing, but it should be borne in mind that in some methodologies, the filing gap is likely to be accounted for in the overall gap from declaring, and it is difficult to separate.

Most administrations estimate the gross tax gap (82% or 23 jurisdictions), and 50% measure the net tax gap. Nearly 40% of countries measure both types.

For as many as 15 of the 28, or 54% of countries, the gap assessment is carried out with the third-party support, most often the IMF, but also academia, external consultants and others. Among these countries are Australia, Belgium, Brazil, Canada, Chile, Denmark,

France, Indonesia, the USA and others. Although every second more developed country in the world assesses some types of shortages, this level still cannot be defined as satisfactory against the backdrop of growing popularity on the topic among tax authorities. In this regard, the practice in Bulgaria is limited to analyses of the tax gap, which are carried out independently by the NRA, with the exception of some analyses under technical assistance programs (e.g. by the IMF, the World Bank and an EC project) (see Erard, 2023; EY, EC, 2023). In addition, the results of the survey by the author show that control experts in Bulgaria consider that third parties should be more actively involved in such analyses (Yotov, 2025b).

The results of the OECD survey also show:



Source: Author's illustration.

Figure 9. Assessment of the tax gap by tax type and approaches according to OECD for 2023

The overall tax gap, made up of the main taxes, is estimated by only 39% or 11 of the 28 countries. All organisations evaluate the VAT gap, except for the USA, which does not have this type of tax at the national level, but has another tax on goods and services (GST). This is logical, given that this tax is assumed to bring the most revenue, but also the greatest risk to the budget in most countries. The PIT gap is estimated at 57% and the CIT gap at 50%. Only 8 countries, including Australia, Canada, Denmark, Greece, Italy, Sweden, the United Kingdom and the United States, and, after further research by the author and Bulgaria and Slovakia (Alexová, 2016), periodically assess the excise gap. Compliance gaps in other taxes and levies, such as wage taxes, social security contributions, property tax, inheritance tax and others, that exist in the relevant national system are estimated by 36% of administrations. No differences in the taxation of duties and gambling have been reported to have been investigated. Bulgaria also measures gaps in wages, social security contributions and some other national taxes.

The top-down approach (89% or 25 countries) is most commonly used and is seen as easier to implement by administrations just starting out. Slightly more than half of the countries use a bottom-up approach (57% or 16 countries), which is based on the results of control work by methodologies for random audit or risk-based audit, but also on other data. Some more advanced countries, such as Australia, Denmark, the United Kingdom and the United States, have even more than one type of methodology for the same type of tax. In Bulgaria, a top-down approach is regularly applied, and a bottom-up approach is reported to have been applied only under a World Bank technical assistance project to assess VAT gaps (Erard, 2023). The number of random audit methodologies (44) and risk-based audit methodologies (40) under a bottom-up approach developed and applied by countries, according to the OECD study, is almost the same.

From the information in the documents studied by the OECD, the IMF, the World Bank, the EC and individual countries, it can be concluded that most countries apply the 'general-to-particular' technique, which assesses the tax gap at a high level from a certain type of tax for the whole economy, followed by a sectoral breakdown. This is logical given that the technique is popularised and applied by them. It would also be a good practice to apply the 'private-to-general' technique, if it is possible, where the tax gap is assessed at a lower level – a separate economic sector, branch, activity – and then aggregated and compared to the total gap assessed via another approach.

ISORA, as well as published documents by the OECD, IMF and EC, lack a study on the familiarity with the concept of the tax gap, the significance of its measurement in general, both among the wider public of stakeholders and within the tax administration itself. The survey in Bulgaria, conducted by the author among experts, shows that 49.6% of respondents are theoretically familiar with some techniques for analysing and assessing tax gaps, and 18.5% are well-versed. The size of the tax gap, including the shadow economy, is determined as the most appropriate measure of the level of tax compliance. According to the same study, the most important thing in the compliance risk management process is the tax gap assessment. At the same time, however, almost 70% of them note that they are not familiar with the results of studies on the tax gap, logically because they are not promoted.

Conclusion

The assessment of the tax gap is a tool to study the level of compliance by taxpayers and reveal the potential for increasing revenue in the budget. It is the most comprehensive indicator of various problems related to tax collection. It gives a better idea of where and how non-compliance with tax obligations occurs. The measurement of the tax gap is an indicator of the efficiency of revenue administrations in collecting taxes, social security contributions and other levies. It is the basis for supporting and deciding on

tax policies, enforcement and control strategies, allocating resources in general, and improving transparency and accountability.

This publication attempts to systematise and complement the basic and most recent theory and practice of leading international tax organisations, national revenue administrations and researchers, as well as to provide insights related to the concept of the tax gap. The study provides greater clarity in the formation of a complex picture of the general framework, state and challenges in measuring the difference in taxation. It is claimed that this is one of the most in-depth studies on the subject of 'tax gap'. The same can serve as a good basis for a guide in the world of tax gap research.

As a result of the study, it can be summed up that addressing the issues of the tax gap is becoming an increasingly popular topic of discussion among revenue agencies and other stakeholders globally, with the prospect of continuing to do so. While administrations understand the nature of the tax gap more broadly, they define and include different components in their assessments. There are different methods, methodologies and techniques that do not lead to an international consensus on the most appropriate ones to be used in more countries and to provide a common methodological assessment framework and international comparison, despite diversity in tax systems. Although measuring the tax gap is not a new invention, a limited number of countries still measure the tax compliance gap, and only for certain types of taxes. The policy tax gap is hardly measured. In addition, only a few countries apply more than one method to assess the gap of the same type of tax. Few countries use the "bottom-up" method, and random auditing is used only by the most highly developed ones. The paper claims that the concept of 'positive tax gap' identified by the author as a private case, representing revenue collected in excess of the amount theoretically, is a gap for which there is currently a lack of practice and discussion in its measurement. Challenges are also highlighted in the publication of results data and methodologies to assess differences in taxation among the wider audience, as well as to increase the involvement of third parties outside revenue administrations, such as other government bodies, academic and industry experts, in the process of measuring the tax gap.

Future research on the topic may focus on the definition and study of the theory and practice of measuring the tax gap from a certain type of taxes and other levies that exist in the tax system of most jurisdictions, but for which there is no evidence that a literature overview has been made by international tax organisations, such as the gap in excise and customs duties. According to the article, only a few countries in the world are investigating the excise gap. The excise gap is the least frequent assessment as a type of tax and only for some types of excise goods (mainly cigarettes), even in the most advanced countries. It seems too early to discuss this topic of excise gap – a summary

of the practice, challenges and preparation of a common methodological framework for estimating the excise gap, because it is not yet planned in the OECD and EC tax gap groups. Undoubtedly, however, the evolution of the tax gap concept issue will lead to the topic of excise gap being brought to the table.

Conflicts of Interest

The author has no conflicts of interest to declare.

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GLOBAL FOREIGN DIRECT INVESTMENT AND ITS IMPACT ON BULGARIA

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Abstract: This paper analyses shifts in global Foreign Direct Investment (FDI) and their impact on Bulgaria, focusing on the period 2021-2024. The study combines secondary data analysis from sources such as UNCTAD, Eurostat and the Bulgarian National Statistical Institute with a SWOT framework to assess Bulgaria's position amidst evolving European and global FDI patterns. Global FDI declined sharply during the COVID-19 pandemic in 2020 but rebounded strongly in 2021, driven largely by increased investments in digital economy sectors and green energy. However, from 2022 onwards, FDI flows experienced instability and declines, particularly in developed countries, although digital and renewable energy investments continued to grow.

In Bulgaria, FDI inflows showed resilience and growth after the initial pandemic shock, with significant increases in 2022 and 2023. The country's investment attractiveness is enhanced by the growing IT sector investments, though challenges remain, such as bureaucratic inefficiencies, underdeveloped infrastructure, and a dependence on European markets. Bulgaria's integration into global value chains, especially in manufacturing and IT services, aligns with EU priorities in digitalisation and sustainability.

The study concludes that Bulgaria's FDI attractiveness depends on addressing institutional and infrastructure weaknesses, leveraging EU recovery funds effectively, and promoting high-tech to sustain long-term economic growth and competitiveness in a fluctuating global investment environment. Policy improvements in governance and strategic investment in innovation are necessary for Bulgaria to take advantage of emerging global FDI trends.

Keywords: foreign direct investment; global trends impact

JEL codes: F21; F23

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Introduction

The rapid evolution of the global economic landscape over the past few years has significantly impacted the patterns and volume of Foreign Direct Investment (FDI) worldwide. The COVID-19 pandemic caused unprecedented disruptions, leading to a sharp decline in global FDI flows in 2020, particularly affecting developed economies. However, a notable rebound occurred in 2021, driven by heightened investments in digital infrastructure and green energy sectors. Despite this recovery, the trend remains highly volatile, influenced by geopolitical tensions, policy changes, and the ongoing transformation of international supply chains. As the world gradually transitions toward digital and sustainable economies, understanding these shifting dynamics becomes imperative for emerging markets and small open economies like Bulgaria, which are influenced by these global trends.

In the European context, FDI flows experienced fluctuations driven by both internal EU policies, e.g. introduction of an investment screening mechanism, and external global factors. The European Union's emphasis on digital transformation, green transition, and economic recovery initiatives – such as the Next Generation EU funds – has created new opportunities for cross-border investments. Simultaneously, the global trend of nearshoring is reshaping the distribution of FDI within Europe, favouring Eastern European countries, including Bulgaria. Bulgaria's strategic geographical location, combined with its stability and competitive tax regime, positions it as an attractive destination for high-tech investments, especially in the digital and green sectors. However, challenges such as insufficient infrastructure and bureaucratic inefficiencies hinder the full realisation of its potential, necessitating targeted policy interventions to leverage emerging opportunities.

This article explores the global dynamics of FDI from 2021 to 2024 and makes some comparisons with trends over longer periods of time, with a particular focus on their implications for Bulgaria's investment landscape. The time period is selected based on the assumption that there is a shift in the FDI dynamics caused by three major geopolitical events: the breakout of the COVID-19 pandemic in 2020, the beginning of the war in Ukraine in 2021 and the new tariff measures implemented by the United States of America (USA) in 2025. If the new Framework Agreement on Reciprocal, Fair, and Balanced Trade between the European Union (EU) and the USA becomes a formal, legally binding document, it will have the potential to be the next key event with significant influence on global FDI. By examining the FDI shifting dynamics, the study assesses how Bulgaria's small, open economy can capitalise on the ongoing global and European investment trends. Analysing data from international organisations and national sources, the research highlights Bulgaria's resilience amidst worldwide decline, its evolving sectoral priorities, and strategic opportunities for long-term growth. The insights serve to inform

policymakers, investors, and academia about Bulgaria's positioning in the broader context of global FDI flows and the pathways for enhancing its competitiveness.

Methods

This study adopts a combination of statistical methods for descriptive analysis and SWOT analysis of Foreign Direct Investment (FDI) to outline their patterns in Europe and the impact on Bulgaria. The selected period ranges from 2021 to 2024, because it marks the beginning of a shift in global investment dynamics and the factors influencing investors' decisions. The research methodology incorporates both qualitative and quantitative techniques, combining secondary data analysis with a SWOT (Strengths, Weaknesses, Opportunities, and Threats) framework to assess Bulgaria's position in the evolving FDI landscape.

In order to ensure coherence and comparability of data, the study relies on a consistency of data sources that include: United Nations Conference on Trade and Development (UNCTAD), National Statistical Institute and Bulgarian National Bank data sets – adding the national perspective of FDI data. The selection of these sources ensures that the study is grounded in authoritative, globally recognised economic datasets.

The data is evaluated through two primary theoretical lenses: Dunning's OLI (Ownership-Location-Internalisation) paradigm, which posits that FDI is driven by firm-specific advantages, location factors, and internalisation benefits (Dunning, 1980) and Institutional Theory, highlighting the importance of regulatory quality, governance, and institutional trust in influencing FDI flows (North, 1990). These two frameworks collectively explain the location advantages of Bulgaria, but also help assess the institutional challenges the country faces in order to formulate policies to enhance location advantages, but also to reduce perceived regulatory risk.

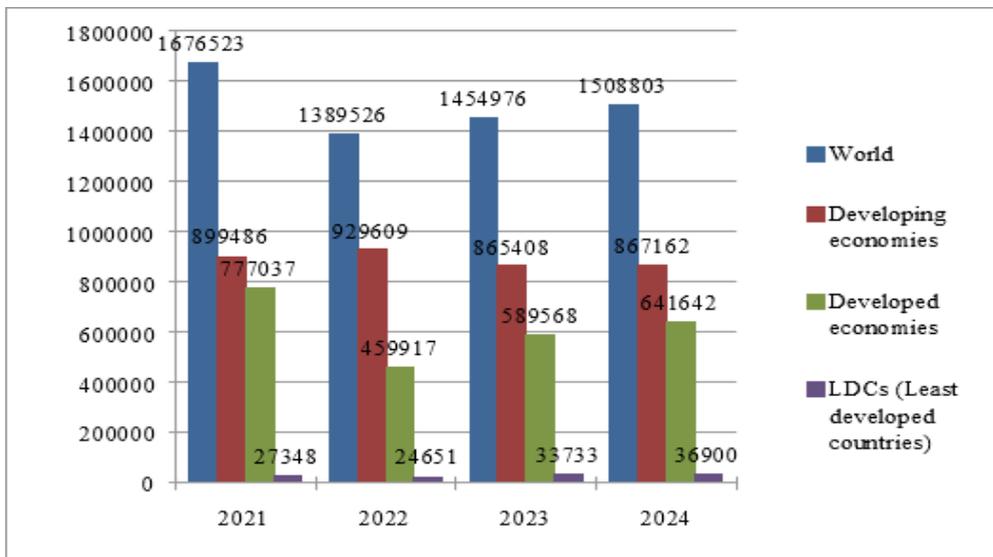
While the study offers a detailed evaluation of FDI, certain limitations must be acknowledged. FDI data often experience a time lag due to collection and reporting processes, which can affect real-time analysis. The unpredictable nature of economic policies and geopolitical events influences FDI trends beyond what historical data suggest. Despite these limitations, the methodological approach ensures a robust and data-driven analysis of FDI patterns and the implications for Bulgaria.

Results

Global and European FDI Trends in 2021–2024

UNCTAD data presented in Figure 1 below shows that in 2021, global FDI inflows almost doubled, reaching \$1,676,523 million compared to \$868,563 million in 2020, exceeding the pre-pandemic \$1,658,784 million in 2019. The major increase was in developed

countries, while the emerging economies recorded a weaker recovery. According to the same source, low financial flows and transactions in advanced economies are the main reason for the decline in global FDI inflows in 2022. The positive trend of increasing flows to developing countries continued for a second consecutive year, but this is insignificant and concentrated in a few large emerging economies, while inflows to smaller developing countries are stagnant, and in the least developed countries, even decrease. UNCTAD reports a small increase in global investment inflows in 2023, but it was a result of significant financial flows passing through a few European conduit economies. Similarly, in 2024, despite data showing a slight increase in global FDI inflows, this was again due to the influence of financial flows passing through several European conduit economies, which are often used as transfer centres for investment. This volatility of global inward FDI flows is a result of the influence of the three major events mentioned above and can be seen as confirmation of the growing importance of managing political and regulatory risks as factors considered in the investors’ decision-making process.



Source: UNCTAD Data Hub Statistics.

Figure 1. FDI inward flow in USD million, annual data 2021–2024

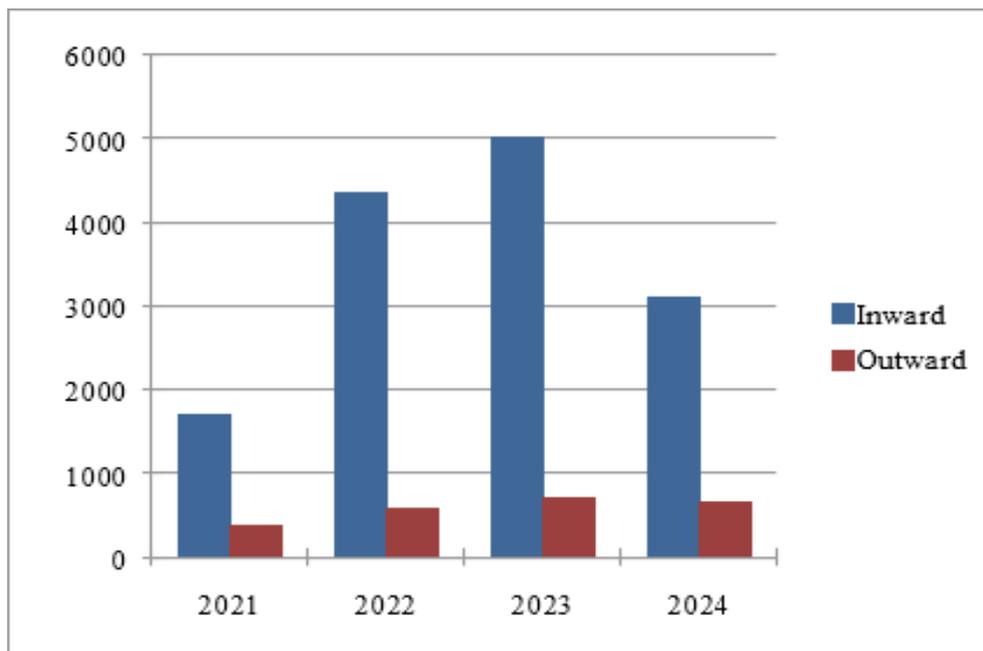
The sectoral dynamics of global FDI are changing, with investments in IT and digital services growing significantly (accounting for 25% of inward FDI in 2023 according to UNCTAD data), and Europe’s green transition attracting significant FDI in renewable energy projects (up 30% between 2021 and 2023 according to UNCTAD data). Focusing financial resources on green sectors can be defined as a growing trend in support of sustainability, but on the other hand, it reinforces the so-called “nearshoring” that, in

this case, means shortening the Global Value Chains (GVC) and FDI returning to developed countries, including to Europe, and thus widening the development gap.

FDI in Bulgaria 2021–2024

Figure 2 below visualises the dynamics of Bulgaria’s inward and outward FDI flow for 2021 – 2024. According to data, inward FDI flows to Bulgaria in 2021 fell sharply to \$1,698 million, one of the lowest levels in recent years. In 2022, FDI inflows rebounded, marking a growth of 55% compared to 2021 and reaching \$4,347 million. The growth continued in 2023, when FDI inflows were \$5,011 million, followed by a sharp decrease of more than 38% in 2024, when the inflow was \$3,090 million. The volatile investment inflows in the last four years reflect the global FDI shifts that still do not show signs of stabilising. These changes require targeted government policies on a national, regional, and EU level.

After the significant drop in 2020 to \$235 million, the outward FDI flows grew steadily in the next three years: from \$383 million in 2021, to \$585 million in 2022, and exceeding the pre-pandemic level and reaching \$700 million in 2023. In 2024, outward FDI flows fell to \$639 million. The increasing outward FDI flows hint at Bulgaria’s potential for international expansion.

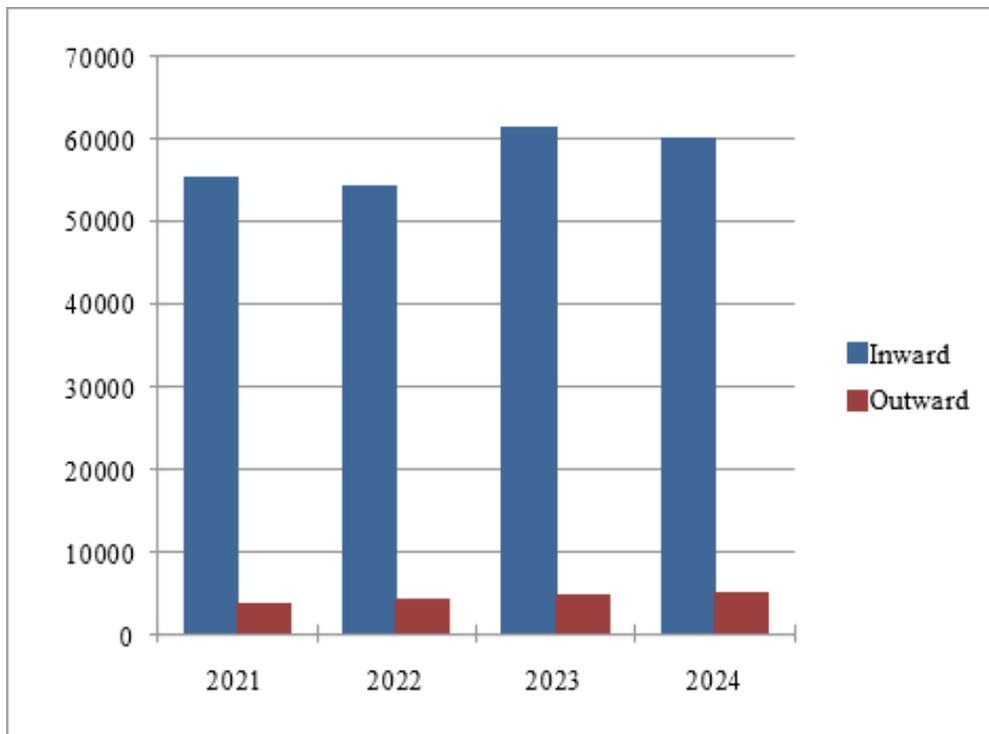


Source: UNCTAD Data Hub Statistics.

Figure 2. Bulgaria, FDI inward and outward flows, in USD million, annual data 2021–2024

Figure 3 presents the changes in the Bulgarian inward and outward FDI stock for the period 2021 – 2024. The inward FDI stock in Bulgaria at the end of 2021 amounted to \$55,144 million, then slightly decreased to \$54,179 million in 2022, and recorded significant growth (almost 8%) in 2023 when it reached \$61,282 million. There was a slight decrease in 2024 of 2.2% and the inward FDI stock stabilised at \$59,924 million. The total amount of outward FDI stock increased steadily from \$3,519 million in 2021 to \$4,040 million in 2022, \$4,689 million in 2023 and to \$4,924 million in 2024.

The volume and dynamics of inward FDI stock reflect Bulgaria's long-term investment competitiveness, defined by the World Bank as " ... ability of countries not only to attract, but also to retain and integrate private investment in their respective economies." (World Bank, 2017). Maintaining relatively stable levels of inward FDI stock in the economy is a sign of economic stability and a consistent investment environment that can attract long-term FDI.



Source: UNCTAD Data Hub Statistics.

Figure 3. Bulgaria, FDI inward and outward stock, in USD million, annual data 2021–2024

The dynamics of Bulgaria's overall investment attractiveness in the period 2014–2024 can be measured by the FDI (stock) to GDP ratio. It is interesting to note that in

terms of the levels and historical dynamics of the FDI stock to GDP indicator, Bulgaria shows similarities with Sweden. Bulgaria, like Sweden, maintains a relatively high investment attractiveness, which, however, has been declining in recent years. In 2021, this ratio is 65.3%, a sharp decline from 2020 when the percentage was much higher – 85.8%. This trend persists in the following years, when it is 59.7% for 2022, then slightly increases to 59.8% in 2023, followed by a drop to 53.4% in 2024. The high FDI/GDP ratio (over 50%) can lead to technological progress, as is evident from the growth of investment in Bulgaria in the ICT sector, where new jobs have been created, and productivity has increased (15% annual growth in FDI in this sector according to National Statistical Institute data). However, it can also be an indicator of increased dependence on foreign capital (and potential crises in the event of a sharp decline in FDI, as is currently observed), displacement of local firms from the market, or increased foreign control in key sectors.

Traditionally, the main investment partners for Bulgaria are the developed economies in the EU, with the Netherlands, Austria, Germany, and Italy leading the way (Bulgarian National Bank, 2025). Since joining the EU, Bulgaria has reorganised its production structure in line with European markets. The industrial sector – especially base metals, mechanical engineering and automotive components – dominates the country's participation in GVC. These industries are characterised by high dependence on foreign inputs and limited domestic value added, reflecting Bulgaria's role as a supplier of intermediate goods in regional production chains (Panusheff, 2022). Sectors such as information technology and business process outsourcing are emerging as growth drivers, although from a lower base than manufacturing.

According to the National Statistical Institute data (NSI, 2025), FDI flow in activities in the field of information technology and information services has doubled in size in recent years, supported by Bulgaria's skilled workforce and competitive production costs. This indicates a growing foreign interest in Bulgarian high-tech products and services, which also carry high added value. This trend has been observed since earlier, when medium-sized enterprises actively entered the ICT sector, and determined the long-term concentration of FDI in this sector (Hristova-Balkanska, 2016). However, innovation capacity remains limited, as suggested by Bulgaria's low ratio of Gross Domestic Spending on R&D (0,8% of GDP in 2023), well below the EU average of 2.1% for the same year (OECD, 2025).

Discussion

In Table 1 below, the results of the study are organised in a Strengths-Weaknesses-Opportunities-Threats Matrix (SWOT) to highlight Bulgaria's position in the context of the evolving FDI landscape and to rationalise recommendations for future policies.

Table 1. Bulgaria’s strengths, weaknesses, opportunities, and threats analysis

<p style="text-align: center;">Strengths:</p> <p>Stable macroeconomic framework and cost-effective business climate. Attractive FDI destination Dynamic IT sector with strong growth potential. Stable geographical distribution of FDI in Bulgaria, by the developed EU member states.</p>	<p style="text-align: center;">Weaknesses:</p> <p>Limited innovation capacity Bureaucratic and judicial inefficiencies. Relatively low quality of infrastructure related to transport and trade. Dependence on FDI from a limited number of EU countries High exposure to external shifts in FDI flows.</p>
<p style="text-align: center;">Opportunities:</p> <p>Rising global demand for IT and renewable energy solutions. EU recovery funds supporting digitalisation and green projects. Nearshoring FDI trends and shortening of GVC.</p>	<p style="text-align: center;">Threats:</p> <p>High volatility of global and European FDI flows. Growing importance of political and regulatory factors in investors’ decision-making. Risk of limited absorption of EU recovery and development funds.</p>

Bulgaria has traditionally maintained a high level of FDI as a percentage of GDP, indicating the interest of foreign investors in the country, as well as the degree of openness of the economy. The growth of FDI inflows in Bulgaria shows that the country maintains an image of an attractive investment destination in terms of macroeconomic stability and a cost-effective business climate.

According to the World Bank Logistic Performance Index, which measures the quality of trade and transport-related infrastructure (1 = low to 5 = high) shows that in 2022 Bulgaria scored 3.1, which is below the EU average of 3.6 (World Bank, 2025). Therefore, Bulgaria’s underdeveloped infrastructure can potentially hinder the long-term strategies of direct investors.

A study of the business climate in Bulgaria, conducted in 2019 among Swedish investors in Bulgaria, shows that despite measures taken to facilitate administrative procedures and reduce the administrative burden, 40% of the interviewed investors cite bureaucracy as the main problem, complemented by problems with the judicial system – 33%, and non-transparent legislative procedures – 23% (Business Sweden, 2019).

Recent reports underline a declining investment activity on a global scale (UNCTAD, 2025). This will affect the production capacity and infrastructure development in the countries attracting FDI, like Bulgaria. EU Member States are Bulgaria’s main trade and investment partners, and it is highly dependent on the development of European

economies, which also have problems with low growth. There is also a risk that Bulgaria will fail to implement effective policies and programs for economic recovery and thus miss the opportunity to make the most of the funds provided under EU financial mechanisms.

The trends of “bringing back” direct investments to Europe and shortening of the global value chains provide positive opportunities for Bulgaria, given its EU membership and the traditionally high presence of European investors in the country. The stability of the geographical distribution of FDI in Bulgaria, by the developed EU member states, indicates a high degree of integration of the Bulgarian economy into the European market and European value chains, providing opportunities for upgrading its position to higher added value levels.

The trend of growth of the IT industry worldwide provides additional opportunities for Bulgaria, as the country has a dynamically developing IT sector, which can support economic recovery by attracting foreign investment. The priorities of the EU’s economic recovery, such as digitalisation and environmental protection, can enable Bulgaria to direct European funds towards intelligent restructuring of the country’s economy towards higher added value tech production.

However, risks persist due to Bulgaria’s dependence on European FDI dynamics, limited innovation capacity, lack of high-quality infrastructure, and bureaucratic hurdles. Addressing these challenges requires policy interventions to strengthen institutional capacity and infrastructure.

Conclusion

Bulgaria’s geographical proximity to major European markets and improving transport infrastructure increase its logistical attractiveness for integration into the GVC. Digital transformation is advancing, with a growing share of high-tech manufacturing and IT services supported by the significant FDI flow to the Bulgarian IT sector.

Consistent economic policies, a predictable regulatory environment, and institutional capacity are becoming key factors for attracting FDI in recent years and are still ongoing challenges for Bulgaria. Streamlining administrative procedures and better governance are essential to improving the investment climate.

By addressing structural weaknesses and capitalising on emerging opportunities, Bulgaria can solidify its position as a competitive FDI destination, fostering long-term economic growth. To further enhance its attractiveness to foreign investors, Bulgaria should:

1. Strengthen innovation capacity – invest in scientific and technical infrastructure to attract high-tech FDI. Develop a closer collaboration with multinational corporations to

drive innovation and R&D.

2. Further development of trade and transport-related infrastructure.
3. Streamline bureaucracy – improve transparency and simplify administrative procedures to improve the business climate.
4. Leverage EU funds – prioritise investments in IT and renewable energy.
5. Promote Bulgaria as a tech hub – strengthen incentives for IT and digital services FDI.

Conflicts of Interest

The author has no conflicts of interest to declare.

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US TARIFF CHANGES AND BULGARIA'S PRESENCE IN GLOBAL VALUE CHAINS

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With the introduction of new tariffs and restrictions in international trade, global value chains are undergoing a transformation. Traditionally, small and open economies such as Bulgaria's are actively involved in these chains, which tie their economic dynamics to their survival. The introduction of new tariffs on goods imported into the United States has led to an escalation of reciprocal actions and an expansion of the scope of customs restrictions in mutual trade. All this requires consideration of the impact on the functioning and future of value chains and, more generally, on trade in intermediate goods. While the broader EU–US trade framework provides the context, the analysis focuses primarily on Bulgaria's role as a small open economy integrated into European GVCs.

This article proposes a new methodology for assessing the effects of the introduction of tariffs on trade in intermediate goods. It develops the concept of indirect exports and evaluates the effect of the new US tariffs on indirect exports of Bulgarian goods that are processed and then exported to the US. The methodology is based on an analysis of export-significant commodity items and assesses the exports of goods with Bulgarian content from Bulgaria's largest trading partners. Conclusions are drawn about the impact of the new US tariffs on participation in value chains.

The results show that the indirect effects range between a reduction of 1.79% of Bulgaria's total goods exports and 0.74% of GDP, using the average-value approach, and a decrease of 0.49% of total exports and 0.20% of GDP under refined commodity-level assessment. These moderate losses place Bulgaria among the EU countries with relatively lower adverse effects compared to more highly exposed economies.

Keywords: global value chains; import intensity; international trade; tariffs

JEL codes: F14; F17; C53

THE ICT SECTOR IN BULGARIA: CURRENT STATE OF AFFAIRS INNOVATION CAPACITY AND CHALLENGES

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The article examines the development of the information and communication technologies sector in Bulgaria within the context of the global digital economy, combining theoretical perspectives, empirical data, and case studies of leading applied research institutes. Key indicators such as the sector's contribution to GDP, employment, revenue, and indexes like DESI and WDCI are presented. Particular attention is given to the role of the INSAIT and GATE institutes as catalysts of innovation through the "triple helix" model. Their contribution to attracting investments, fostering human capital, and establishing strategic partnerships is analysed in depth. The article also incorporates findings from semi-structured interviews with stakeholders, which highlight the challenges facing digital transformation in Bulgaria. Based on this analysis, specific recommendations are formulated for strengthening cooperation between academia, industry, and the public sector in order to promote sustainable development and enhance Bulgaria's international competitiveness.

Keywords: ICT sector; innovation; triple helix; INSAIT; GATE

JEL codes: O31; O32; L86

OBESITY IN BULGARIA: ECONOMIC DETERMINANTS, INTERGENERATIONAL DYNAMICS, AND POLICY IMPLICATIONS

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The research examines obesity in Bulgaria as both a public health concern and a structural economic challenge shaped by intergenerational dynamics and institutional transformations. A fixed-effects panel data model was applied to 33 European countries (2006–2022) to test two hypotheses: that childhood overweight is a predictor of adult obesity, and that a high absolute number of obese individuals sustains the phenomenon through normalisation effects. The findings confirm a strong positive association between early-age overweight and obesity in adulthood, while the role of absolute numbers appears more complex, reflecting demographic and structural influences. Bulgaria is identified as an "ascending-risk" case, positioned between high-income and upper-middle-income economies, where deregulated food environments and

demographic decline are both amplifying health inequalities. The study argues that obesity should be addressed not primarily through medical treatment but through preventive strategies, including early childhood interventions, nutrition programs, and cross-sectoral coordination. Despite limitations related to age-disaggregated data and sample size, the research provides solid evidence that obesity is an economic issue with long-term consequences for human capital and sustainable development.

Keywords: Bulgaria; obesity; childhood overweight; fixed-effects model; health economics

JEL codes: C33; I18; I12

ECO-INNOVATION AND COMPETITIVE SUSTAINABILITY IN THE EU-27: A CROSS-SECTIONAL BENCHMARK (2024)

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The purpose of the study is to benchmark the association between the Eco-Innovation Index and the Competitive Sustainability Index (CSI) across the EU-27 in 2024. The study used official 2024 scores and Spearman rank correlations on a cross-sectional dataset. This 2024 study of the EU-27 found a strong positive correlation between the Eco-Innovation Index and the overall Competitive Sustainability Index ($\rho = 0.866$), indicating that higher eco-innovation performance is associated with greater competitive sustainability, though the strength of the association varied across CSI pillars. The study is limited to descriptive associations but provides crucial data for EU benchmarking and generating hypotheses for multi-year analyses on the relationship between eco-innovation and competitive sustainability.

Keywords: eco-innovation; competitive sustainability; EU-27; cross-sectional benchmark (2024)

JEL codes: C80; O30; O49; O57; Q56

THE EURO, FINANCIAL LITERACY AND THE EXPERIENCE OF OTHER COUNTRIES: A COMPARATIVE ANALYSIS

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The article analyses the pivotal role that financial literacy will play in Bulgaria's forthcoming adoption of the euro, portraying the transition as a fundamental transformation that entails significant opportunities alongside systemic risks. Empirical evidence reveals a capability gap that could deepen market inefficiencies, stimulate price speculation and fuel public discontent.

The study identifies the economic and social imperatives of literacy: facilitating price comparisons, protecting consumers from fraud and strengthening trust in the monetary changeover. A multi-layered national strategy is advocated, combining (1) systematic financial education at every scholastic tier; (2) large-scale informal programs for vulnerable adults; (3) digital calculators and mobile applications; (4) communication campaigns adapted to demographic specifics; and (5) coordination among government, the Bulgarian National Bank, business and NGOs.

Comparative scrutiny of Estonia's, Lithuania's and Croatia's changeovers isolates proven instruments: mandatory dual price display, business ethics codes, free cash exchange and mobile information teams. Evidence from these cases shows that the mix of preventive inspections, public disclosure of violators and fines limits the one-off inflationary effect while bolstering public confidence. Enhanced literacy, in turn, reinforces economic integration through lower transaction costs, greater investment appeal and stabilised inflation expectations. The article concludes by urging Bulgaria to adopt an urgent communication strategy with measurable milestones ($\geq 80\%$ awareness, $\geq 60\%$ support), to intensify price oversight and to frame euro adoption as an "inter-sectoral social contract" requiring strategic managerial resolve.

Keywords: financial literacy; euro introduction; Bulgaria; economic integration; communication strategies; financial education; Estonia; Lithuania; consumer protection; public project

JEL codes: F36; E42; I22; D14; H12

INSTITUTIONALIST CLUES IN CELSO FURTADO'S ECONOMIC THOUGHT: A BRIDGE BETWEEN OLD INSTITUTIONALISM AND LATIN AMERICAN STRUCTURALISM

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This paper examines the intersection between Celso Furtado's economic thought and Old Institutional Economics (OIE), a connection largely overlooked in the literature. Although best known as a leading figure of Latin American structuralism, Furtado's work incorporates key institutionalist principles, notably the centrality of institutions, historical path dependence, and the role of power in development. His approach converges with OIE in its critique of neoclassical equilibrium models, emphasis on cumulative causation, and evolutionary view of economic systems. Furtado's analysis of social heterogeneity, institutional constraints, and cultural factors further resonates with institutionalist frameworks. By combining historical analysis, interdisciplinarity, and an active role for the state, his work bridges structuralism and institutionalism, offering valuable insights for contemporary development theory. Recognising these connections enriches both traditions and advances the debate on the institutional foundations of economic development.

Keywords: Latin American structuralism; Celso Furtado; Old Institutional Economics

JEL codes: B20; B25; B52; O17

THE CONCEPT OF TAX GAP: ESSENCE, DEFINITION, TYPES, COMPONENTS, METHODS, INTERNATIONAL PRACTICES AND CHALLENGES IN ITS MEASUREMENT

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The tax gap, also referred to as a tax 'difference', 'mismatch', 'emptiness', 'omission', 'hole', 'deficit', 'shortage', 'loss' or 'damage', represents the amount of tax revenue lost or foregone. It is the difference between potential and actual revenue collected. More specifically, it is the difference between the amount of tax that could theoretically be collected if all taxpayers fulfilled their tax obligations by voluntarily submitting complete and accurate tax returns and paying the taxes due, compared to the current, or hypothetically most extensive, tax legislation and the amount of actual collected tax over a specific period. This article provides a literary overview of the 'tax gap' concept and issues related to it, as well as theoretical and practical insights related to its nature, components, and methods and practices used for measurement in some advanced countries and in Bulgaria. Statistical data is also presented alongside results from a survey conducted in December 2024 and January 2025 among experts in the field of financial control in Bulgaria working at the National Revenue Agency (NRA) and the Customs Agency, as well as university lecturers in finance and accounting. The author's insights are intended for experts from revenue organisations and can also be useful to scientific and business analysts more broadly.

Keywords: tax gap; compliance gap; tax gap analysis; positive tax gap; shadow economy tax gap

JEL codes: H25; H26; E26

GLOBAL FOREIGN DIRECT INVESTMENTS AND ITS IMPACT ON BULGARIA

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This paper analyses shifts in global Foreign Direct Investment (FDI) and their impact on Bulgaria, focusing on the period 2021-2024. The study combines secondary data analysis from sources such as UNCTAD, Eurostat, and the Bulgarian National Statistical Institute with a SWOT framework to assess Bulgaria's position amidst evolving European and global FDI patterns. Global FDI declined sharply during the COVID-19 pandemic in 2020 but rebounded strongly in 2021, driven largely by increased investments in digital economy sectors and green energy. However, from 2022 onwards, FDI flows experienced instability and declines, particularly in developed countries, though digital and renewable energy investments continued to grow.

In Bulgaria, FDI inflows showed resilience and growth after the initial pandemic shock, with significant increases in 2022 and 2023. The country's investment attractiveness is enhanced by the growing IT sector investments, though challenges remain, such as bureaucratic inefficiencies, underdeveloped infrastructure, and a dependence on European markets. Bulgaria's integration into global value chains, especially in manufacturing and IT services, aligns with EU priorities in digitalisation and sustainability.

The study concludes that Bulgaria's FDI attractiveness depends on addressing institutional and infrastructure weaknesses, leveraging EU recovery funds effectively, and promoting high-tech to sustain long-term economic growth and competitiveness in a fluctuating global investment environment. Policy improvements in governance and strategic investment in innovation are necessary for Bulgaria to capitalise on emerging global FDI trends.

Keywords: foreign direct investment; global trends impact

JEL codes: F21; F23

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