Article

Advances in Economic Development through Control of the Underground Economy

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Abstract: In an era of ongoing global development and increasing focus on sustainability, the underground economy persistently identifies novel areas for expansion. This dynamic growth compels states to engage in an ongoing search for effective strategies to regulate and mitigate its effects, while simultaneously addressing the broader implications for economic development. Poverty, financial development, income inequality, and legal framework are analyzed in this paper in relation to the underground economy for the European Union member states between 2004 and 2022 by way of a panel model. Our findings reveal a positive relationship between the levels of poverty among individuals and the underground economy. Conversely, the interplay between the underground economy and both financial development and the legal framework exhibits a detrimental effect. In conclusion, our analysis reveals that the three primary variables examined—poverty, financial development, and legal framework—substantially influence the scale of the underground economy, with important implications for overall economic development and sustainable growth.

Keywords: informal economy; economic development; poverty; financial development; legal framework; panel regression

1. Introduction

This study explores how socio-economic factors—such as poverty levels, legal frameworks, income inequality, and financial development—impact the scale of the underground economy and its implications for economic development. Additionally, it examines whether these factors can be effectively utilized as strategies to reduce underground economic activities. For this analysis, we have chosen one economic factor (the financial development), one governance-related variable (the legal framework), and two socio-economic indicators (poverty levels and the Gini coefficient) to provide a thorough evaluation of how social conditions and living standards impact the prevalence of underground economic sectors.

The significance of this study is represented by its practical implications for both individuals and governmental entities in understanding the underlying factors that contribute to the expansion of the underground economy, while also highlighting the potential challenges it poses for sustainable economic practices. Additionally, it highlights the critical aspects that require enhancement to mitigate the growth of informal economic activities. By identifying these factors and potential improvements, the study aims to provide valuable insights for policies aimed at formalizing economic activities, thereby facilitating a reduction in the size of the underground economy over the long term and promoting more sustainable economic practices.

2. Literature Review

In a rapidly changing global landscape, the underground economy persistently discovers new areas and opportunities for growth, necessitating that governments continually

search for effective and sustainable strategies to address and reduce its effects. Although the informal economy lacks a uniform definition across the literature reviewed for this study, it primarily encompasses both legal and illegal activities that are not reported and, therefore, are not taxed by governments. The unpredictable nature of the underground economy poses significant challenges for states, which must implement up-to-date and sustainable policies aimed at combating it.

The objectives of this scientific paper are primarily to explore and analyze in detail the relationship between the informal economy and a series of determining factors, chosen based on a review of relevant literature, in order to understand how different variables influence the size and dynamics of the underground economy. The main goal is to identify and assess the effects of these determinants on the informal economy, whether in terms of growth or contraction, and subsequently to draw conclusions that can be applied by states in their policy work. Below, we will present the relevant literature and outline the starting points for formulating the hypotheses that underpin this study.

The underground economy sector has been addressed in the literature under various terms, including informal economy, shadow economy, underground economy, parallel economy, and hidden economy. Despite the different terminologies, all refer to the same domain of informal activities within an economy. In the literature, the phenomenon is most commonly referred to as either "underground economy", "informal economy" or "shadow economy" and these terms will be used throughout this paper.

Various methodologies have been employed to evaluate the size of the underground economy. For example, Hassan and Schneider (2016) [1] applied the Cointegration Vector Autoregressive (CVAR) approach, whereas Medina and Schneider (2019) [2] and Medina and Asllani (2022, 2023) [3,4] quantified the underground economy using the Multiple Indicators Multiple Causes (MIMIC) macroeconomic model. These methodologies were thoroughly examined in the present study. Additionally, the most comprehensive dataset available for the underground economy, which has been utilized in studies by authors such as Jacolin et al. (2019) [5] and Gaspareniene et al. (2016) [6], is that provided by Medina and Schneider (2019) [2] and Medina and Asllani (2022, 2023) [3,4].

In their research, Popescu et al. (2018) [7] highlight that sustainable development initiatives have largely concentrated on the formal sector, neglecting the possible contributions of the informal sector. On the same line, Kotlan et al. (2021) [8] examine the influence of corruption on both formal and informal economies, using the Czech Republic as a case study. Their research reveals that in the official economy, corruption may boost production when environmental taxes are absent, as increased workforce motivation outweighs the negative impact on capital accumulation. However, in sectors burdened by environmental taxes, corruption has a detrimental effect on production, posing challenges to sustainability initiatives such as the European Green Deal (Policy initiative by the European Union aimed at addressing climate change and environmental degradation).

Similarly, Hoinaru et al. (2020) [9] argue that corruption and shadow economy are often driven by poverty, particularly in low-income countries, where both phenomena are closely associated with lower levels of economic growth and hinder progress toward sustainable development. Poverty stands as one of the most pressing global challenges. Berdiev et al. (2020) [10] demonstrate that poverty exerts a positive and significant impact on the size of the shadow economy, particularly under conditions where government quality is low, and the size of the government is large. Similarly, Pham (2022) [11] identifies a causal relationship between poverty and informality in developing countries, but notes that this relationship is critically dependent on the level of economic development within each country.

There are also researchers who investigate how the underground economy may function as a potential pathway for individuals in poverty to enhance their economic situations. William (2013) [12] investigates the nexus between the informal economy and poverty with the objective of determining whether participation in the informal economy assists individuals in escaping poverty. The author concludes that the informal economy can

be integrated into anti-poverty strategies to more effectively address its impacts. Bonnet and Sudhir (2016) [13] explore mediation, dispute resolution, and regulation in informal economic transactions, focusing on how the informal economy impacts the poor, while Obayelu and Larry (2007) [14] establish a causal relationship between poverty and the underground economy, particularly in developing and transition countries where high unemployment and corruption rates influence both factors.

Ridwan et al. (2024) [15] reveal a nuanced relationship between financial development and the shadow economy across African countries. Their findings indicate that in low-income nations, measures related to financial institutions are likely to exacerbate the shadow economy. Conversely, in lower–middle-income countries, indicators of financial market growth are associated with a rise in the shadow economy. This anticipated variability in the financial development–shadow economy nexus is expected to differ among countries based on income levels (high, middle, and low), owing to the documented disparities in financial development across different regions and income categories (Nili and Rastad, 2007 [16]; Barajas et al., 2013 [17], Nguyen and Su Dinh, 2020 [18]).

In the context of the legal framework or rule of law as a governance indicator, it is frequently identified as a significant factor contributing to the existence and size of the underground economy by scholars such as Medina and Schneider (2018) [19] and by reports from the International Monetary Fund (2021) [20]. Specifically, countries that are characterized by relatively lower tax rates, a more streamlined and less restrictive set of legislative and regulatory measures, along with a legal system that is both robust and firmly established, are generally observed to have smaller shadow economies. This relationship is supported by research conducted by Haggard and Tiede (2011) [21], which underscores that a well-functioning legal framework tends to mitigate the expansion of informal economic activities.

Several authors (Rosser et al., 2000 [22], Rosser et al., 2003 [23], Ajayi et al., 2022 [24]) have claimed that there is a positive relationship between income inequality and the size of the underground economy. Pagliari and Odoardi (2011) [25] assert that policymakers must consider income inequality for a multitude of reasons, as they have the potential to influence the determinants of sustainable and long-term economic growth and development. In the context of implementing reforms, such as those related to fiscal federalism, it is imperative to account for a range of factors that will be affected within a complex and heterogeneous system, such as that of Italy. Schneider and Enste (2002) [26] find that nations characterized by comparatively lower tax rates, a reduced volume of legislative and regulatory constraints, and a robustly established rule of law generally exhibit smaller shadow economies. Similarly, Alfoul et al. (2022) [27] suggest that the quality of institutions is the most significant factor influencing the size of the shadow economy. In their study, which analyzed a cross-sectional sample of 132 countries, they also identified inflation and poverty as key drivers contributing to the expansion of the shadow economy.

States often face significant corruption, widening income disparities, and weak institutional frameworks, all of which contribute to the expansion of sizable underground economies (Sasha et al., 2021 [28]). Esaku (2021) [29] highlights that increasing income inequality has serious policy implications for macroeconomic stability and growth, as it centralizes decision-making and political power within a small group of individuals who possess the resources to influence the country's political decisions.

In the current section of the paper, scientific literature addressing the determinants of the underground economy, various indicators such as poverty, financial development, and the legal framework are examined individually; however, these factors have not been studied in an integrated manner where all are considered together, so that the impact of a framework in which all these indicators may influence the level of the underground economy can be systematically analyzed and evaluated. This study makes a novel contribution by simultaneously analyzing these factors, exploring their potential interrelationships, and assessing how their combined effects might influence the magnitude of the underground economy. Additionally, a noteworthy contribution of this study is that, to the best of our

knowledge, the indicator PeoplePov (as defined below) has not been previously included in research assessing its impact on the underground economy.

3. Materials and Methods

To begin with, considering the specialized literature previously presented and to introduce a novel aspect to this study, the authors have selected the following variables: PeoplePov to provide insight into the poverty level of a country, the Gini coefficient to measure income inequality, FDI to reflect financial development, and LegFramework to assess the quality of the legal framework (for a detailed description of the indicators, please refer to Table 1 below). Although these sectors have been analyzed by other researchers, our study distinguishes itself by examining these variables in conjunction with the underground economy, utilizing indicators that have not previously been included together in a model of this nature for the targeted time period and countries.

Table 1. What are the variables considered?

Indicator	Meaning	Unit of Measure	Source
Dependent variable			
Underground Economy (UndEco)	It denotes the parallel economy, which includes the production and provision of goods and services that are not reported to the appropriate authorities. It covers activities such as underground operations, informal household labor, and tax evasion.	% of GDP	Medina and Schneider (2019) [2] Medina and Asllani (2022, 2023) [3,4]
Independent variables			
Gini coefficient (Gini) [1]	The Gini coefficient measures the relationship between the cumulative shares of the population, ranked by equivalized disposable income, and the cumulative share of equivalized total disposable income they receive.	Scale from 0 to 100	European Commission (Eurostat)
Persons at risk of monetary poverty after social transfers (PeoplePov) [2]	Individuals at risk of monetary poverty after social transfers are those whose equivalized disposable income falls below the poverty threshold, defined as 60% of the national median equivalized disposable income after social transfers.	% of population	European Commission (Eurostat)
Financial Development Index (FDI) [3]	The relative positioning of countries with respect to the extent of the depth, level of accessibility, and degree of operational efficiency exhibited by their financial institutions and markets, as assessed through a comprehensive evaluation of these critical financial dimensions.	Scale from 0 to 1	International Monetary Fund
Legal Framework Index (LegFrameworkI) [4]	It is one of the Worldwide Governance Indicators (also called rule of law) and it reflects the perceptions of the extent to which individuals have confidence in and abide by the rules of society, and, in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Scale from 0 to 1	World Bank
Independent variables (control)			
GDP per capita (GDPC) [5]	It reflects the aggregate of the gross value added by all domestic producers within the economy, augmented by any product taxes, minus any subsidies not accounted for in the valuation of output, and then divided by the mid-year population.	Dollars	World Bank
General Debt (GenDebt) [6]	The index reflects the percentage of general government debt compared to the gross domestic product at the end of the year.	% of GDP	European Commission (Eurostat)

Source: own processing based on the sources mentioned above.
[1] https://ec.europa.eu/eurostat/databrowser/view/tessi190/default/table, accessed on 26 July 2024;
[2] https://ec.europa.eu/eurostat/databrowser/view/sdg_01_20/default/table, accessed on 26 July 2024;
[3] https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B, accessed on 26 July 2024;
[4] https://databank.worldbank.org/databases/rule-of-law, accessed on 24 July 2024;
[5] https://data.worldbank.org/indicator/NY.GDP.PCAP.CD, accessed on 23 May 2024;
[6] https://ec.europa.eu/eurostat/databrowser/view/teina225/default/table, accessed on 10 November 2023.

Drawing on the theoretical perspectives outlined in Section 2, our investigation was initiated with a framework of working hypotheses informed by both the authors' expectations and the conclusions of the literature review (Berdiev et al., 2020 [10], Ridwan et al., 2024 [15]; Pagliari and Odoardi, 2011 [25]). We will provide a thorough examination of the evidence supporting or challenging the following hypotheses as the study progresses:

H1: *The underground economy is directly related to the poverty of people.*

H2: *The underground economy is indirectly related to financial development.*

H3: *The underground economy is indirectly related to the legal framework.*

H4: *The underground economy is directly related to the Gini coefficient.*

The informal economy constitutes a substantial and significant segment of the global economy. There is no single definition, as it varies depending on the context. In this study, the term "underground economy" has been employed according to the data processed by Medina and Schneider (2018, 2022) [2,19] and Medina and Asllani (2022, 2023) [3,4].

In Figure A1 (Size of the Informal Economy, EU-27, 2022) as attached in Appendix D, the levels of the underground economy for the year 2022 are presented in descending order based on the extent of underground economy recorded by the analyzed countries.

In 2022, Romania (19% of GDP), Bulgaria (33.1% of GDP), and Croatia (29.7% of GDP) were among the countries with the highest levels of the underground economy within the EU. Bulgaria, in particular, exhibited the highest percentage of informal economic activity among the analyzed countries. Conversely, Austria (6.6% of GDP), the Netherlands (8.2% of GDP), and Luxembourg (8.3 of GDP%) reported significantly lower levels of the underground economy. This stark contrast highlights the varying degrees of informality within the EU.

A definition of the variable used to quantify the underground economy is provided in Table 1 below, together with a description of all the variables utilized for this analysis (symbol, meaning, unit of measure; data source).

In our study, we used a wide range of data over the period 2004–2022 for the 27 EU Member States. We anticipated that the volume of observations, i.e., 433 (the number of observations is generated by Eviews 11, adjusted accordingly after data processing, and pertains to the baseline equation executed using the OLS method), would enable us to either substantiate or disprove, depending on the findings, the hypotheses posited in the preceding discussion.

Drawing from our research and taking into account all the previously presented information, we derived the following equation:

$$\text{UndEco} = \text{PeoplePov} + \text{FDI} + \text{LegFramework} + \text{d(Gini)} + \log(\text{GDPC})/\text{GenDeb*} + c \tag{1}$$

where UndEco is the dependent variable; FDI, PeoplePov, LegFramework and Gini are the independent variables; and log(GDPC)/GenDeb are the control variables.

* The variable log(GDPC) serves as the primary control variable, while GenDeb is the secondary control variable, utilized through the Robust Least Squares test.

Our choice is supported by several reasons. First, panel regression models leverage both cross-sectional and time series data, which enhances the degrees of freedom and increases sample variability. This dual-dimensional approach improves the efficiency of econometric estimates by incorporating information on the dynamic behavior of numerous entities simultaneously (Brooks, 2008 [30]), leading to more precise inference of model parameters (Hsiao, 2007 [31]). Second, panel data help address the issue of omitted variables (Brooks, 2008 [30]). By analyzing multiple observations of the same entities over time, one can control for unobserved or challenging-to-measure characteristics that correlate with the explanatory variables (Ramirez-Rondan and Terrones, 2021 [32]). Specifically, panel data

facilitate causal inference in situations where causality would be difficult to establish with only a single cross-sectional dataset (Wooldridge, 2013) [33]. Additionally, panel regression models can mitigate multicollinearity issues that may arise if time series data were analyzed individually (Brooks, 2008) [30].

The estimation of the panel data was performed using the OLS method (LS—Least Squares (LS and AR)). To address the presence of fixed and random effects, adjustments were made using the Redundant Fixed Effects–Likelihood Ratio test and the Correlated Random Effects–Hausman test. These statistical tests are used for determining the appropriateness of the model specifications in capturing the underlying data structure. The results from both the Hausman test and the Likelihood Ratio test revealed that the *p*-values obtained are below the 5% significance level (Hausman Test Chi-Sq. Statistic = 57.507925 (prob = 0.0000) and Redundant Fixed Effects–Likelihood Ratio Statistic Chi-Sq. Statistic = 1027.665805 (prob = 0.0000).). This finding suggests that the inclusion of both random and fixed effects in the model is not necessary for this analysis. Consequently, the impact of these effects can be considered negligible in the context of this study.

The model under analysis is valid (F-statistic = 77.0195 and Prob(F-statistic) = 0.0000%). Also, the indicator R^2 has a value of 76.4361%, which means that the variation in the underground economy is influenced by the independent variables included in the model in a proportion of approximately 76%. The improved version of R^2 (adjusted R^2), which considers the amount of independent indicators included in this regression, is 76.1602%. Specifically, if new independent variables are included in the equation and they manifest no relevance or low relevance to the shadow economy, this effect will be penalized through adjusted R^2.

Regarding the robustness check, our analysis incorporated general debt as an additional control variable and we used the Robust Least Squares method for this purpose. This approach was implemented to assess the sensitivity of the model's estimates to deviations from the underlying assumptions. The application of robustness techniques, in conjunction with substituting an alternative control variable, suggests that the estimated coefficients from the initial model remain consistent with the original statistical relationships. Thus, the robustness checks affirm that the primary estimates accurately reflect the relationships posited by the initial model. The data obtained are presented in Table A1 of Appendix A.

All variables were subjected to unit root testing and assessed for significant correlations, utilizing the panel unit root test under the assumption of cross-sectional independence (the results obtained regarding the unit root testing of the variables are presented in Table A2 of Appendix B). Since the Gini coefficient series was non-stationary, adjustments were necessary for the Gini coefficient series (differencing at level 1). Regarding the correlation of the variables, according to the correlation matrix, it mostly indicates a weak to high correlation between the independent variables, ranging between −0.29 and 0.87 (the results obtained regarding the correlation of the variables are presented in Table A3 of Appendix C). As a result, they furnish a detailed and extensive evaluation from a range of multifaceted perspectives, thereby significantly enhancing the robustness and depth of our analytical framework.

Following the comprehensive series of steps and modeling procedures detailed in the preceding section, the outcomes of the analysis are systematically presented in Table 2 below. This table encapsulates the results derived from the various analytical techniques and methodologies employed throughout the study, reflecting the rigorous process of data evaluation and model estimation that has been conducted.

Table 2. Estimation of the equation results (using LS—Least Squares (LS and AR)).

	C	PeoplePov	FDI	LegFramework	Gini
Coefficient	110.1123	0.558673	−8.193187	−0.657893	−0.014051
Std. Error	5.382545	0.047979	1.109692	0.291182	0.139916
t-Statistic	20.45737	11.64413	−7.383300	−2.259385	−0.100424

Table 2. *Cont.*

	C	PeoplePov	FDI	LegFramework	Gini
Prob.	0.0000	0.0000	0.0000	0.0244	0.9201
R-squared	0.764361				
Adjusted R-squared	0.761602				
F-statistic	277.0195				
Prob(F-statistic)	0.00000				

Source: own processing.

4. Results

For the analyzed variables, significance is related to a significance threshold of 5%. The only variable that is not statistically significant is the Gini coefficient in the form that captures an overall picture of the countries regarding their level of poverty, financial development and quality of the legal framework. Although our hypothesis is neither confirmed nor refuted, we still consider the Gini coefficient to be a relevant indicator for the shadow economy. Future studies on the inclusion of this factor in other frameworks should be considered. Income inequality can influence individuals to act either within the formal or informal economy, so in our view, this remains an open topic for future research.

The analysis reveals a significant direct relationship between individuals at risk of monetary poverty following social transfers and the level of the underground economy, as evidenced by a coefficient of 0.558673 with a prob-value of 0.0000. This statistical result underscores the substantial impact of monetary poverty on the propensity to engage in informal economic activities. The positive coefficient indicates that as the risk of poverty increases, so does the level of involvement in the underground economy.

This finding aligns with the conclusions of other authors who have examined similar relationships through various methodologies and metrics. Research by Berdiev et al. (2020) [10], William (2013) [12] and Hoinaru et al. (2020) [9] supports the notion that individuals facing financial hardship are compelled to participate in informal economic activities to meet their daily needs. Thus, the consistency of these results with existing literature reinforces the validity of the observation that monetary poverty drives engagement in the underground economy as a means of securing essential livelihood resources.

Furthermore, with respect to financial development, our results indicate that it has the potential to impact the level of the underground economy, aligning with findings from other studies in the existing literature (Ridwan et al., 2024 [15], Nili and Rastad, 2007 [16]; Barajas et al., 2013 [17], Nguyen and Su Dinh, 2020 [18]). The analysis of the financial development index reveals a significant inverse relationship with the underground economy, as evidenced by a coefficient of (−8.193187) and a prob-value of 0.0000. This statistical result indicates that higher levels of financial development within a country are associated with a reduction in the underground economy. Specifically, as financial systems and institutions become more advanced and accessible, the level of informal economic activities tends to decrease. The negative coefficient underscores the fact that improvements in financial development are likely to diminish the scale of the underground economy.

This inverse relationship implies that enhancements in the accessibility and operational efficiency of financial institutions and markets play a crucial role in managing essential financial dimensions more effectively. A more sophisticated and efficient financial sector not only facilitates better financial practices but also promotes greater economic transparency. By encouraging formal economic participation and reducing the incentives for engaging in informal activities, a well-developed financial sector contributes to lowering the prevalence of the underground economy. Thus, the evidence suggests that financial development serves as a significant factor in mitigating informal economic activities and fostering a more transparent economic environment.

The analysis of the legal framework reveals a significant inverse relationship with the underground economy, as indicated by a coefficient of (-0.657893) and a prob-value of 0.0244. This finding suggests that as the legal framework improves, there is a notable reduction in the prevalence of informal economic activities. A stronger and more effective legal framework is associated with a decrease in the level of the underground economy, reflecting the impact of enhanced legal frameworks on economic behavior. This finding is consistent with the conclusions reached by Haggard and Tiede (2011) [18], Medina and Schneider (2018) [16], and Alfoul et al. (2022) [27].

When individuals experience improvements in governance, particularly in areas such as the enforcement of contracts, protection of property rights, and the efficiency of law enforcement and judicial systems, they are more inclined to engage in formal economic activities. Enhanced perceptions of legal stability and reduced risks of crime and violence foster greater adherence to societal regulations. As a result, individuals are more likely to formalize their economic transactions, contributing to a decline in the underground economy. The positive effect of a robust legal framework on formal economic participation underscores its role in diminishing informal economic practices and promoting a more transparent economic environment.

In summary, our analysis reveals that poverty, financial development, and the legal framework are crucial determinants shaping the dynamics of the underground economy, with important implications for sustainable economic development. In comparison with the existing literature, the results are consistent with previous studies and support the hypotheses outlined at the beginning of Section 3. The direct relationship between poverty and underground economic activities highlights the pressing need for targeted social policies to address economic deprivation. Individuals facing monetary hardship often resort to informal means to meet their daily needs, thus underscoring the importance of poverty alleviation strategies in reducing underground economic activities. Furthermore, the inverse relationship between financial development and the underground economy indicates that enhanced financial systems can play a crucial role in mitigating informal economic practices. A more developed financial sector, characterized by greater accessibility and efficiency, supports formal economic participation and reduces reliance on informal financial transactions. Finally, enhancements in the legal framework have significant impact on the reduction in informal economic activities, underscoring the critical importance of establishing a comprehensive legal framework to promote economic formalization.

5. Policy Recommendations and Future Research Directions

In light of our findings, policymakers should focus on comprehensive and sustainable strategies to address the underlying causes of the underground economy. We recommend that, in general, governments should prioritize poverty alleviation efforts by implementing social assistance programs aimed at supporting economically vulnerable populations and creating opportunities for upward mobility. Programs that offer financial assistance, support small businesses, and provide affordable childcare can further facilitate the transition from the informal to the formal economy, contributing to sustainable economic development.

Additionally, tackling the underground economy requires a focus on enhancing financial development and improving the legal framework. States should prioritize enhancing the financial sector through modernization and improved accessibility in their policies. By strengthening financial institutions and expanding financial services, countries can foster greater economic inclusion and formalize financial practices. Reinforcing the legal framework by improving legal institutions and ensuring effective enforcement of contracts and property rights can significantly reduce informal economic activities. We recommend governments to establish a transparent and efficient legal framework to promote regulatory compliance and reduce the appeal of participating in the underground economy. To make the legal framework more transparent and efficient, governments should focus

on simplifying and streamlining business regulations, making it easier for companies to comply.

Implementing these recommendations will contribute to a more transparent and sustainable economic environment, ultimately fostering long-term economic development. We would like to outline that these recommendations are intended for EU member states, which share a relatively uniform legal framework. While it is acknowledged that these countries vary in terms of poverty levels and financial development, the specific implementation approaches may differ. Nonetheless, the general policy directions outlined in this section should be taken into account when formulating strategies for these diverse contexts.

Given that the Gini coefficient was not found to be significant within the framework of this study, a potential direction for future research could be to incorporate this indicator into alternative models and test its impact on the underground economy. Considering the substantial relevance of income inequality highlighted by the scientific literature reviewed, exploring the Gini coefficient in different contexts may reveal its influence on informal economic activities.

Furthermore, exploring other metrics for the underground economy, as investigated in this study, could provide deeper insights, and the database could be expanded in accordance with newly published data. Similarly, as a future development direction, utilizing subgroup analysis or multi-model methods could be explored to examine the characteristics and effects of the underground economy across various economic contexts.

6. Conclusions

In conclusion, it is essential for EU countries to meticulously design and implement policies aimed at mitigating poverty, advancing financial development, and enhancing legal frameworks. Such policies must be developed with a sophisticated understanding of the intricate socio-economic dynamics influencing the underground economy. Addressing both the underlying causes of informal economic activities and their broader economic implications is vital for the development of a robust and sustainable economy. By integrating considerations of financial development and legal robustness into policy formulation, these strategies can more effectively promote economic development, reduce poverty, and facilitate the transition of informal activities into the formal economic sector.

To effectively tackle the underground economy, the government should focus on specific actions such as alleviating poverty through targeted social assistance and supporting small businesses. Additionally, enhancing financial development and simplifying the legal framework are also important. Modernizing financial services and streamlining regulations will encourage compliance and reduce informal economic activities.

In summary, these efforts will help create a more sustainable economic environment. Our research adds to the field of economic development by focusing on the importance of tackling the underground economy through specific financial and legal measures. We highlight the need to modernize financial systems and improve accessibility to formalize financial practices. Strengthening the legal framework, by simplifying regulations and improving enforcement, can help reduce underground economic activities. This approach promotes sustainable long-term economic development by creating a more transparent and efficient economic environment.

Data Availability Statement: For the sources of the data presented in this paper, please refer to Table 1 above.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

The results obtained from applying the robustness test are presented in Table A1 below.

Table A1. Estimation of the equation results (Robust Least Squares).

	C	PeoplePov	FDI	LegFramework	Gini
Coefficient	17.10138	0.763861	−18.46126	−0.972531	−0.034338
Std. Error	1.468864	0.065111	1.524807	0.408430	0.194335
z-Statistic	11.64259	11.73170	−12.10727	−2.381145	−0.176694
Prob.	0.0000	0.0000	0.0000	0.0173	0.8597
R-squared	0.558733				
Adjusted R-squared	0.635154				

Source: own processing.

Appendix B

The results obtained for unit root testing (unit root test) are presented in Table A2 below.

Table A2. Stationarity of independent variables using the Levin, Lin and Chu t method.

Independent Variable	Statistic	Prob
PeoplePov	−2.91898	0.0018
FDI	−7.76796	0.0000
LegFramework	−2.04813	0.0203
Gini	−1.07290	0.1417
D(Gini)	−9.04707	0.0000

Source: own processing.

Appendix C

The results obtained regarding the correlation of the variables are presented in Table A3 below (the values are approximated to four decimal).

Table A3. Correlation results.

	PeoplePov	Gini	GDPC	LegFramework	FDI
PeoplePov	1	0.8786	−0.2857	−0.3937	−0.2952
Gini	0.8786	1	−0.2842	−0.3886	−0.2477
GDPC	−0.2857	−0.2842	1	0.2746	0.4651
LegFramework	−0.3937	−0.3886	0.2746	1	0.4560
FDI	−0.2952	−0.2477	0.4651	0.4560	1

Source: own processing.

Appendix D

Figure A1 shows the levels of the informal economy for the EU-27 for the year 2022.
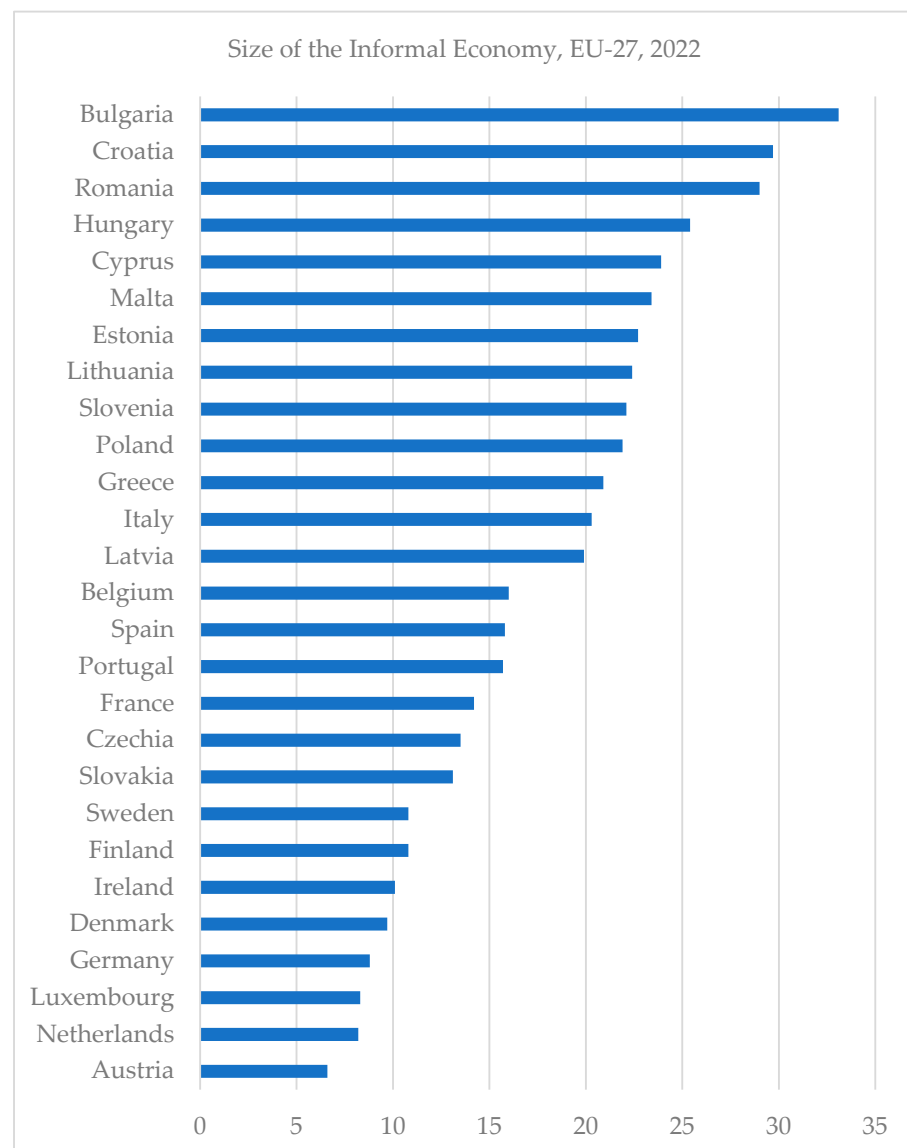
Figure A1. Size of the informal economy, EU-27, 2022. Source: own processing.

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