



THE EFFECTS OF ACCOUNTABILITY, GOVERNANCE CAPITAL, AND LEGAL ORIGIN ON REPORTED FRAUDS

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Abstract. An institutional perspective is employed to illuminate the complexity of frauds in various diverse economies, in order to enhance the efficacy of previous accounting concepts. In this study, the effects of the legal, regulatory and human framework of the strength of auditing and reporting standards, and the governance capital related to global sustainable competitiveness and economic growth, etc. are analysed by linear regression (OLS) methods. Moreover, the role of other indicators i.e. financial freedom, the extent of director liability and legal origin, are interrelated with the number of fraud cases. From the results, it appears that an increased level of governance capital, financial freedom from government pressure, strengthened transparency and more protected minority investors through liable directors might increase the number of reported fraud cases in the countries and years examined. The existence of legal origin also seemed to be an appropriate proxy for an improved understanding of fraud characteristics. This evidence suggests it is worth investigating in depth the nature of financial crimes across countries for a better understanding of this phenomenon. In this way, these findings might have sufficient potential in the case of adequate policy implications within a less litigious business environment to resolve the undesirable consequences of impending financial downturns, and to achieve sustainable competitiveness and economic development.

Keywords: sustainable governance capital, private institutions, legal origin, fraud, cross-country analysis, accountability.

JEL Classification: C31, E02, M41, O43, Q56.

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Introduction

Fraud generally refers to any deliberate act or omission designed to cheat others which results in the victim suffering damage or the perpetrator gaining an advantage (European Court of Auditors, 2017). Nevertheless, fraud also includes any deliberate act which deprives people of their property by guile, deception, or other prejudicial means (ACFE, 2016). Meanwhile, there is a constant gap between detected and hidden cases, where fraudulent activity is suspected but not proven. Because of its nature, it is complicated to measure the level of fraud. Fraud cases are unique and are sometimes described as “snowflakes” in that none of them are similar, and each one has to be treated as a distinct event (Singleton & Singleton, 2010).

However, frauds can be explicitly understood using the notion of general deviant behaviour or antisocial attitudes (Morales, Gendron, & Guénin-Paracini, 2014). A person committing any financial crime, e.g. asset misappropriation, financial statement manipulation, earning management, or unfair executive compensation, can break the law or violate the trust of business partners (Becker, 1963). Moreover, contrary to the explanation of white-collar crime as an act of individuals, an extended discussion of fraud includes the internal organizational environment (micro-sociological) and external (macro-sociological) factors (Free, 2012). This perspective involves a socio-political view of fraud, as a violation of rules that society considers appropriate.

The development of the conceptual framework of fraud broadens its micro (perpetrator-centric) focus by elaborating macro-level reasoning, and encompassing the business environment which can affect its (non)occurrence. This point of view is believed to be more reliable in understanding perpetrators' motivations and designing deterrence and control (Mailley, 2015). Consequently, reported fraud cases do not occur in isolation. Instead, the process of detection and deterrence from individual to firm and institutional level, as the firm performs its responsibilities to stakeholders, is also taken into account (Bradshaw, 2014).

Although Furlan, Vasilecas, and Bajec (2011) express doubts that international comparison will ignore the specifics of the local business environment, the previous empirical results make it possible to determine the objective of enterprise development, quantitative and qualitative strategies, accounting (IFRS) standards, etc. for industry leaders (Korzh, Mostenska, & Bilan, 2017). Klietkova, Misankova, and Klietk (2017) also concluded that the existing research into legal systems in the context of sustainable social development has shown that there is a correlation between the quality of insolvency law and the dynamic of the economic development of society.

Meanwhile, there is still a dearth of theoretical and empirical explorations of links between financial reporting misconduct and macroeconomic circumstances, with different results. However, economic crises directly affect the reporting quality of organizations (Povel, Singh, & Winton, 2007). Thus, the internal monitoring mechanism of firms is also shaped by external frames, i.e. by the rule of law, enforcement agencies, and financial reporting practices (Amiram et al., 2018).

This research study aims to contribute to the literature by discussing the theoretical foundations of fraud by applying the already existing and somewhat outdated Fraud Triangle, Fraud Diamond and Planned Behavioural theories and then investigating the effectiveness

of these perspectives by taking into consideration the further ideas of New Institutional Economics and the view of the American Dream Theory of financial crimes. The significance of this perception is that it enables to describe the complexity of accounting frauds in various countries, and is compatible with the trends observable in international efforts to improve the success of forensic accounting. Moreover, fraud is a multidimensional phenomenon, which may not necessarily be related to a genuinely “all-inclusive” theoretical framework (Lokanan, 2015). Malíková and Brabec (2012) also highlighted the role of accounting legislation in different countries and the influence of macroeconomic factors on financial statements.

The rest of this paper is structured as follows. The next section briefly reviews the conceptual evolution of forensic fraud literature. In the third section, the characteristics of various institutional and control variables are also described. In the following section, linear regression (OLS) analyses are carried out with cross-country data in order to analyse how accountability, governance capital, legal origin, financial freedom from government control, etc. can influence the number of fraud cases. After considering policy implications, brief conclusions are summarized in section 5. Finally, suggestions for further research are outlined from this perspective, i.e. research related to attempts to enhance the quality of sustainable governance across different states for the enhanced detection of financial crimes over time.

1. Theoretical framework

In this theoretical section, numerous conceptual frameworks are investigated, in order to understand why the unethical behaviour of managers leads them to commit business fraud. Besides the complementary concepts of the Fraud Triangle, the Extended Diamond, and the Theory of Planned Behaviour, in this paper, the new institutional economics approach will be integrated to explain the background of corporate accounting frauds.

The origin of the Fraud Triangle Theory (FTT) arose in the study of Sutherland and Locke (1936), in which the notion of “white-collar” crime was first defined. This idea was later developed and discussed by Cressey (1953), who argued that each fraud case has at least three mutual features used to identify it. One of the fundamentals of the FTT is the opportunity available to employees to commit fraud. The second is pressure, which is often the core reason why some people tend to steal and others do not. The incentives to theft can include private debt, business losses, and pre-existing ethical standards. The final element of the triangle is the rationalization (attitude) adopted by the perpetrator to justify the crime. These three conditions are generally present when frauds occur (ACPAA, 2002). The Financial Statement Audit, Section 99 of Statements on Auditing Standards (SAS) provides directions for auditors when ensuring the accountability of an audit to obtain sound declarations regarding financial statements.

The most frequent factors which lead to an increased risk of fraud are identified by Cohen, Ding, Lesage, and Stolowy (2010). The incentive (pressure) is the result of a high degree of competition to obtain balanced debt or equity financing. Thus, the profitability expectations of institutional investors and other parties are also highlighted, along with the presence of financial interests related to the stock price, the financial state of the firm or cash flow forecasts, etc. The opportunity element arises from an ineffective board of directors or audit

commission, the dominance over management by a small group and dominant financial presence in, or ability to control, an industrial sector, etc. The rationalization element is based on an excessive interest (attitude) on the part of the management in enhancing stock prices, or the directors' practice of requiring that unrealistic predictions be achieved.

The original Fraud Triangle concept has been augmented by fraud prevention and detection. In the Fraud Diamond Theory (FDT), individual "capability" was added as an extra element to the three initial elements (Wolfe & Hermanson, 2004). However, the existence of skills and distinct abilities are not merely a matter of specific circumstances; a perpetrator should also have the specific personality traits needed to commit fraud. Rudewicz (2011) identified that an individual's position or function within the organization may provide an opportunity for fraud. In addition, the fraudster must be intelligent enough to recognize – and creative enough to exploit – internal flaws of control and has authorized access to use to his/her advantage. The individual should also have a resilient ego and self-confidence, driven by the failure to detect all activities. Thus, a fraudster can coerce others to go along with fraud by his/her credible behaviour. Finally, in order to avoid fraud detection, convincing lies and factual stories are offered to distract from the fraudster's behaviour. These experimental models have been criticized because they do not provide a complex phenomenon but only a single and limited physiological aspect of the primary perpetrator of the deception (W. S. Albrecht, C. Albrecht, & C. C. Albrecht, 2008).

Another complementary theoretical outlook, the Theory of Planned Behavior, intends to understand potential managers' unethical behaviour as observed in fraud cases. The attitudes (rationalization) corner of the Fraud Triangle and Diamond is perhaps the most important element for auditors to assess. The TPB is an extension of the original "Theory of Reasoned Action", which only included the elements of attitude and subjective norms (Fishbein & Ajzen, 1975). The additional dimension of the TPB - emphasizing the role of intentions - involves behaviours of different kinds that can be anticipated with a high degree of accuracy from attitudes toward behavioural and subjective norms and perceived control, and the exact nature of these relationships (Ajzen, 1991). From this socio-psychological perspective, an attitude refers to the degree to which an individual has a (un)favourable evaluation or appraisal of the behaviour in question (Bailey, 2006). Beck and Ajzen (Beck & Ajzen, 1991) related the TPB to the prediction of dishonest actions by personal feelings of moral obligation or behavioural norms. The range of fraud behaviour theories has been integrated by Cohen et al. (2010), and their analysis suggests that personality traits appear to be a major individual fraud-risk factor. However, Gillett and Uddin (2005) find that the extended TPB model describes the intentions of fraudulent reporting worldwide.

As a result of the lack of consensus in the literature regarding the causes of fraud, there is no reason to rely on fraud triangle, diamond or any existing behavioural, etc. model being able to explain the occurrences of corporate frauds (Lokanan, 2015). Because of the extensive nature of fraud, auxiliary approximations need to be presented that can support international judgements in order to expand the efficacy of the concepts discussed.

In order to demonstrate further insights into fraud theories, researchers are required to emphasize in detail not only the distinct influences which support fraud but also other economic, financial and social issues (Free, 2015). The social-economic dimensions (economic,

political and cultural) of the activity are implicitly included in the context of the institution and society that gives structure and meaning to fraud (Fairclough, Graham, Lemke, & Wodak, 2004). Cieslewicz (2012) also stated that fraud is a global phenomenon and differs across countries. Others also prefer to combine psycho-, socio- and criminological theories. Ramamoorti (2009) announced the so-called Bad Apple, Bad Bushel, or Bad Crop Syndrome (ABC) of white collar crime to appreciate the incidence of fraud from a contextual perspective. These insights imply a multidisciplinary paradigm for research, such as the individual personality characteristics of those who commit fraud, the group dynamics of collusive behaviour and the larger cultural-societal (macro) factors that enhance or permit crimes.

Moreover, Choo and Tan (2007) clarified the theoretical background of corporate executive fraud by relating the fraud triangle to the concept of the American Dream Theory (ADT). The ADT of crime is based on the idea that incentives for crime do not only derive from the flaws, failures, or free choices of individuals (Messner & Rosenfeld, 2013). A broad explanation of law-breaking must be considered by understanding the socio-cultural environments of people's daily lives. The outcome is a pronounced strain toward institutional anomie, with a tendency for social norms to lose regulatory force. Recent challenges to one of the main premises of American exceptionalism concerning high rates of serious crime are an ordinary result of U.S. social institutions and cultural beliefs. Hence, the lack of norms, as a pre-accepted bound on conduct in a society, can lead to executive fraud cases. In this perspective, four social institutions are distinguished, i.e. the family, the education system, the polity (political system), and the economy. The family undertakes the responsibility for the care of reliant persons and provides emotional support. The education system transmits knowledge to prepare the young for the demands of occupational roles. The polity protects members of society, allowing them to attain collective goals, and the economy supports the production and distribution of goods and services. A better understanding of corporate executive fraud is possible by involving three crucial features of the American Dream Theory: intense emphasis on monetary success, corporate executives disregarding regulatory controls, and corporate executives justifying (rationalizing) fraudulent behaviour that supports the occurrence of serious crime at a higher rate than in other developed countries (Choo & Tan, 2007).

The nature of institutions in economics has been the focus of New Institutional Economics (NIE). In this perspective, institutions are the human-devised constraints on interaction, which are made up of both formal (rules, laws, constitutions) and informal constraints (norms of behaviour, conventions, self-imposed codes of conduct), and their enforcement characteristics (North, 1994). However, although much empirical research in the social sciences has examined the influence of institutions, no clear conceptual consensus seems to exist on what kind of characteristics and effects they have in relation to accounting fraud. In recent years, attention has been focused on the concept of coercing, as one form of political institution that reliably requires the state to honour economic and political rights (Weingast, 1995). Moreover, "...the concept of freedom demands no more than that the coercion of supplementary individuals' coercion and violence, fraud, and deception, etc. needs to be prevented. An exception [is made] for the use of coercion by the government for the sole purpose of enforcing known rules intended to secure the best conditions under which the individual may give his activities in a coherent, rational pattern ..." (Hayek, 1960).

In addition, private enforcement is one of the major areas in which the law seeks to regulate the approval process (Djankov, Porta, Lopez-De-Silanes, & Shleifer, 2008). From this perspective, the courts can void a transaction when an agreement is fraudulent, merely unfair, made in bad faith, or involves a conflict of interest and harms the corporation's financial situation. The state of financial market development is another important factor encouraging transparency. Zysman (1983) claimed that a developed stock market needs resilient auditing and reporting standards. According to El Ghouli, Guedhami, Pittman, and Rizeanu (2016), the role of the choice of an auditor in debt maturity is concentrated in companies from states with superior legal institutions governing property and creditor rights. Others have also suggested that experts within the accountancy profession are responsible for adjustments in the strength of auditing and reporting (Nobes, 1983). On the other hand, Hronsky and Houghton (2001) argued that the more experienced the accountants of a country, the more durable will be the strength of auditing activities and the more likely frauds are to be reported. Meanwhile, corporate ethics and accountability can underlie the strength of the private infrastructure by specifying the credibility of the features of financial statements (Boolaky, Krishnamurti, & Hoque, 2013).

H1: A higher level of auditing and accounting standards is positively related to reported fraud cases.

Additionally, firms with sustainable business practices will be more expected to cooperate with the societies in which they operate. Consequently, the concept of corporate sustainability indirectly includes the capable management of the social, environmental and economic aspects of the business. It includes balancing stakeholder expectations with assessments of social and environmental risk, the adoption of practices and behaviour, and the ability to produce perceived levels of quality products and services. In this sense "Governance for Sustainability" confirms appropriate management practices by harmonizing the expectations of society (Santos, Barbosa, & Gai, 2010). The environmental framework in which society exists and businesses operate is developed, maintained and updated by authorities and institutions, most often government bodies. The effectiveness of "sustainable" governance capital is a reflection of the economic, historical and legal background of a country, as well as of that of the business environment. The distinctive characteristics of sustainability that need to be managed are bribery and corrupt practices, which apply to all of a firm's employees, as well as all activities related to the importance of business ethics.

H2: The increased level of governance capital is positively associated with reported frauds.

Nevertheless, the objective of economic freedom is not merely an absence of government coercion or control, but the preservation of a mutual sense of freedom (Miller & Kim, 2014). A prudent and efficient financial regulatory system ensures - via disclosure requirements and sovereign auditing - the transparency and integrity of forensic information. From this standpoint, the enforcement of law maintains the appearance of integrity by offering credible financial reports or testimony (M. Friedman & R. Friedman, 1980). Meanwhile, centralized financial regulation of the regime can weaken the pledge of transparency and reliability in financial markets and also impede their efficiency by limiting the effects of competition.

From this point of view, comprehensive studies of the literature have demonstrated that public and private institutions influence the transparency of auditing and reporting by including the governance, economic, legal and social infrastructure (D. F. Meyer & N. Meyer, 2017).

H3: Advanced financial freedom results in an increased number of reported fraud cases.

David and Brierley (1985) argued that the nature and effectiveness of a nation's legal origin impacts on the regulatory system of accounting. The strength of the regulation of self-dealing in the common law countries (i.e. those with an Anglo Saxon legal system) is based on the sensitive inspection of transactions involving related parties before approving them, rather than favouring litigation by minority shareholders (La Porta, Lopez de Silanes, Shleifer, & Vishny, 2000). Accordingly, the political infrastructure and legal environment can affect the strength of accounting and auditing quality in a country (Doupnik & Salter, 1993). Based on the literature discussion above, the contribution of the strength of auditing to the level of fraud will be analysed in a cross-country perception. Consequently, the current study forms the following hypotheses:

H4: Common law countries seem to have more reported fraud cases than civil law ones.

2. Data and methodologies

In order to check the validity of the model specifications, it will be simultaneously tested by the samples of fraud cases reported by ACFE in the year 2014 and 2016. The estimations are constructed by Ordinary Linear Regression (OLS) models (Equation 1) with heteroscedasticity consistent and robust (HAC) standard errors, in which the disturbances have the same variance across all observation points (White, 1980). Hence, models do not contain heteroscedastic residuals. The number of fraud cases in logarithm in a country [i] can be described as defined by Long and Ervin (2000):

$$\ln(Fraud)_i = \beta_0 + \beta_1 \ln Auditing_i + \beta_2 \ln Governance_i + \beta_3 \ln Freedom_i + \beta_4 \ln Liability_i + \beta_5 DOrigin_i + \beta_6 DCivil_law_i + \beta_7 \ln GDP_i + \epsilon_i, \quad (1)$$

where, $\ln(Fraud)$ – denotes the number of fraud cases (ACFE, 2016). Enterprises come under stress through numerous economic and financial risks to their success which appear in altered forms and degrees. Cases of fraud are just one of the events that each business entity can suffer. The independent Association of Certified Fraud Examiners has published the Reports to the Nation on Occupational Fraud and Abuse (ACFE) bi-yearly since 1996. For this study, the reported fraud cases have been collated from the two earlier (2014 and 2016) available reports.

$\ln(Auditing)$ – (1 worst – 7 best) is the variable of the strength of auditing and reporting standards (SARS), which is considered a vigorous element of institutional transparency for businesses, stakeholders, and also governments. The international accounting standards (US GAAP and IFRS) play a crucial role in improving the value of transparency and the reliability of auditing at the country level. This variable, as one of the accountability pillars, is based on data collected from the Global Competitiveness Report issued (2014 and 2016) annually by

the WEF (World Economic Forum, 2018). Boolaky et al. (2013) revealed that the institutional infrastructure, i.e. ethical behaviour in connection with public officials, politicians, and other businesses, and the efficiency of the legal framework and corporate boards in challenging regulations, all jointly influence a country's SARS. Consequently, some additional aspects, such as auditors' responsibility for the prevention and detection of fraud, financial market development (the level of sophistication, securities and exchange regulations) and the higher level of educational attainment and training (enrolment and reliance on professional management) are related to the complexity of SARS.

ln(Governance) – the Sustainable Competitiveness Sub-Indices aim to evolve a broader picture of competitiveness that incorporates the essential pillars of an economy to enable sustainable economic growth and wealth to continue (Running, 2014). Governance capital focuses on regulating national development. Besides the given natural capital of a country, society and the economy need to be shaped by the legal, regulatory and human-created framework. Certain aspects of the implications for governments make up the Governance Sub-Index of Sustainable Competitiveness. These include financial stability, corruption, human rights and freedom of the press, etc., which are all aspects that shape the framework of a society, and act as proxies of sustainable competitiveness, to obtain and compare cross-country perspectives. This regulatory and infrastructural framework also provides the natural, social and intellectual capital resources that can be nurtured to generate new resources and sustain existing wealth. According to the observations, Ireland leads in governance rankings (with a score of 68.7, see Figure 1), followed by the Czech Republic; in the last place is Kiribati (22.7). This figure also highlights a clear North-South gap between American and European countries and African countries.

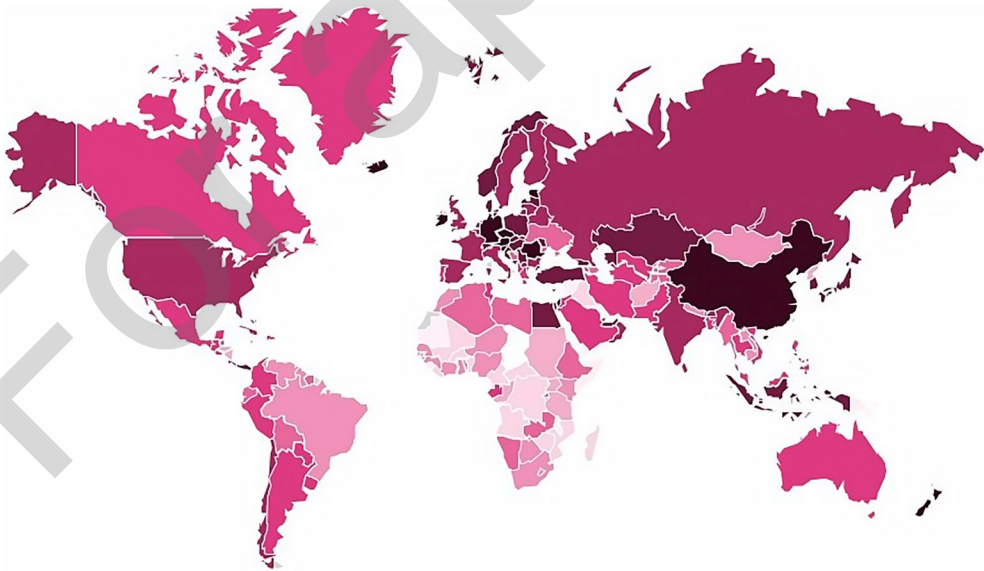


Figure 1. Observations on governance capital extent to global sustainable competitiveness rankings by country in 2016 (source: author's compilation, based on Sol Ability, 2018)

ln(Freedom) – This indicator of financial freedom stands for banking efficiency, as an indicator of independence from government control and interference in the financial sector. The unduly high level of state ownership of banks and other financial intermediaries, such as insurance and capital markets, reduces competition and commonly reduces free access to credit. Preferably, there should be a minimum level of government interference, independent central bank supervision, and the regulation of financial institutions should be restricted to imposing contractual obligations. The aggregate level of financial freedom guarantees efficient access to financial opportunities for both people and businesses in the economy. An overall value on a scale of zero (worst) to 100 (best) is given to financial freedom, although the minimal regulation of financial institutions may extend beyond the prevention of fraud. This index is equally weighted and averaged to produce an inclusive Index of Economic Freedom for each economy and each year examined (2014 and 2016) by the Heritage Foundation (Miller & Kim, 2014).

D(Origin) – embodies the dummy variables that classify the major types of legal origin of each country. Here, the categories of the origins of law are English, French, German, and Nordic, as the control of dummy trap (Central Intelligence Agency, 2016). For instance, 1 = English and 0 = otherwise, etc. The two main types of legal origin are civil and common; mixed law countries are substituted by the *D(Civil_Law)* dummy. 1 = Civil law and 0 = otherwise. Respectively, ε is the requested error term in this model.

ln(Liability) – the control variable of liability is the extent to which minority investors are protected; the director liability index has seven elements and ranges from zero (worst) to 10 (best). A score of 0 is assigned if they cannot be held liable, or can be held liable only for fraud, with higher values indicating a greater liability of directors (Doing Business, 2017). The maximum value implies that derivative suits are available for stockholders holding 10% of share capital; the prejudicial transaction is duly approved and disclosed. Thus, holding other directors liable, a plaintiff should prove that directors acted carelessly and must pay damages and show that they are not required to pay out their profits. These directors will not be fined nor imprisoned and disqualified. Moreover, a prejudicial transaction cannot be voided based on director liability. This sub-index of Protecting Minority Investors is represented by the Doing Business database of the World Bank (World Bank, 2019).

ln(GDP) – denotes the log of GDP (at constant 2010 US\$ prices). This control variable of economic growth (GDP at purchaser's prices) is the amount of gross value added by all resident producers in the economy with product taxes and subsidies not included in the value of the products. This indicator is intended without deductions for depreciation of fabricated assets or the depletion and degradation of natural resources. Data are converted from domestic currencies using the 2010 official US exchange rates in the year 2014 and 2016 (The World Bank, 2019).

3. Results of the regression analysis

Table 1 displays standard descriptive statistics (i.e. mean, median, standard deviation, C.V., and skewness, etc.) of the regression variables. Especially within cross-country specific data, the observations are expected to be independent of the same distribution. Hence, each of the

variables is transformed by a natural logarithm (ln) in order to increase the validity of the associated statistical examinations (Feng et al., 2014).

The influence of the listed independent variables on the number of fraud cases is analysed from a cross-country specific perspective in the regression models. Table 2 and Table 3 denote the consistent results of the approximations (Models 1 to 10) with the heteroscedasticity robust and corrected (OLS) regressions. The significant F-tests statistics are verified on the results of the preferred linear regression models and confirm the robustness of the selected specifications. In the bottom section of these tables, the multi-collinearity amongst the independent variables is tested by the variance of the inflation factor (VIF). The reported values for each coefficient ranged from a low of a minimum of 1.00 to a high of 8.47, suggesting that the VIF values are at adequate levels. In the current study, the normality (χ^2) test of the residuals proved that ($p > 0.01$) the statistics are at an acceptable level.

In each reported case, the association of the strength of auditing is robust and has significant positive t-statistics. These results indicate that the perceived responsibility of auditors positively affects the detection procedures of fraud and exhibits a significant accountability relationship. Hence, hypothesis H1 can be accepted.

An increase in the level of the governance capital variable also tends to increase reported fraud cases. In this perspective, balanced government spending, the availability and quality of public services, and the improved legal framework of business in term of regulation seem to affect reported fraud cases positively. These pieces of evidence suggest it is worth investigating in depth, for example, the quality and the extent of governance to enhanced competitiveness in the case of specific country groups in order to better understand this complex phenomenon. Hypothesis H2 can be accepted.

Meanwhile, financial freedom ratios are also positively correlated (in the year 2014) with fraud. If there is a one unit increase in the level of financial freedom from government control, then the number of reported fraud cases seem to increase. These results are comparable with the results of Sadaf, Oláh, Popp, and Máté (2018). In their study, they established that an increased level of efficient governance – e.g. the perceptions of the quality of public and civil service, the degree of freedom from political burdens, the quality of government policy

Table 1. Descriptive statistics of Equation (1) variables (source: calculations based on ACFE, 2016; Sol Ability, 2018; The World Bank, 2019; World Economic Forum, 2018)

Variables/ Statistics	ln(Fraud)	ln(Auditing)	ln(Governance)	ln(Liability)	ln(Freedom)	ln(GDP)
Mean	1.625	1.539	3.858	1.401	3.931	25.584
Median	1.386	1.538	3.901	1.609	3.912	25.863
Minimum	0	0.901	3.427	0	2.302	20.783
Maximum	6.945	1.898	4.136	2.197	4.499	30.461
S. deviation	1.289	0.184	0.168	0.711	0.415	2.003
C.V.	0.792	0.119	0.043	0.507	0.105	0.078
Skewness	1.034	-0.335	-0.714	-0.946	-1.681	0.026
Ex. kurtosis	1.737	0.254	-0.224	-0.344	3.634	-0.501

implementation, and the credibility of commitment to it - might increase the number of reported fraud cases in various states examined. Hypothesis H3 can be accepted.

The results also indicate that legal origin, as a political institution, is one of the elements examined which similarly affect the number of fraud cases. Although each of the legal origin dummies (English, French, German and Civil Law) were statistically significant (except Model 8), the Anglo-Saxon one was associated with more stated accounting fraud cases than the others. It is in tune with La Porta et al. (2000), who noticed that the UK has conceivably the finest courts in the world, with the best and least unethical judiciaries. Moreover, as theoretically assumed, civil law countries have statistically, and significantly fewer reported fraud cases than the other common and mixed law countries. Hypothesis H4 can be accepted.

Table 2. Outcomes of the heteroscedasticity consistent (HAC) and corrected OLS regressions of Equation (1) in the examined countries in 2016 (source: calculations based on ACFE, 2016; Sol Ability, 2018; The World Bank, 2019; World Economic Forum, 2018)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
<i>Constant</i>	-9.209	-13.11	0.587	-1.992	-0.862	-9.966	-0.836	-9.763	-5.997	-14.11
	-3.13***	-4.93***	3.18***	-1.25	-0.57	-5.18***	-1.01	-7.45***	-2.96***	-5.71***
<i>ln(Auditing)</i>	1.518	0.944					1.885		0.607	1.926
	2.09**	1.66*					3.61***		0.92	3.31***
<i>ln(Governance)</i>	2.219	3.161				3.153			-0.709	3.596
	2.69***	4.41***				6.07***			-0.94	4.81***
<i>ln(Liability)</i>			0.223						0.258	-0.424
			2.16**						1.91*	-1.45
<i>ln(Freedom)</i>				0.674	0.763				-0.405	-0.251
				1.88*	2.05**				-1.23	-1.65
<i>English</i>		1.907	0.993	1.541				1.226		1.891
		4.28***	3.44***	4.15***				2.73***		4.64***
<i>French</i>		0.946	0.464	0.744				0.441		1.041
		2.41**	2.01**	2.51**				1.01		2.84***
<i>German</i>		0.683	0.741	0.892				0.407		0.719
		1.77*	2.44**	3.06**				0.89		2.02**
<i>Civil_law</i>					-0.747	-0.807	-0.556			
					-2.61***	-2.98***	-2.09**			
<i>ln(GDP)</i>								0.419	0.419	
								8.64***	6.41***	
Observations	95	89	95	93	93	93	90	89	95	89
Adjusted R ²	0.154	0.302	0.191	0.137	0.077	0.283	0.174	0.477	0.441	0.463
VIF	1.171	8.457	8.381	8.394	1.031	1.072	1.008	7.833	2.041	8.478
χ^2 test	17.38***	5.61*	10.99***	10.52***	11.54***	8.29**	8.59**	3.74*	3.55*	6.61*
F test	9.58***	8.63***	5.31***	4.66***	4.85***	19.2***	10.3***	21.11***	15.87***	9.98***

Notes: Heteroscedasticity robust (HC) t-statistics are in parentheses. Letters in the upper index refer to significance: ***, significance at 1 per cent, **, 5 per cent, *, 10 per cent. P-values without an index mean that the coefficient is not significant, even at the 10 per cent level.

Otherwise, the extent of directors' liability is also positively associated with the dependent (log of) fraud variables in the linear regression models. From this perspective, an increased level of directors' liability positively affects the number of cases of crime reported. This result may be in accordance with the interests of shareholders who expect a sustained return on their investment (Sutopo, Kot, Adiati, & Lina Nur Ardila, 2018). In addition, the stronger investor protection institutions influence the financial reporting environment in that the market reactions to the stated annual earnings are built into prices (DeFond, Hung, & Trezevant, 2007).

In order to control for the size of countries, the influence of economic growth (log of GDP) was also examined, and the results highlighted that there is a strong relationship between the number of reported frauds and the income level. According to the empirical literature, the GDP and the quality of the legal and accounting systems are inversely related to the level of corruption (Malagueno et al., 2010; Kimbro, 2002, etc.), while more control over corruption might decrease the number of fraud cases (Sadaf et al., 2018). Assuming that corruption is inversely related to the economic growth of a given country, an increased level of income positively influences the number of reported fraud cases.

Table 3. Outcomes of the heteroscedasticity consistent (HAC) and corrected OLS regressions of Equation (1) in the examined countries in 2014 (source: calculations based on ACFE, 2014; Sol Ability, 2018; The World Bank, 2019; World Economic Forum, 2018)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
<i>Constant</i>	-7.499	-8.668	0.905	0.189	1.738	-7.633	-1.766	-10.194	-9.193	-6.119
	-4.03***	-3.25***	2.44**	2.95	3.87***	-3.28***	-2.37**	-8.95***	-6.43***	-2.91***
<i>ln(Auditing)</i>	1.351	1.226					1.451		0.911	1.507
	2.53**	2.09**					2.95***		1.91*	4.24***
<i>ln(Governance)</i>	1.761	1.844				2.457				1.827
	3.31***	2.61**				3.94***				3.63***
<i>ln(Liability)</i>			0.396		0.111				-0.062	-0.349
			1.81*		0.61				-0.61	-0.94
<i>ln(Freedom)</i>				-0.018						-0.017
				-0.11						-0.14
<i>English</i>		1.466		2.112			1.323	1.796		
		3.44***		5.62***			3.06***	2.73***		
<i>French</i>		0.842		0.842			0.675	0.969		
		2.36**		1.01***			2.13**	2.16**		
<i>German</i>		0.985		1.454			1.153	1.001		
		2.65***		4.07***			3.01***	2.23**		
<i>Civil_law</i>					-0.747	-0.679				-0.701
					-2.61***	-2.78**				-2.56**

End of Table 3

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
<i>ln(GDP)</i>								0.406	0.358	
								9.96***	5.86***	
Observations	85	85	85	85	85	85	85	85	85	85
Adjusted R ²	0.228	0.229	0.026	0.281	0.037	0.173	0.212	0.586	0.395	0.439
VIF	1.123	3.529	1.000	3.557	1.137	1.016	3.519	3.541	1.231	1.751
χ^2 test	11.16***	8.36**	11.75***	6.29**	7.15**	7.34**	9.79***	3.54*	4.92*	6.91**
F test	13.41***	6.01***	3.26*	9.22***	4.85***	9.81***	6.65***	30.73***	19.61***	14.17***

Notes: Heteroscedasticity robust (HC) t-statistics are in parentheses. Letters in the upper index refer to significance: ***: significance at 1 per cent, **: 5 per cent, *: 10 per cent. P-values without an index mean that the coefficient is not significant, even at the 10 per cent level.

4. Discussions

The importance and contribution of outcomes highlight that the former Fraud Triangle, Diamond, and Planned Behavioural Theories can lead to imprecise conclusions and implications. Cases of financial fraud do not occur in isolation but as a result of interaction between organizations and institutions in a macro-setting, of which organizations are merely a subset. Adding a macro perspective to financial fraud supports an appreciation of the “big picture”, thus taking into account the process of detection and deterrence from individual to organizational and institutional level (Bradshaw, 2014). Consequently, the perspective of institutional economics is a comprehensive approach that can consider the complexity of financial crime so as to guide forthcoming academic research.

The concepts of accountability, control, audit, and governance are interlinked and can be aligned to the broader function of the firm’s corporate governance environment. Corporate sustainability can be determined as the capability of enterprises to influence, for example ultimately, ecosystems (preserving natural resources, reducing pollution), society (supporting other citizens, generating employment), economic development (distributing wealth through dividends, paying fair salaries) and governance practices. Based on this point of view, enterprises realize the enhanced need for corporate and social responsibility (CSR) towards stockholders and potential investors , executive (CEO) managers, staff members, clients, commercial partners, the natural environment and broader society, including national communities and organizations serving the public (Hopkins, 2003; Stonkutė, Vveinhardt, & Sroka, 2018).

Hence, the development of a sustainable management framework covers an effective policy solution including the complete cycle of anti-fraud activities comprising fraud prevention, detection, and response. Fraud prevention and deterrence are less expensive and time-consuming than the extensive process of fraud detection, investigation, and prosecution. One of the essential elements of fraud assessment is analysing the profile and motivation of potential fraudsters, and estimating the total risk of fraud relating to the business. However, this pre-emptive identification of the causes is also essential to make fraud deterrence more effective (European Court of Auditors, 2017).

Sustainable government discipline potentially serves as an alternative mechanism to ensure high-quality audits. Currently, the European Securities and Markets Authority is making some efforts towards harmonization; in particular, to establish a cross-jurisdictional accounting enforcement regime. In the field of management misconduct, e.g., the Sarbanes–Oxley Act (SOX) has a prominent role in developing a firm's ethical and financial reporting process (Ahluwalia, Ferrell, Ferrell, & Rittenburg, 2018) by the enhanced integrity financial reports of firms which implement SOX rules intensively. Thus, other public institutions and legal agreements, such as the European Anti-fraud Office (OLAF), and the Commission's Anti-Fraud Strategy (CAFS) are designed to increase anticipation, and support the exploration of corruption, fraud, etc. and other prohibited events impacting on the financial interests of business life.

The findings seems to be similar to the results of Tang, Chen, and Lin (2016), where the strong legal enforcement system of the countries with developed capital markets have enhanced the quality of financial reporting in a cross-country analysis. As DeZoort and Harrison (2018) also reported, auditors under accountability pressure should be responsible for increased levels of fraud detection and have less variation in perceived responsibility than any anonymous auditor. Malagueno, Albrecht, Ainge, and Stephens (2010) also reported that the regulated accounting and auditing environment is shaped by perceived corruption of the country, and found strong empirical evidence that the support of better governance is related to reduced corruption as a lack of transparency facilitates forms of illicit behaviour. Corruption involves a financial payment in the form of a bribe, fraud, kickback, or theft, and the extended function of sustainable governance is to check on the accuracy of the auditing mechanism to prevent and discourage financial misappropriation (Kimbrow, 2002).

The limitations of the estimations also need to be highlighted because these empirical results are only able to validate a few features of accounting fraud. Meanwhile, other elements, i.e. corruption, the rule of law, political stability, etc. which can also influence the number of reported fraud cases, have not been involved in the models, so the validity of conclusions is restricted by the omitted bias of a lack of data.

Conclusions

According to the results, it can be concluded that the greater strength of auditing and reporting, the liability of directors, independence from government control and effective governance positively affect the number of reported fraud cases. Additionally, as one of the primary (political) institutional determinants, the legal origin is found to be essential, which also affects accounting frauds.

These outcomes also conclude that the disclosure requirements are more stringent in common law countries. Thus, the plaintiffs can be more easily proven wrongdoing in a court of common law countries than in civil law ones. However, English courts do not adjudicate in the case of a “bad bargain”, but intervene in cases of fraud. In practice, directors are unlikely to face liability when the transaction is reviewed by independent financial and accounting specialists and is approved by shareholders. Hence, these countries' legal mechanisms defend minority shareholders against cruel actions by the controlling majority owners. These instru-

ments comprise the right to either withdraw those transactions that are prejudicial to the enterprise or to recover damages suffered.

In our opinion, the discovery of the features of fraud is a vital component in accounting analytics in terms of the support provided by governance strategies designed to resolve the undesirable consequences of financial downturns to reduce volatility in terms of government balance sheets, and exposure to shocks posed by financial market fluctuations. Moreover, we also believe that it is even more interesting to predict defaults than to react to them. In business life, the detection of fraud has become more comprehensive and complex as sophisticated schemes have been developed to hide firms' actual financial performance under the guise of "optimization" for local authorities. In this country-specific approach, further research could be fruitful in these directions. Additional latent indicators should also be taken into account related to the role of corporate governance, e.g. conflict of interest, shareholder's rights to board independence, enforcement of auditing, the extent of disclosure, etc.

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Author contributions

RS and DM conceived the study and were responsible for the design and development of the data analysis. JO was responsible for data collection and analysis. JP and ESZ were responsible for data interpretation. DM, RS wrote the first draft of the article.

Disclosure statement

Authors declare that they have no competing financial, professional, or personal interests from other parties.

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