Chapter

Economic and Financial Crimes and the Development of Society

Monica Violeta Achim, Sorin Nicolae Borlea, Viorela Ligia Văidean, Decebal Remus Florescu, Eugenia Ramona Mara and Ionut Constantin Cuceu

Abstract

The purpose of this chapter is to study the detailed dynamics of economic and financial crimes within the European Union member states, namely corruption, shadow economy, tax evasion, money laundering, cybercrime and financial frauds. Our econometric modelling focuses on the impact of the vector of financial and economic crime proxies upon economic prosperity and human development. In accordance to the reviewed literature, for our sample of European Union countries, corruption and shadow economy have a negative effect upon the vector of development proxies while money laundering and cybercrimes belonging to "white collars" are positively correlated with the vector of development proxies that we analyze. All the data are interpreted and discussed, and then conclusions are drawn. Governmental policies on economic prosperity and societal wellbeing should focus on reducing corruption and shadow economy, in order to favour benefits in the field of economic and human development.

Keywords: corruption, cybercrime, gross domestic product, human development index, money laundering, shadow economy

1. Introduction

At the international level, there is not any common definition valid for all the states regarding the economic and financial crime phenomena but in practice, this concept is associated with various deeds such as corruption, tax evasion, money laundering, theft cheating, embezzlement, data distortion, counterfeiting, data and document cover up and destruction, tax evasion, crimes regarding the accounting books and many others.

The growing digital economy together with the period of crisis create challenges for the criminals to find new channels to engage in crimes. For instance, the current crisis determined by the COVID-19 pandemic led to the deterioration of working conditions, disruptions of financial markets, accentuating the need for liquidity in companies. Cyber scams, fraud, disinformation and other cyber-enabled crimes will become a growth industry, as people under lockdown kill time online [1]. On March 2020 the number of cybercrime events increased about 1.5 times compared to the similar month of 2018 [2]. Under these conditions, the theft of banking data, followed by the compromise of savings accounts, frauds on some institutions and

companies or blocking access to information systems, increased the pressure on society. Cybercrime represent an important channel for money laundering [3]. Thus the development of new financial technologies (virtual currency, e-commerce activities, mobile payments, prepaid cards) facilitates the high movements of money, it sometimes facilitates anonymity and secrecy and these are the best channels for cyber to be explored in order to get higher benefits under the form of fraud, also including money laundering. An important role in the fight against money laundering is played by international money laundering regulations which have known important adjustments year by year especially starting with the fifth EU Directive (EU) 2018/843 [4] which brings many important adjustments including addressing the risks associated with prepaid cards and virtual currencies.

All these crimes bring along many negative effects upon people on many channels: the decrease of the revenues collected by the national budgets [5, 6]; the diminishing of the level of economic and sustainable development [7–11]; the reduction of the level of investments ([12], p. 438; [13]); or the increase of social inequalities and poverty [14, 15].

The remainder of this chapter is structured as follows: section 2 presents various statistics of crime deeds (frauds, corruption, shadow economy, tax evasion, money laundering, and cybercrime) within the European Union member states with reference to Romania; section 3 is dedicated to the analysis of the relationship between economic and financial crimes and economic development. The paper ends with the formulation of the final conclusions, limits and future studies.

2. Statistics on economic and financial crimes

2.1 Top of frauds

According to the study of PwC [16] conducted on 5,000 respondents around the world, the first category of frauds by types is represented by customer frauds (fraud to the clients), followed very closely by cybercrime, asset misappropriation, corruption and financial statement frauds. When it comes to the frequency of frauds by domains, according to a study conducted by ACFE [17] conducted on 2,504 cases of occupational frauds that were investigated between January 2018 and September 2019, the highest number of frauds occurs in banks and financial services (386 cases, losses' average 100.000$), followed by government/public administration (195 cases, losses' average 100.000$) and manufacturing (185 cases, losses' average 198.000$). However, when it comes to the analysis of the value of losses caused by frauds, the same study establishes that the highest prejudices are found in mining (losses' average of 475.000$ for a total of 26 cases), followed by real estate (losses' average of 254.000$ for a total of 52 cases) and telecommunications (losses' average of 257.000$ for a total of 67 cases) [17].

According to our own calculations, based on the data for crimes investigated by the Romanian Police for the 2011–2019 period, the highest losses by domains are found in banks and financial institutions, in real estate and the food industry (**Figure 1**).

Related to the frequency of frauds by types of entities, the most fraudulent companies are the private companies (44%) followed by public companies (26%) [17].

2.2 Corruption

Corruption, as another component of crimes, goes hand in hand with many types of frauds. To calculate corruption levels, we will use the data offered by Transparency International regarding the *Corruption Perception Index (CPI)*

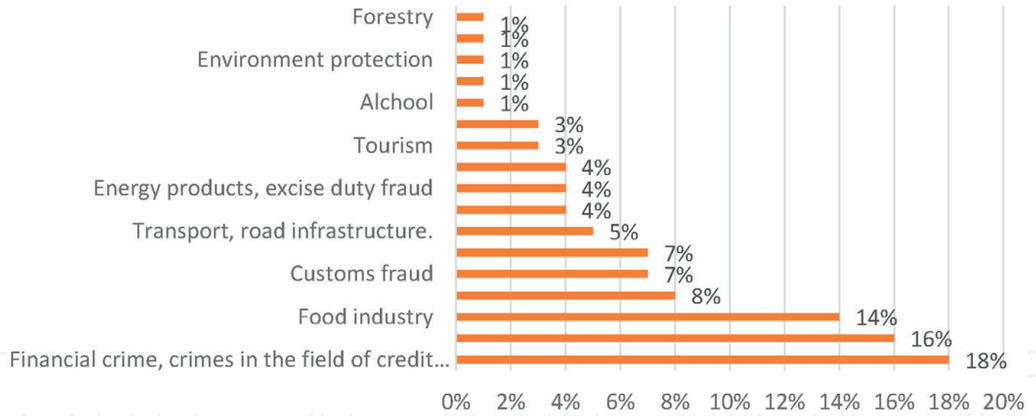

Figure 1.
Top frauds by total losses (% in total losses), by domains in Romania. Source: Own calculations based on the data from the Romanian police for the 2011–2019 period.

referring to perceived corruption. In our study, the level of corruption is calculated as the order position occupied by a certain country out of the total 180 countries taken into account within the sample: the higher the ranking, the higher the level of corruption, and the lower the ranking, the lower the level of corruption, respectively ([18], p.41). According to our calculations conducted over the 2005–2019 period (**Figure 2**), the Northern countries (Denmark, Finland, Sweden, the Netherlands) are the least corrupt countries among European countries, while Central and Eastern European countries face the highest levels of corruption (Bulgaria, Romania, Greece and Croatia).

Regarding the evolution of the level of corruption within European countries over the 2005–2019 period, we may note very small changes during this period (**Figure 3**). Thus, despite the efforts made by the organisations, corruption still remains a long standing problem among European countries.

2.3 Shadow economy

Shadow economy represents another component of economic and financial crime. The level of the shadow economy is expressed in percentages as the weight of the shadow economy within the GDP, as provided by the database calculated by Medina and Schneider [20]. According to our calculations conducted over the 2005–2017 time period, the average percentage of GDP lost in shadow, for the European Union countries, is 17% (**Figure 4**). However, there are high discrepancies among European Union member states. The highest values for the shadow economy are found in Central and Eastern European countries such as Croatia,

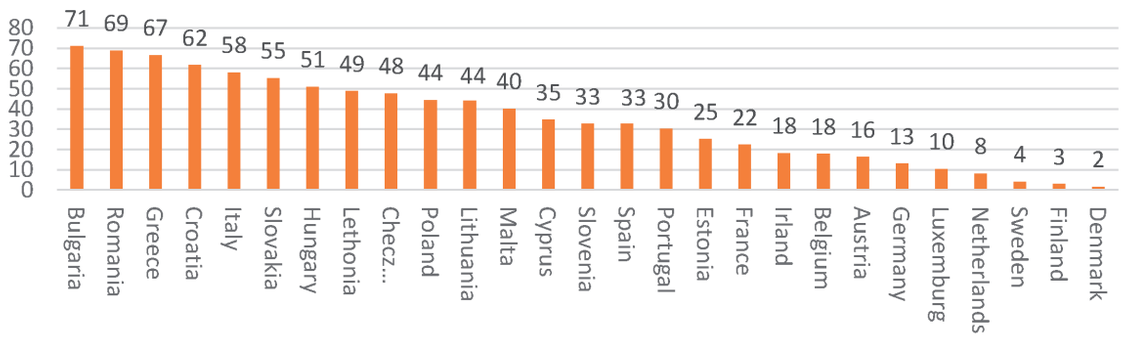

Figure 2.
Corruption within European Union countries, in average for the period 2005–2019. Source: Own calculations based on the data of corruption perception index provided by transparency international [19].

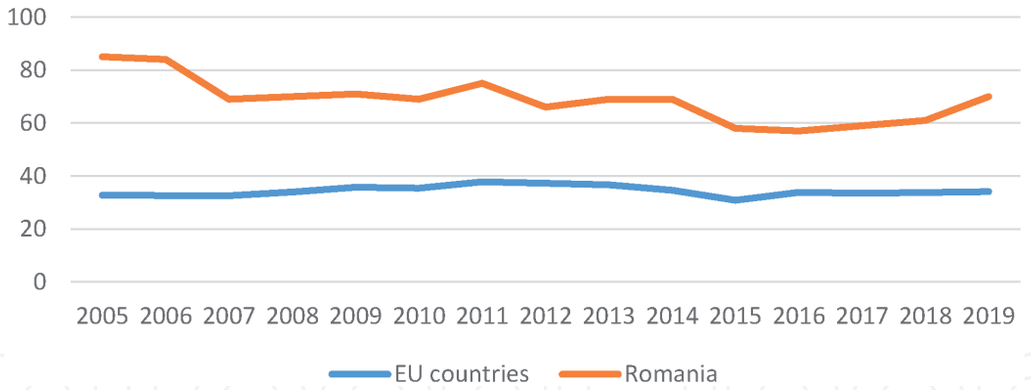

Figure 3.
Evolution of corruption throughout the European Union countries, 2005–2019. Source: Own calculations based on the data of corruption perception index provided by transparency international [19].

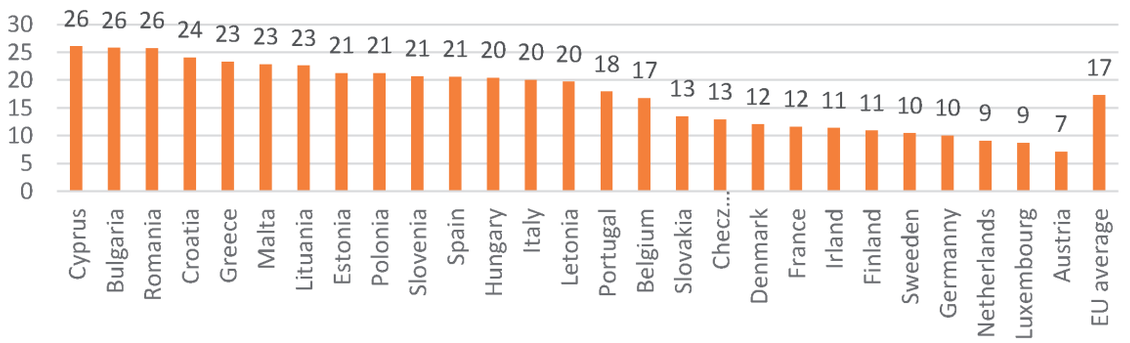

Figure 4.
Shadow economy (% of GDP) in European Union countries, in average for the period 2005–2017. Source: Own calculations based on the data from Medina and Schneider [20].

Romania and Bulgaria while the lowest levels of shadow economy are found in Austria, Luxembourg, the Netherlands and Germany.

However, when we analyse the evolution of the shadow economy in European Union countries, we may note a decreasing trend year by year. For Romania also, the level of shadow economy has significantly decreased during the last 12 years. Thus, in 2005 the level of shadow economy was 31% while in 2017 it is 23%, thus it has reduced by about 8 percentage points (**Figure 5**).

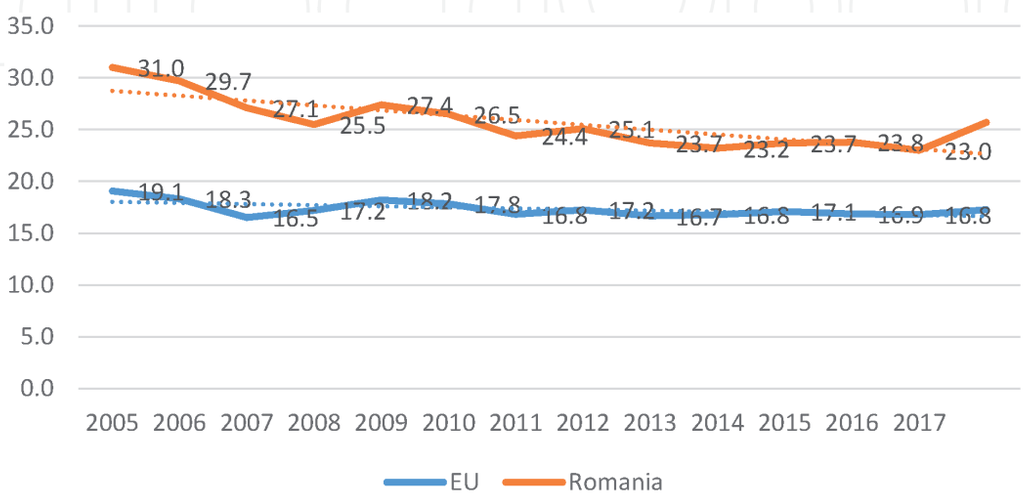

Figure 5.
Evolution of shadow economy (% of GDP) in European Union countries, 2005–2017. Source: Own calculations based on the data of Medina and Schneider [20].

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2.4 Tax evasion

According to the European Commission [21], the percentage of value added tax (VAT) revenues lost in the European Union in 2018, highly varies among the member states (**Figure 6**). The highest lost VAT revenues are found in Romania (34.3%), followed by Greece (30.1%) and Lithuania (25.9%). The lowest lost VAT revenues are found in Sweden with only 0.7%.

From **Figure 6** we may note that Romania registers the highest level of lost VAT revenues among the European Union member states. However, when it comes to the whole level of tax evasion, it registers a significant decrease in Romania throughout the 2009–2017 period, from 2.84% in GDP (2009) to 1.68% GDP (2017), according to the data provided by the National Institute of Statistics in Romania (**Figure 7**).

2.5 Money laundering

In order to find data on worldwide money laundering, we measure the money laundering deeds using the Basel AML (Basel Anti-Money Laundering) index

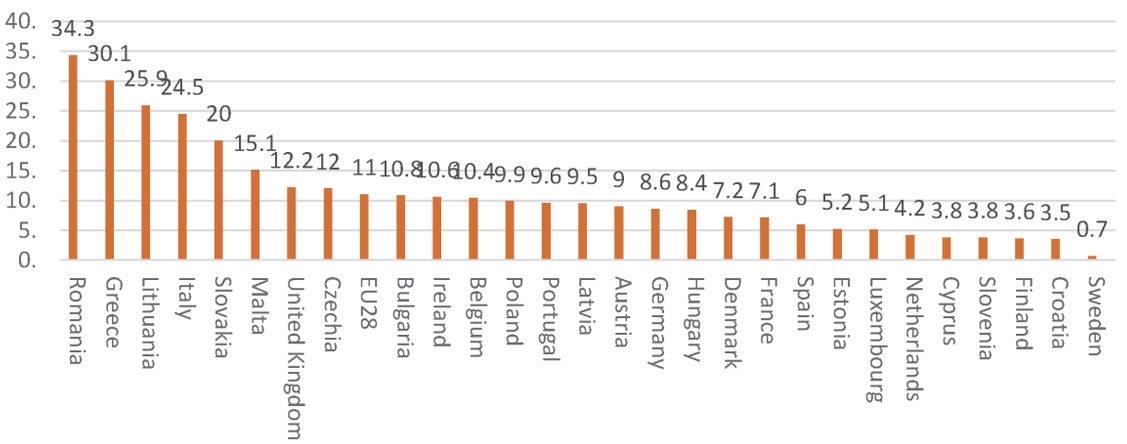

Figure 6.
Percentage of value added tax (VAT) revenue lost in the European Union countries, in 2018. Source: European Commission [21].

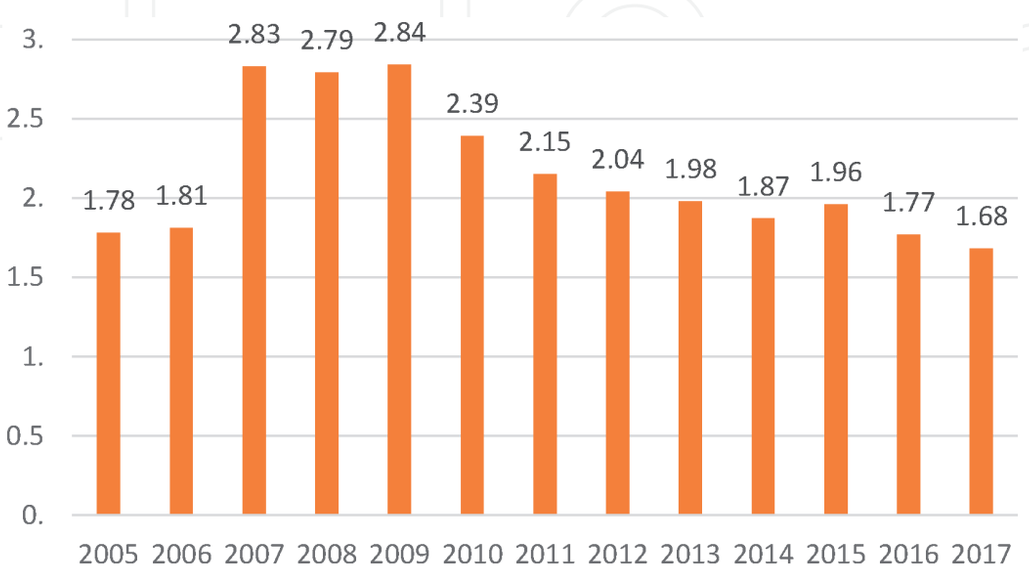

Figure 7.
Tax evasion (% in GDP) in Romania, 2005–2017. Source: Own calculations based on data provided by the National Institute of statistics in Romania [22].

which evaluates the risk of money laundering and terrorism funding. This score ranges between 0 meaning the lowest risk, to 7 meaning the highest risk of money laundering. From our calculations (**Figure 8**) we find that the average risk of money laundering in EU countries in the last eight years is of about 4. The money laundering crimes somehow differ to other types of crimes (such as corruption, shadow economy or tax evasion) because money launderings are more spread in rich countries where big transactions are conducted by rich and highly position situated entities, the so called „white collars", while corruption and shadow economy highly characterize poor countries [9]. Thus, we may see from the graph that the highest risk of money laundering is found in developed countries (Luxembourg, Greece, Italy, Germany, Austria) while the lowest risk of money laundering is found in Central and Eastern European countries such as Estonia, Slovenia, Lithuania. Although the general average values of AML risk scores are high, we may see a reduction of them in the last eight years, because of the efficiency of anti-money laundering regulations. However, in Romania, the risk of money laundering has started to increase since 2016 (**Figure 9**). Similar results at EU level are found by Cotoc (Bodescu) et al. [24] in their study conducted for several EU countries. They find that the number of suspicious transactions reports (STR) received by anti-money laundering national bodies and the volume of amount suspended, frozen or seized increased in the last period of time, as an effect of European Union measures and transposition of these within national laws.

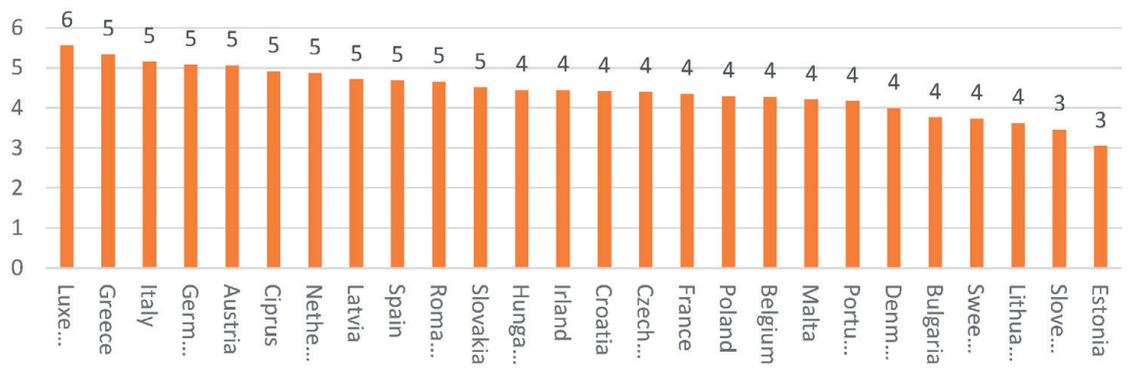

Figure 8.
The risk of money laundering in European Union countries, in average for the period 2012–2020. Source: Own calculations based on Basel AML index [23].

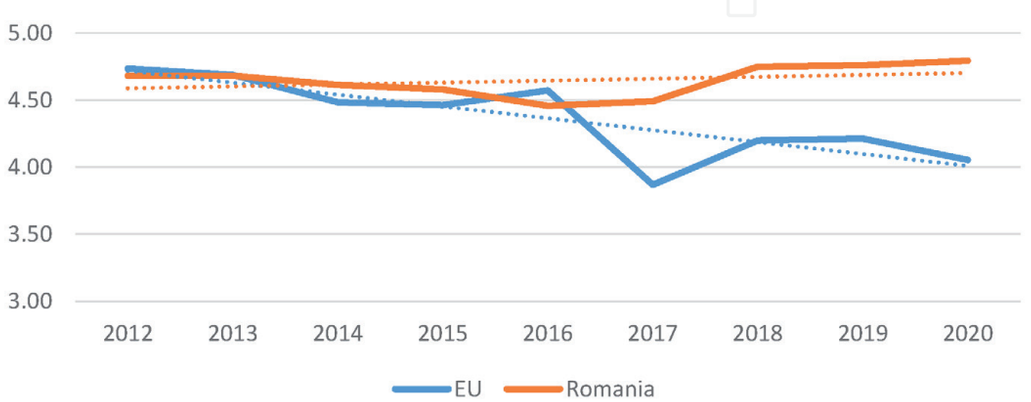

Figure 9.
The evolution of the money laundering risk in the European Union countries, 2012–2020. Source: Own calculations based on Basel AML index [23].

2.6 Cybercrime

Within the digital economy the economic and financial crimes face new dimensions under the form of cybercrime. According to the Digital Economy Society Index determined by European Commission [25], all the five components of digital economy have increased on average among the EU countries. We refer to connectivity, human capital, use of internet, integration of internet technologies and digital public services. Over the past years, all the EU countries have improved their digital performances. However, many gaps are still found between the two blocks: Central and Eastern European economies and Western economies. According to the data from the Digital Economy Society Index provided by European Commission [25], Finland, Sweden, Denmark and the Netherlands have the most advanced digital economies in the European Union while Bulgaria, Greece, Romania and Italy have the lowest level of digitization.

Despite the well-known benefits of digitalization there also are negative consequences for facing the abusive use of technology to generate financial benefits - in the form of **cybercrime.** According to the Global Cybersecurity Index (GCI), an initiative of the International Telecommunication Union [26], Malta, Greece, Romania, the Czech Republic and Cyprus are the most vulnerable countries in terms of cyber attacks. The lowest risk of cyber attacks is found in France, Lithuania, Estonia and Spain (**Figure 10**).

Related to cyber attacks, the number of malware applications developed in the last 10 years has highly increased (according with the data of [27]).

Cybercrime has been counteracted over time by investments in IT equipment in order to be protected against these risks. This statistic shows the global spending on cybersecurity during the last 4 years. In 2019, the spending in the cybersecurity industry reached about 40.8 billion U.S. dollars, with forecasts suggesting that the market will reach 43 billion by 2020 as the best-case scenario, taking into account the coronavirus' (COVID-19) impact.

Concerning the perceptions about the development of cybercrime risks in the European Union, according to a recent study conducted by the European Commission [28], 76 percent of respondents stated that they agree with the following statement: "Do you believe the risk of becoming a victim of cybercrime is increasing?"

Similarly, according to a big study conducted by the European Union Agency for Fundamental Rights [29], more than one in two people in the EU (55%) are

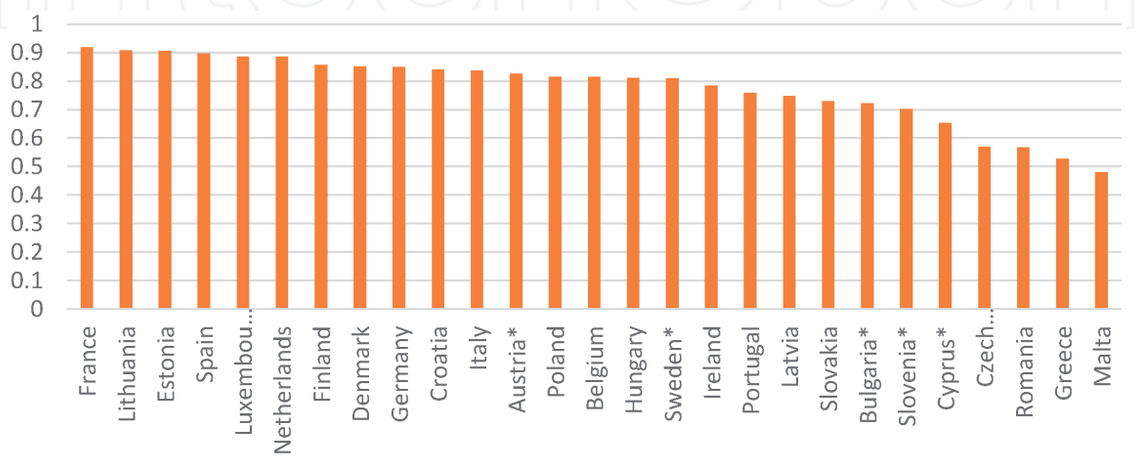

Figure 10.
Global cybersecurity index in European Union countries, 2018. Source: Own calculations based on global cybersecurity index provided by international telecommunication union [26].

concerned about their online data – the information they share on the internet/social media – being accessed by criminals and fraudsters. According to the same study, one in four people in the EU (24%) are very worried about the unauthorised use of their online bank account or credit/debit card details in the following 12 months. In addition to that, 6 of 10 persons are very to somewhat worried about these risks.

Regarding experiencing cyberharassment and in-person harassment, the same previous study shows that 1 in 7 people in the EU (14%) have experienced cyberharassment in the five years before the survey. Nevertheless, experiencing in-person harassment remains more common than cyberharassment. However, the highest percentages of online harassment are registered in France, the Netherlands and Austria (58%, 55% and 53% respectively). At the opposite pole, registering lower levels of cyberharassment and in-person harassment, Hungary, Cyprus, Italy, Poland, Malta, Romania and Bulgaria are found. We may note that within the developed countries where human rights are more valuable, the levels of cyberharassment and in-person harassment are significantly higher than within the developing countries where the human rights are less valuable. According to ACFE [17], in the context of the COVID-19 pandemic, the cybercrime risk registers a significant increase. In May 2020, 45 percent of respondents reported a significant increase in cyber fraud risk. Additionally, 60 percent of respondents expected a significant increase in cyber fraud risk over the next 12 months.

When we analyse the average cost of cybercrime by domains in 2020, we find that the highest value of cybercrime cost is registered in healthcare (about 7.13 mil $), followed by the energy, financial and pharmaceutical fields, while the global average cost of a data breach is 3.86 million U.S. dollars [27].

What motivates hackers? According to the 2020 Hacker Report provided by Hackerone [30] more than a half of cyber-attacks (about 53%) are financially motivated while only 13% have an interest to the national state. However, when we talk about the average cost of cybercrime, the cyber attacks towards the national state face the highest cost (4.43 mil $), followed by the other reasons.

2.7 Financial frauds

In the view of the aforementioned, one of the main reasons of the hackers is related to getting financial benefits which could be in the form of thefts from

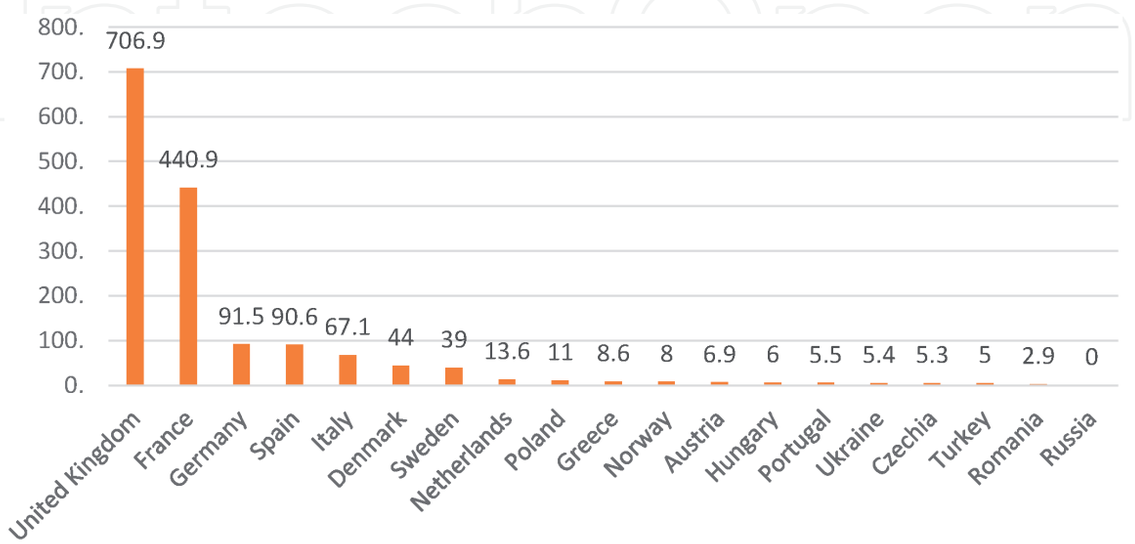

Figure 11.
Card fraud losses in Europe in 2019, by country (total values, in million euros). Source: Own calculations based on data provided by fair Isaac Corporation [31] https://www.fico.com/europeanfraud/regional-shifts

customers' bank accounts. Regarding the total value of card fraud losses in Europe, the United Kingdom holds the first position (with 706.9 million euros) followed at a fairly long distance by France (440.9 million euros) and then Germany and Spain (with about 91 million euros) (**Figure 11**).

Romania has a very small level of card fraud losses compared to the other EU countries. However, when we check for the evolution of the value of card fraud losses there is a significant increase year after year. Actually, the value of card fraud losses has doubled in the last 5 years and achieved the value of 2.85 millions euros [27].

All in all, the general rate of economic crimes in Romania is 42% in 2018, meaning that 42% of the companies have been victims of at least one fraud in the past period [32].

3. The relationship between economic and financial crime and economic development

3.1 Data and methodology

Our sample covers the European Union 27 member states (EU-27) at present. The *Gross Domestic Product per capita (GDP)* is used by this paper as an economic development proxy, following various research works [9, 33]. These prosperity levels, corresponding to per capita GDPs of EU-27 countries are provided by World Bank Group [34] for the 2005–2019 time period. According to the latest classification of countries and lending groups provided by World Bank Group [34], all EU-27 countries are classified as developed countries (high-income countries), the latest added to this privileged category being Romania and Bulgaria. Further on, *the Human Development Index* (*HDI*) comprises three key dimensions of human development: a long and healthy life, knowledge and having a decent standard of living, aggregated within a composite index through their geometric mean, according to UNDP [35]. It has been previously used as a proxy for sustainable development by Murshed and Mredula [36]. The most recent data on the HDI comprised by our study cover the 2005–2018 time interval.

Our financial and economic crime proxies include *Corruption*, *Shadow Economy*, *Money Laundering* and *Cybercrime*. The perceived levels of *Corruption* in the public sector are taken from the latest report of the Corruption Perceptions Index (CPI) provided by Transparency International [19]. Our study particularly deals with countries' rankings, generally ranged from 1 (lowest level of corruption) to 180 (highest level of corruption), selecting the EU-27 member states only, for the 2005–2019 time period. Furthermore, *Shadow Economy* is considered from the data provided by Medina and Schneider [20] for the 2005–2017 time period, throughout which it is calculated as a percentage of the official GDP. *Money Laundering* statistics cover the 2012–2020 time period. *Cybercrime* data reflect its 2018 values, extrapolated to the entire time frame.

The summary statistics for our independent and dependent variables are presented within **Table 1**, for our entire sample of 27 European Union countries, for the 2005–2020 available data. The average GDP of the EU in current US dollars is 32355.59, with the largest values attained in Luxembourg and the lowest values attained in Bulgaria and Romania. Romania and Slovakia have the lowest HDIs in the last reported year, while Germany, Ireland and Sweden lead in sustainable development. From the point of view of the financial and economic crime analysed proxies, the countries with the least developed such undesirable phenomena are Denmark, Austria and Estonia, while the countries with the highest economic crime levels are Bulgaria, Greece and Lithuania.

Variable	Mean	Std. Dev.	Min	Max	Observations
GDP	32355.59	21790.3	3899.908	118823.6	N = 405
HDI	0.863824	0.041065	0.75	0.942	N = 392
Corruption	34.3284	22.00019	1	94	N = 405
Shadow Economy	17.26011	6.072792	6.4	31	N = 351
Money Laundering	4.36428	0.789174	1.78	6.78	N = 243
Cybercrime	0.775741	0.120259	0.479	0.918	N = 432

Source: *Own calculations in Stata.*

Table 1.
Summary statistics of dependent and independent variables.

The underlying relationships between the development proxies on the one hand and the financial and economic crime proxies on the other hand may be depicted from the graphical representations of one against each other from **Figure 12** that also contain the linear fit of data.

Table 2 projects the correlation matrix between our variables. In order to fulfil the basic assumptions of multivariate data analysis through regression modelling, most variables are used with their natural logarithmic transformation [37], except for the Money Laundering variable. One may easily notice the indirect relationship that exists between GDP and HDI on the one hand and Corruption and Shadow Economy respectively on the other (negative correlation coefficients) and then the direct relationship that exists between GDP and HDI on the one hand and Money Laundering and Cybercrime respectively on the other (positive correlation coefficients).

Our unbalanced panel data are modelled through simple regressions, using the Pooled OLS method, in order to estimate the impact of financial and economic crime proxies upon the economic and human development. The resulting log–log and log-linear models have the following baseline equation:

$$\textbf{Development}_{it} = \beta_0 + \beta_1 \textbf{Financial and economic crime}_{it} + \varepsilon_{it} \quad (1)$$

where: $Development_{it}$ – proxy for the development dimensions of country i in year t; it includes:

GDP_{it} – the per capita current USD gross domestic product of country i in year t *and.*

HDI_{it} – the human development index of country i in year t;

β_0 - intercept;

β_1 - linear effect parameter;

Financial and economic $crime_{it}$ – proxy for the financial and economic crime dimensions of country i in year t ($Corruption_{it}$, Shadow $Economy_{it}$, Money $Laundering_{it}$, $Cybercrime_{it}$);

ε_{it} - the prediction error.

3.2 Results and discussions

The results have been synthesised within **Table 3**. Basically **Table 3** contains the estimations of the GDP economic prosperity proxy as a function of financial and economic crime proxies: the independent variables are, on turn, Corruption in model (1a), Shadow Economy in model (2a), Money Laundering in model (3a) and

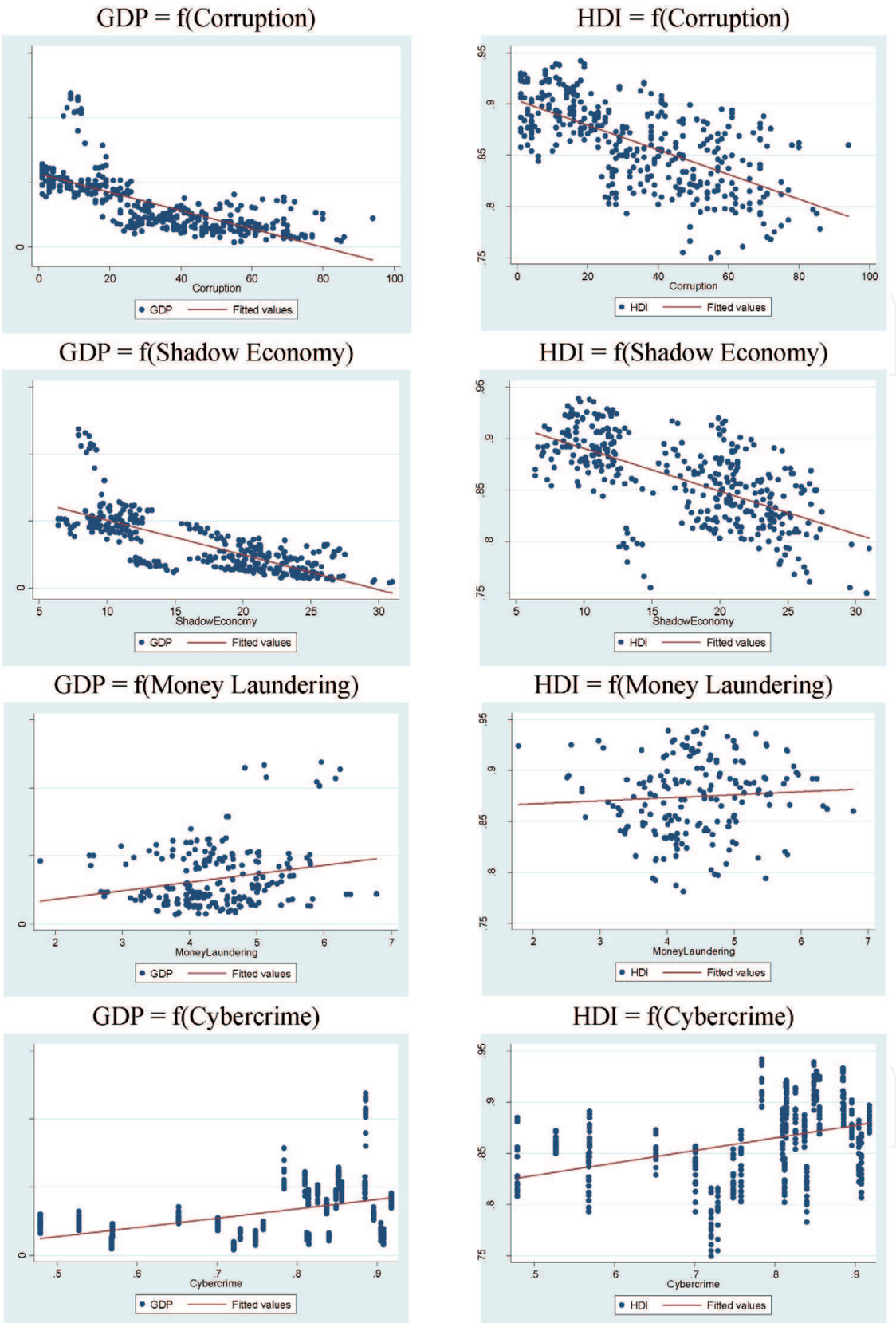

Figure 12.
Economic and human development as a function of financial and economic crime proxies. Source: Authors' processings.

Cybercrime in model (4a). In the same manner, **Table 3** contains the estimations of the HDI as a function of financial and economic crime proxies (models (1b)-(4b)). Except for models (3a) and (3b) which are log-linear models, all the other models are log–log models. As such, models (1a), (2a), (4a), (1b), (2b) and (4b) are

	Log GDP	Log HDI	Log Corruption	Log Shadow Economy	Money Laundering	Log Cybercrime
LogGDP	1					
LogHDI	0.7465	1				
LogCorruption	−0.726	−0.6429	1			
LogShadow Economy	−0.7665	−0.5988	0.6425	1		
Money Laundering	0.1912	0.0745	0.2104	−0.1386	1	
Log Cybercrime	0.3704	0.3434	−0.4273	−0.3897	−0.092	1

Source: *Authors' processings.*

Table 2.
Correlation matrix.

commonly referred to as *elastic* and the coefficients of financial and economic crime proxies are referred to as *elasticities* [38]. Basically we want to estimate the impact held by various financial and economic crimes' proxies upon economic prosperity (**Table 3**) and human development (**Table 3**).

By simply comparing the estimated coefficients from **Table 3**, one may easily notice that the absolute values from **Table 3** are larger than the ones from **Table 3**, thus we somehow expect a more pronounced impact of the vector of financial and economic crime proxies from Eq. 1 upon the economic development than upon human sustainable development.

For log–log models, the interpretations are considered as an expected percentage change in development when the financial and economic crime proxy increases by some percentage. For model (1a) in terms of effects of changes in Corruption on GDP (both unlogged) we have that multiplying Corruption by e will multiply the expected value of GDP by $e^{-0.4577}$. In other words, a 1% increase in Corruption multiplies GDP by $e^{-0.0045}$, so actually GDP is reduced by 4.6%, everything else unchanged. The effect of Corruption upon human development is estimated through the simple regression modelling from model (1b): a 1% increase in Corruption multiplies HDI by 0.9997, so actually HDI is reduced by 0.03%, everything else unchanged. So, corruption on the one hand and economic and human development on the other are indirectly related, the decrease in corruption having positive effects upon development.

The impact of shadow economy upon development proxies is estimated through models (2a) and (2b). As such, the −1.3301 elasticity from model (2a) (**Table 3**) gives that a 10% increase in Shadow Economy multiplies GDP by 0.8809, so actually we get an 11.91% reduction of economic prosperity. In a similar manner, a 10% increase in Shadow Economy reduces HDI by 7.01%, everything else unchanged, from model (2b) (**Table 3**). As expected, the more shadow economy evolves, the less developmental benefits it brings. All in all, the negative effect of corruption and shadow economy upon economic prosperity and human development is validated, with a stronger impact upon economic development.

Model (4a) estimates the effect of cybercrime upon development. Multiplying Cybercrime by $e \approx 2.72$ multiplies GDP by $e^{1.3342} = 3.7969$, i.e. increases the expected GDP by about 279.69%. Further on, model (4b) estimates the multiplicative changes in both Cybercrime and HDI: multiplying Cybercrime by e multiplies HDI by 1.0967, i.e. increases the expected HDI by about 9.67%. The graphical representations and the correlation coefficients depicted a direct relationship between the

Table 4a Results of Pooled OLS estimation of GDP as a function of Financial and Economic Crime Dependent variable: GDP per capita					Table 4b Results of Pooled OLS estimation of HDI as a function of Financial and Economic Crime Dependent variable: HDI			
Variables	**Model (1a)**	**Model (2a)**	**Model (3a)**	**Model (4a)**	**Model (1b)**	**Model (2b)**	**Model (3b)**	**Model (4b)**
Log Corruption	−0.4577 ***				−0.0268 ***			
Log Shadow Economy		−1.3301 ***				−0.0738 ***		
Money Laundering			0.1359 **				0.0034	
Log Cybercrime				1.3342 ***				0.0923 ***
Constant	11.6291 ***	13.8483 ***	9.6121 ***	10.5302 ***	−0.0639 ***	0.0536 ***	−0.1502 ***	−0.1247 ***
R squared	0.5133	0.5934	0.0294	0.1207	0.3410	0.3655	0.0042	0.1119
Adjusted R squared	0.5120	0.5922	0.0249	0.1185	0.3393	0.3637	0.0012	0.1096
N	405	351	216	405	378	351	189	378

Source: *Authors' processing.*
*Note: Within parentheses there are the p-values and *** designates the 1% significant coefficients, ** designates the 5% significant coefficients and * designates the 10% significant coefficients.*

Table 3.
Simple regression modelling.

evolution of cybercrime and that of development proxies. That direct correlation is validated by out tabled coefficients: cybercrime and both economic and human development move in tandem, like a hand in hand walk. It seems that the more developed the economic conditions are and the more evolved people have become, cybercrime is conferred a boost, especially in the last years.

Nonetheless, the interpretation of the log-linear model (3a) (**Table 4**) is the following: each one unit increase in Money Laundering increases LogGDP by 0.1359. For the untransformed GDP, each one unit increase of Money Laundering increases economic prosperity by a multiple of $e^{0.1359}$ = 1.1456 or a 14.56% increase. Then, model (3b) provides the following estimation: each one unit increase of Money Laundering increases human development by a multiple of 1.0034, that is a 0.34% increase. Thus, there's a direct relationship between money laundering and development, just like between cybercrime and development. Somehow, money laundering has a positive effect on prosperity, both economic and human, influencing it directly. We have not tested for causality as this was not our research purpose, but money laundering moves just like development does.

4. Conclusions

This study brings a detailed insight on the evolution of the dimensions of the financial and economic crimes, with an explanatory approach of the top of frauds, corruption, shadow economy, money laundering, tax evasion with an emphasis on VAT lost revenues, cybercrimes as reflected by the Global Cybersecurity Index, malware and data breaches and card fraud losses, closely related to the specialised literature in this field. Our explanations and interpretations cover both the absolute values and the dynamics of these unwanted phenomena, for the particular situation of European countries, with a slight emphasis on Romania.

Our empirical analyses cover the EU member states and throughout the time frame of the last 15 years, the impact of the vector of financial and economic crime proxies upon the economic development measured as per capita GDP has proved to be stronger than their impact upon HDI as a proxy of sustainable human development. Nonetheless, in accordance to the reviewed literature, for our sample of European Union countries, corruption and shadow economy are indirectly related to their vector of development proxies while the money laundering and cybercrimes of the "white collars" are directly related to the vector of development proxies we study. All in all, reducing the shadow economy and corruption must be a top priority for governmental policies towards achieving economic development. According to our findings, their impact upon development is negative, so strict measures should be applied through various public policies in order to limit the flourish of corruption and shadow economy. Public private partnership agencies or private entities could also focus on diminishing corrupt behaviours and situations and reducing shadow economy phenomena, in order to obtain benefits in the fields of economic prosperity and societal wellbeing. Nonetheless, our estimations support a positive effect of cybercrime and money laundering upon development and the explanation resides in the boost registered by these undesired financial and economic crimes due to technological progresses and digitization. Also, highly skilled professionals might find it easy to engage in such activities. We consider that these actions and digital processes should be strictly monitored and regulated. The main policy implications of this research refer to the awareness of the level of economic and financial crime by the government authorities from the European countries in order to find the proper solutions to diminish it. These solutions should concern at least the following areas: improving the level of financial education of citizens in order to improve

fiscal morality; improving the efficiency of recovery of the proceeds of crime while this level is still low; and increasing the degree of digitalization in public institutions, including the tax administration.

One of the limits of our study is related to the lack of data for a longer period, especially regarding the variables associated with digitization and cybercrime while these phenomena are relatively recent. Our data are the most recently available ones but they are still somewhat limited, not always covering the entire 2005–2020 time interval. For the future we intend to surpass these limits through the use of exploratory factor analysis on the multiple interrelated facets of the financial and economic crime phenomena, in order to have the conceptually defined dimensions further aggregated as newly derived factors. Furthermore, for a larger dataset of analysed countries, once we are able to enlarge our cross-sectional dataset, cluster analysis would help us form similar groups, on certain algorithms and probably obtain some interesting conclusions.

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Author details

Monica Violeta Achim[1*], Sorin Nicolae Borlea[2,3,4], Viorela Ligia Văidean[1], Decebal Remus Florescu[5], Eugenia Ramona Mara[1] and Ionut Constantin Cuceu[1]

1 Babes-Bolyai University, Faculty of Economics and Business Administration, Finance Department, Cluj-Napoca, Romania

2 University of Oradea, Faculty of Economics, Doctoral School, Oradea, Romania

3 Western Vasile Goldis University of Arad, Faculty of Economics, Informatics and Engineering, Department of Economics, Arad, Romania

4 Babeș-Bolyai University, European Research Institute, Cluj-Napoca, Romania

5 Babes-Bolyai University, Faculty of Political Science, Administration and Communication, Journalism Department, Cluj-Napoca, Romania

*Address all correspondence to: monica.achim@econ.ubbcluj.ro

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