

Indicators That Influence the Level of Tax Evasion at International Level

Roxana-Veronica OPREA (VISAN)*

University of Economic Studies, Bucharest, Romania

*Corresponding author, oprearoxxana14@stud.ase.ro

Abstract. *Tax evasion is the intentional and unlawful underpayment or non-payment of taxes by individuals or organizations, often achieved through misrepresentation, concealment, or fraudulent reporting. It distorts the economic system, resulting in inefficiencies such as diminished government income, heightened tax costs on complying taxpayers, and suboptimal resource allocation. The purpose of this article is to provide an illustration of the characteristics of tax evasion at the national level in comparison to other countries throughout the world. The initial section of the paper presents data at the Romanian level, specifically indicators from the Directorate General for Tax Fraud from the period 2014 to 2023, while the subsequent section provides international data, specifically indicators from the World Bank and Transparency International from the period 2012 to 2019. The key objective of this article is to conduct an empirical investigation into the impact that specific indicators have on Gross Domestic Product and Economic Growth at the global level. This study employs the econometric technique of multiple regression using panel data to elucidate the influence of certain indicators on Gross Domestic Product and Economic Growth, as well as the nature of the relationships among the variables. During the time period under consideration, the findings suggest that the selected measures have a significant and positive impact on both the Gross Domestic Product and the rate of Economic Growth.*

Keywords: tax evasion, tax control, tax fraud, corruption, indicators, worldwide.

Introduction

Tax evasion is a worldwide issue with substantial implications for economic and social advancement. Notwithstanding the initiatives undertaken by governments and international organizations to address this issue, tax evasion is a persistent challenge in numerous nations, resulting in substantial losses of tax income. This work aims to find markers that reveal information about worldwide tax avoidance.

This research addresses a complicated and contemporary issue necessitating a thorough examination and stringent review. There is a substantial amount of literature on potential causes of tax evasion; the objectives of the scientific study program and the academic foundation are outlined in the following paragraphs.

The research aimed to identify (i) indicators utilized in diverse scientific studies and academic research on tax evasion at the national, European, OECD, and international levels, (ii) locate national public databases that encompass information regarding tax evasion, including tax legislation, tax rates, and tax enforcement activities, and (iii) public governance indicators issued by international organizations such as the World Bank and Transparency International, which address issues related to tax evasion, including measures of tax transparency, the quality of the tax system, and the efficiency of tax administration. The study aims to identify these indicators to provide insight into tax evasion at the national, European, OECD, and worldwide levels, examining their incorporation into existing studies to enhance the understanding of the scope and nature of tax evasion across various economies.

The paper is structured in two major sections. The first section includes a review of the national indicators provided by the National Agency for Fiscal Administration ("ANAF"). The second section focuses on international indicators, it includes a descriptive analysis regarding the Corruption Perceptions Index ("CPI") and propose a multivariate panel data regression based on data collected from the World Bank and Transparency International. The paper ends with conclusions, future research directions, and research limitations.

Literature review

Most of the literature states that fraud is a topic of great interest, but no one has attempted to demonstrate why or how much interest there has been in publishing on fraud (Chiriac et al., 2021). The same opinion is shared by Ngai and al. (2011), although the detection of financial fraud is an emerging topic of great importance, there has not yet been a comprehensive literature review in this area.

An exploratory analysis of the dynamics of the activity of the Directorate General for Tax Fraud ("DGAF") in Romania in the period 2014 to 2020 examines the evolution and trends in the activity of this institution responsible for combating tax fraud in Romania. The researchers analyzed the volume and types of tax offences identified and prosecuted by the institution, as well as the results and effectiveness of the measures taken to combat these offences (Aivaz et al., 2022).

Alongside a wide range of positive aspects generated by technological developments and economic growth, modern society is facing a wide range of negative aspects reflected in various fraudulent actions. There are situations where non-compliant behavior by some taxpayers manifests itself in the speculation of regulatory deficiencies or intentional regulatory breaches in order to continuously develop fraudulent methods capable of overcoming the vulnerabilities of existing preventive measures, many of which target the tax sector (Hilal et al., 2022). Due to the fact that fraud prevention systems do not provide adequate security against these illegal acts, the state, specialized units, and departments have introduced a number of inspection or control measures and techniques to detect fraudulent acts after they have already been committed (West and Bhattacharya, 2016).

Non-compliance detection is a broad area that addresses the problem of identifying instances of data or events that do not comply with expected legal behavior. Many of the techniques used for non-compliance detection are essentially the same, but depending on the scope, they use different methods of analysis (Chandola et al., 2009).

The characteristics of some negative phenomenon in Romania, such as corruption, tax evasion, and the underground economy, are captured in comparison with the other Member States of the European Union ("EU"). The analysis of the evolution of the underground economy in the period 2003 to 2010 shows a slight reduction in the size of this phenomenon, by about 2 p.p., the difference between Romania and the EU-27 being 10 p.p. At the same time, the analysis of corruption through the CPI shows that Romania is perceived as one of the most corrupt countries in the EU, together with Greece and Bulgaria, based on annual reports by Transparency International (Brasoveanu, 2010). In another approach, it was concluded that these negative phenomena negatively influence the level of taxation and economic growth, lead to an increase in the general consolidated budget deficit, and subsequently to an increase in Romania's public debt (Brasoveanu and Brasoveanu, 2008).

It is known that Romania is in an economic-financial crisis and to get out of it, it must comply with the nominal convergence criteria imposed by the EU, both in terms of public finances

and in terms of reducing this phenomenon and increasing the collection of public financial resources in this way (Brondolo, 2009; Gupta, 2005).

Tax evasion is seen as one of the main causes of lower tax revenues. It is an economically negative phenomenon, present in international economies in varying but increasing proportions, and is caused by a number of factors (Alm and Martinez-Vazquez, 2007).

While numerous studies have examined the impact of tax evasion, the existing literature primarily focuses on theoretical frameworks and general trends across different economies. However, a clear gap remains in understanding the specific indicators that can serve as robust markers for tax evasion. This paper fills the gap by developing a new empirical framework that systematically incorporates multiple international tax-related indicators.

Data and Methodology

National level data

The data for the national-level analysis is sourced from ANAF, specifically from the section dedicated to the results of DGAF. The study covers the period 2014 to 2023, which includes the first year of reporting and the most recent available data.

The indicators used in the analysis include identified losses (EUR million), number of taxpayers checked, number of referrals to prosecution authorities, securing measures on identified assets (EUR million), number of contraventions, fines (EUR million), confiscation of goods, cash, and revenue (EUR million), number of taxpayers for which business activity was suspended.

International level data

For the international analysis (all countries for which publicly available information on the selected variables are included), the study examines data from 2012 to 2019 (the most recent year with complete data for all variables). The dataset is compiled from publicly available sources, including The World Bank and Transparency International.

Table 1. Description of the variables

Variables	Definition	Source	Time period
Dependent variables			
GDP	Macroeconomic indicator that reflects the sum of the market value of all goods and services intended for final consumption, produced in all branches of the economy within a country during a year.	World Bank	2012-2019
Economic Growth	The positive variation in the production of goods and services in an economy over a given, generally long, period.	World Bank	2012-2019
Independent variables			
CPI	Ranks 180 countries and territories around the world according to perceived levels of public sector corruption, assigning a score on a scale from 0 (very corrupt) to 100 (very clean).	Transparency International	2012-2019
GINI	Measures the degree to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. Thus, a GINI index of 0 represents perfect equality, while an index of 100 implies maximum inequality.	World Bank	2012-2019
Total tax and contribution rate	Measures the amount of taxes and mandatory contributions payable by businesses, after taking into account allowable deductions and exemptions, as a percentage of businesses' profits.	World Bank	2012-2019

Variables	Definition	Source	Time period
Corporate disclosure	Measures the degree to which investors are protected by disclosing financial and proprietary information. The index ranges from 0 to 10, with lower values indicating less disclosure and higher values indicating more disclosure.	World Bank	2012-2019

Source: Authors' own research.

National level methodology

The study conducts a comparative statistical analysis of the selected indicators, focusing on their evolution and trends over time. The statistical techniques employed are descriptive statistics to summarize key patterns in the data and correlation matrix to assess relationships between different indicators. The data is processed using Microsoft Excel and EViews 10 for statistical analysis.

International level methodology

At the international level, the study employs a multivariate panel data regression model, following the framework of Brooks (2008). Multivariate panel data regression was approached by Brooks in the general form as follows.

$$y_{it} = \alpha + \beta x_{it} + u_{it}, \text{ where:}$$

- y_{it} – endogenous variable;
- x_{it} – exogenous variable;
- α – constant;
- u_{it} – time-varying random component;
- $i = 1, \dots, N$, and N is the size of the sample of countries;
- $t = 1, \dots, T$, and T is the size of the time series.

The modelling of the impact of selected indicators on GDP and Economic Growth is carried out in the form of a multiple regression with panel data where GDP and Economic Growth are the dependent variable and selected indicators (GINI, CPI, Total tax and contribution rate, Corporate disclosure) are the independent variables. The data is processed using Microsoft Excel and the regression analysis is conducted using EViews 10.

Results and Discussions

National level

DGAF is a structure established within ANAF in June 2013 and has been operating since December 2013. The priority objective of this structure is to combat tax evasion, tax fraud, and money laundering at the national level. The investigative work undertaken aims to eliminate the damage to the state budget, which is important from both a financial and social point of view, leading to strengthening taxpayers' confidence in the integrity of the tax system.

Table 2. Indicators of tax evasion in Romania in the period 2014-2023

Year	Identified losses (EUR million)	No. of taxpayers checked	No. of referrals to prosecution authorities	Securing measures on identified assets (EUR million)	No. of contraventions	Fines (EUR million)	Confiscation of goods, cash, and revenue (EUR million)	No. of taxpayers whose business activity was suspended
2014	213	24,160	714	557	19,429	21	63	1,628
2015	283	35,514	810	583	30,835	33	55	849
2016	193	36,318	705	445	29,075	32	18	498
2017	411	32,518	443	154	24,641	31	18	522
2018	218	48,601	328	56	31,218	35	12	615
2019	122	37,575	235	76	23,198	33	24	479
2020	101	14,772	183	69	6,645	12	11	188
2021	27	23,358	301	43	12,434	18	2	622
2022	117	31,786	194	21	18,176	21	6	462
2023	66	33,836	199	26	19,475	28	14	408

Source: Authors' own research.

Table 2 shows a difference between the value of the indicators before and after 2020, a year strongly influenced by the pandemic crisis. A peak in the value of identified losses is recorded in 2017 (EUR million 411), although the number of prosecutions is much lower than in previous years. The value of the indicators dropped drastically in 2020 and in the following years failed to return to the pre-pandemic highs.

The data presented in Table 2 show that the year 2020 is far away from the other years analyzed, as it coincides with the year of the pandemic in which the government took a series of measures to limit and stop the spread of the disease (Stan et al., 2020).

On the basis of the selected indicators, the following descriptive statistics were determined.

Table 3. Descriptive statistics

Variables	Mean	Median	Maximum	Minimum	Std. dev.	Observations
Fines	26.28	29.08	34.91	11.63	7.82	10
Confiscation	22.19	16.03	62.88	1.81	20.43	10
Contraventions	21,512.60	21,336.50	31,218.00	6,645.00	7,986.18	10
Taxpayers suspended	627.10	510.00	1,628.00	188.00	390.00	10
Taxpayers checked	31,843.73	33,176.87	48,601.00	14,772.00	9,273.98	10
Measures	203.10	72.53	583.37	20.85	230.28	10
Losses	175.11	157.73	411.09	27.23	113.74	10
Referrals	411.20	314.50	810.00	183.00	243.23	10

Source: Authors' own research.

The correlation matrix is presented in Table 4; high values of the coefficients (greater than +0.5 or less than -0.5) indicate that there are statistically significant relationships between the values considered (direct relationships if the value of these coefficients is positive, inverse relationships if the value of these coefficients is negative). Low values of the coefficients indicate that there are no correlations between the statistical variables.

Table 4. Correlation matrix

Variables	Fines	Confiscation	Contraventions	Taxpayers suspended	Taxpayers checked	Measures	Losses	Referrals
Fines	1							
Confiscation	0.20	1						
Contraventions	0.94	0.35	1					
Taxpayers suspended	0.03	0.82	0.21	1				
Taxpayers checked	0.92	-0.01	0.88	-0.04	1			
Measures	0.22	0.86	0.44	0.70	-0.01	1		
Losses	0.51	0.44	0.61	0.27	0.32	0.47	1	
Referrals	0.35	0.78	0.56	0.66	0.12	0.97	0.57	1

Source: Authors' own research.

The analysis of the correlation matrix shows strong relationships between the indicators analyzed (Table 4). Therefore, the number of taxpayers checked has a strong direct correlation with the value of fines (0.92) and the number of contraventions (0.88). In practice, at the stage prior to the triggering of an audit by anti-fraud inspectors, a risk analysis of the companies to be audited is carried out, and the audit is carried out for cases where the risk coefficients indicate potential fraud. In practice, checks in the office take the form of fines on the ground.

Regarding the analysis of the number of referrals to the prosecution authorities, there are strong relationships between this indicator and the value of the measures of securing identified assets (0.97), the number of contraventions (0.56), the value of confiscation of goods, cash, and income (0.78) and the number of taxpayers for whom the suspension of commercial activity was ordered (0.66). The result of the statistical relationship (0.97) shows that, in such situations, the taxpayer is likely to damage the state budget, which is why it is decided to take precautionary measures on identified assets (such as freezing assets or cash). Similarly, it is likely to order confiscation of goods, cash, and income (0.78) or suspension of commercial activities (0.66).

International level

The non-governmental organization Transparency International publishes data on the CPI that ranks 180 countries and territories around the world according to perceived levels of corruption in the public sector, giving a score on a scale from 0 (very corrupt) to 100 (very clean).

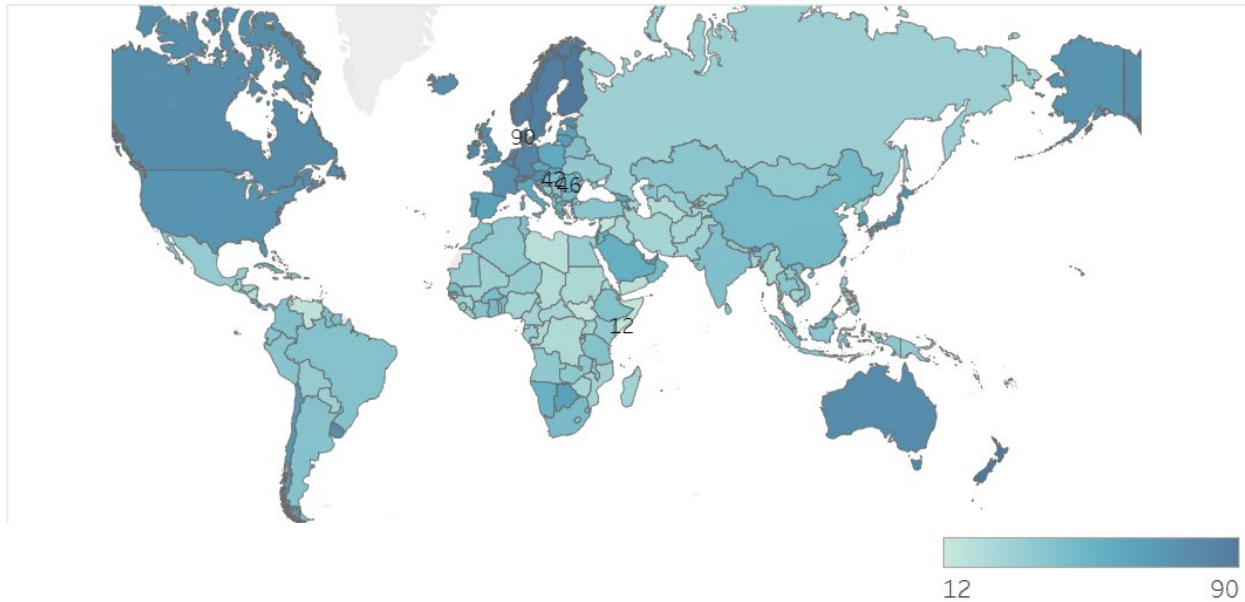


Figure 1. Evolution of the CPI in the year 2022

Source: Authors' own research.

Figure 1 shows the evolution of the CPI at the international level, which falls within the range of 12 (indicating a corrupt country) and 90 (indicating a clean country). While in 2012 the minimum value of 8 is recorded in Afghanistan, North Korea, and Somalia, in 2022 the minimum value of 12 is recorded only in Somalia. If in 2012 the maximum value of 90 is recorded in Denmark, Finland, and New Zealand, in 2022 the maximum value of 90 is recorded only in Denmark. At the European level, the lowest values are recorded in Greece (36) in 2012 and Hungary (42) in 2022. Romania is in the middle of the ranking, with 44 in 2012 and rises to 46 in 2022, which shows that it is a corrupt country, along with Greece and Hungary.

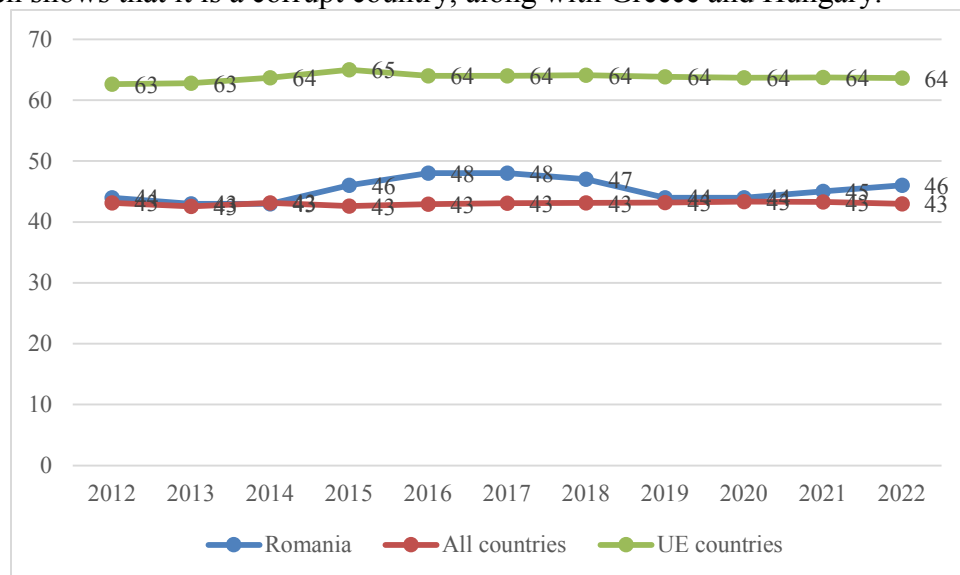


Figure 2. Evolution of the CPI during the period 2012-2022

Source: Authors' own research.

Figure 2 shows a comparison between the evolution of the CPI indicator at the Romanian and EU and international levels. It can be seen that Romania is closely following the global trend, while it is below the EU average by about 20 points. This analysis shows that Romania is among the most corrupt countries in the EU, and in terms of ranking, Romania ranks among the last places at the European level, alongside countries such as Bulgaria, Hungary, Greece, and Italy.

Based on the dependent and independent variables selected, the following descriptive statistics were determined.

Table 5. Descriptive statistics

Variables	Mean	Median	Maximum	Minimum	Std. dev.	Observations
Economic Growth	0.02	0.02	0.16	-1.70	0.04	627
GINI	35.94	35.10	59.10	23.20	7.22	627
CPI	49.90	44.00	92.00	11.00	19.31	627
Corporate disclosure	6.12	7.00	10.00	0.00	2.45	627
GDP	23.50	25.38	30.69	19.59	1.99	627
Tax rate	0.41	0.40	3.39	0.07	0.21	627

Source: Authors' own research.

The descriptive statistics show that in the period 2012 to 2019 there is an average Economic Growth rate of about 2%, while the average value recorded for the CPI is 49.90 (a rather high level of corruption worldwide). During the analyzed period, the highest GDP growth rate is recorded in 2012 in Libya (86.82%) and the lowest is also recorded in 2012 in Sudan (-46.08%). The highest CPI value is recorded in 2014 in Denmark (92) and the lowest value is recorded in several countries (North Korea, Somalia, Afghanistan) in the period 2012 to 2015 (8).

The following is the correlation matrix that highlights the interdependencies between the variables included in the econometric analysis, how they influence each other, the intensity of the relationships, and their direction.

Table 6. Correlation matrix

Variables	Economic Growth	GINI	CPI	Corporate disclosure	GDP	Tax rate
Economic Growth	1					
GINI	0.36	1				
CPI	-0.28	-0.39	1			
Corporate disclosure	0.01	-0.09	0.09	1		
GDP	-0.14	-0.05	0.37	0.29	1	
Tax rate	0.01	0.18	-0.14	-0.08	0.20	1

Source: Authors' own research.

It can be seen in Table 6 that there is an interdependence between the dependent variables GDP and Economic Growth and all the explanatory variables considered. The dependent variable GDP shows the strongest relationship with the CPI (37%) and with the Corporate disclosure (29%), and the weakest relationships are with the GINI (-5%) and with the Tax rate (-14%). The dependent variable Economic Growth shows the strongest relationship with the GINI (36%) and the CPI (-28%), and the weakest relationships are with the degree of Corporate disclosure and the Tax rate (1%).

In the quantitative analysis, a multivariate regression with panel data is run to capture how the independent variables (GINI, Corporate disclosure, CPI, Tax rate) influence the dependent

variable (GDP, Economic Growth). The regression equations are presented below in the following form.

$$(1) \text{GDP}_{it} = \alpha + \beta_1 * \text{GINI}_{it} + \beta_2 * \text{Corporate_disclosure}_{it} + \beta_3 * \text{CPI}_{it} + \beta_4 * \text{Tax_rate}_{it} + u_{it}$$

$$(2) \text{Economic Growth}_{it} = \alpha + \beta_1 * \text{GINI}_{it} + \beta_2 * \text{Corporate_disclosure}_{it} + u_{it}$$

Table 7. Results of the regression analysis

Independent variables	Regression model	
	(1)	(2)
GINI	0.025060 (2.438385)**	0.001750 (8.091381)***
Corporate disclosure	0.233768 (8.415832)***	0.001352 (2.137909)**
CPI	0.043480 (11.38852)***	
Tax rate	2.476690 (7.585146)***	
C	19.96991 (38.20701)***	-0.048851 (-5.340375)***
R-squared	0.288018	0.094986
F-statistic	63.00566	33.69058
Prob(F-statistic)	0.000000	0.000000
Observations	628	645
Countries	136	146

Source: Authors' own research.

Notes: ***, **, * indicate statistical significance at the 1%, 5%, and 10% significance level, respectively. Each variable is presented with the associated coefficient value and the t-statistic value in parentheses.

According to the data in Table 7, the results of the first regression model indicate that the probability for the F-statistic test is less than 1%, which means that the model is valid. The same is true for the probability of the independent variables (except for the GINI, which is less than the 5% percentage).

The R-squared has a value of 0.288018, that is 28.80% of the variation in the dependent variable (GDP) is explained by the regression model.

The proposed regression model shows a positive influence of all independent variables on GDP. Therefore, for a 1% increase in the GINI, Corporate disclosure, CPI or Tax rate, GDP will increase in proportion to the value of the coefficient on the variable.

In other words (i) the more the distribution of income (or, in some cases, consumption expenditure) between individuals or households in an economy tends towards maximum inequality (the GINI increases), the more positive GDP will develop; (ii) the higher the degree of Corporate disclosure of information (on ownership and financial information) by enterprises, the more positive GDP will develop; (iii) the cleaner or less corrupt a country is (CPI indicator increases), the more positive GDP will develop; and (iv) the higher the Tax rate, the more positive the GDP will develop.

The link between GINI coefficient and tax evasion highlights the broader economic consequences of inequality. Policymakers should design tax systems that promote fairness and social equity, ensuring that wealthier individuals and corporations contribute their fair share.

The positive impact of Corporate disclosure on reducing tax evasion suggests that policies promoting financial transparency can enhance compliance. Governments should enforce stricter corporate reporting requirements, including the public disclosure of financial statements and beneficial ownership information.

The strong correlation between the CPI and lower levels of tax evasion underscores the need for anti-corruption initiatives. Policies that improve institutional integrity, reduce bureaucratic inefficiencies, and enhance whistleblower protections can contribute to greater tax compliance.

Although the increase in the Tax rate is intended to collect more revenue for the state budget, in some cases, drive higher levels of evasion. This underscores the importance of a balanced tax policy where rates are set at levels that maximize revenue without incentivizing tax avoidance or informal economic activity.

According to the data in Table 7, the results of the second regression model indicate that the probability of the F-statistic test is less than 1%, which means that the model is valid. The same is true for the probability of the independent variables (except for the degree of Corporate disclosure, which is less than the 5% percentage).

The R-squared has a value of 0.094986, that is 9.49% of the variation in the dependent variable (Economic Growth) is explained by the regression model.

The proposed regression model shows a positive influence of the GINI, Corporate disclosure variables on Economic Growth. Thus, at a rate of 1% increase in the GINI or Corporate disclosure, Economic Growth will increase in proportion to the value of the coefficient on the variable.

In other words (i) the more the distribution of income (or, in some cases, consumption expenditure) between individuals or households in an economy tends towards maximum inequality (the GINI increases), the more positive Economic Growth will develop; and (ii) the higher the level of Corporate disclosure of information (ownership and financial information) by businesses, the more positive Economic Growth will develop.

The second regression equation was also tested with the independent variables CPI and Tax rate, but the result was not as expected because (i) at a rate of 1% increase in the CPI, Economic Growth will decrease in proportion to the value of the coefficient on the variable; in other words, the cleaner or less corrupt a country is (CPI rises), the more negative Economic Growth will develop; and (ii) the regression equation was not valid by including the Tax rate.

Conclusions

In conclusion, the article aims to elucidate the peculiarities of tax evasion at the national level in comparison to other countries globally. The initial section of the report offers data at the Romanian level, specifically indices supplied by DGAF. The statistics indicate a dynamic evolution of the indices annually, particularly during the pandemic period. The minimization of tax evasion and enhancing collected budget revenues are objectives that confer strategic significance to the operations of DGAF, ensuring that the analysis of the indicators provided by this entity yields an assessment of economic compliance and tax fairness. The DGAF's work is intended to help drive economic growth. The centralization and comparability of data enhance confidence in the accuracy of the regulatory authority, while the transparency and promptness of reported findings reflect a robust and equitable tax system.

The second section of the presentation offers international data, notably indices from the World Bank and Transparency International. This article examines the empirical effects of specific variables on GDP and Economic Growth from 2012 to 2019 at the international level. This research

employs the multiple regression econometric technique of multiple regression using panel data to elucidate the influence of certain indicators on GDP and Economic Growth, as well as the nature of the relationships among the variables.

The findings of the first regression model indicate a significant and positive impact of the selected indicators on GDP over the period analyzed. More specifically, the positive evolution of GDP is due to (i) an increase in the GINI (Bertotti and Modanese, 2014a, 2014b, have shown that tax evasion generally results in increased economic inequality), (ii) increased Corporate disclosure of information (the more financial information is made public, the lower the level of tax evasion because taxpayers cannot avoid paying taxes and contributions), (iii) increase in the CPI (countries are cleaner or less corrupt, which means that tax evasion is reduced), and (iv) increase in the Tax rate, although the increase in the Tax rate is intended to collect more revenue for the state budget, there are economies where the increase in the Tax rate leads to an increase in tax evasion (Fisman and Shang-Jin, 2004).

The findings of the second regression model indicate a significant and positive impact of the selected indicators on Economic Growth over the period analyzed. More specifically, the positive evolution of the economy is due to (i) an increase in the GINI (the same result as in the first regression model), and (ii) an increase in Corporate disclosure (the same result as in the first regression model).

Despite the valuable insights gained from this study, some limitations should be acknowledged. First of all, the study relies on publicly available data from national and international sources. However, inconsistencies in data reporting across countries and years may affect the accuracy and completeness of the analysis. Second of all the analysis is limited to the period 2012 to 2019 at the international level and 2014 to 2023 at the national level. The exclusion of more recent years, particularly post-pandemic, may limit the understanding of evolving tax evasion patterns.

Directions for future research could include, for example, post-pandemic analysis or sectoral analysis. Given the economic shifts caused by Covid-19, future research should examine whether tax evasion patterns and enforcement mechanisms have changed in response to pandemic-related economic policies. Also, investigating tax evasion across different economic sectors (e.g., multinational corporations) could reveal industry-specific vulnerabilities and inform tailored policy responses.

Acknowledgements

This paper was co-financed by The Bucharest University of Economic Studies during the PhD program.

References

- Aivaz, K.A., Munteanu, I.F., & Chiriac A. (2022). An exploratory analysis of the dynamics of the activity of the Fiscal Antifraud Directorate General in the 2014-2020 period at the level of Romania. *Technium Social Sciences Journal*, 30, pp. 337-347
- Alm, J., & Martinez-Vazquez, J. (2007). Tax Morale and Tax Evasion in Latin America, Andrew Young School of Policy Studies, Georgia University, International Studies Program, W.P. 07-32
- Bertotti, M.L., & Modanese, G. (2014a). Mathematical models for socio-economic problems. *Springer INDAM Series*, 6, pp. 124-134

- Bertotti, M.L., & Modanese, G. (2014b). Micro-to-macro models for income distribution in the absence and in the presence of tax evasion. *Applied Mathematics Computation*, 244, pp. 836-846
- Brasoveanu, I.V. (2010). Underground Economy and Corruption: the Major Problems of the Romanian Economy. *Theoretical and Applied Economics*, 11(552), pp. 91-102
- Brasoveanu, L.O., & Brasoveanu, I. (2008). The Correlation between Fiscal Policy and Economic Growth. *Theoretical and Applied Economics, Asociatia Generala a Economistilor din Romania - AGER*, 7(524), pp. 19-26
- Brondolo, J. (2009). Collecting Taxes During an Economic Crisis: Challenges and Policy Options. *IMF staff position note*, SPN/09/17, pp.1-37
- Brooks, C. (2008). Introductory econometrics for finance. *Cambridge University Press, UK*, Fourth Edition
- Chandola, V., Banerjee, A., & Kumar, V., (2009). Anomaly detection: A survey. *ACM Computing Surveys*, 41(3), pp. 1-58
- Chiriac, A., Nisulescu, I., & Aivaz, K.A. (2021). Fraud - A multidisciplinary element. Famous case studies in such different fields. *Technium Social Sciences Journal*, 26(1), pp. 930-943
- Fisman, R., & Shang-Jin, W. (2004). Tax Rates and Tax Evasion: Evidence from 'Missing Imports' in China. *Journal of Political Economy*, 112 (2), pp. 471-496
- Gupta, R. (2005). Asymmetric Information, Tax Evasion and Alternative Instruments of Government Revenue. *Economics Working Papers*, 200533
- Hilal, W., Gadsden, S.A., & Yawney, J. (2022). Financial Fraud: A review of Anomaly Detection Techniques and recent Advances. *Expert systems With applications*, 193, 116429
- Ngai, E., Hu, Y., Wong, Y., Chen, Y., & Sun, X. (2011). The application of data mining techniques in financial fraud detection: A classification framework and an academic review of literature. *Decision Support Systems*, 50(3), pp. 559-569
- Stan, M.I., Rus, M., & Tasente, T. (2020). Young people's perception of the measures taken by the authorities in the context of the Covid-19 pandemic. *Technium Social Sciences Journal*, 7(1), pp. 18-27
- West, J., & Bhattacharya, M. (2016). Intelligent financial fraud detection: A comprehensive review. *Computers & Security*, 57, pp. 47-66