Interdisciplinary Insights on Fraud

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Edited by

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INTRODUCTION

AURORA A.C. TEIXEIRA

"Do you know, Watson," said he, "that it is one of the curses of a mind with a turn like mine that I must look at everything with reference to my own special subject. You look at these scattered houses, and you are impressed by their beauty. I look at them, and the only thought which comes to me is a feeling of their isolation and of the impunity with which crime may be committed there."
— Arthur Conan Doyle,
Sherlock Holmes: The Complete Novels and Stories, Volume I

Fraud is a complex and transnational phenomenon. It severely undermines the profitability, reputability, and legitimacy of individuals, organisations and states wherever it occurs. It is especially damaging to countries in times of crisis. Given the scarcity of resources and the urgent need for economic growth, fraud can be extremely costly and devastating. Indeed, the draining of resources that results from fraud, regardless of its type and scope, amplifies the costs of running businesses, thus weakening their competitiveness.

Due to its complexity, no single lens or perspective is sufficient to apprehend its causes and ramifications. Fraud should therefore be analysed through a myriad of lenses, involving a wide range of disciplines. In short, an interdisciplinary approach should be adopted.

The aim of this volume is to provide an interdisciplinary insight into fraud, departing from the premise that a proper understanding of the phenomenon of fraud is required in order to be able to undermine it. Such an understanding demands both a clarification of its definition and a proper analysis of its diverse types and scientific perspectives.

Structure of the book

The thirteen chapters selected for the present book address fraud from a transversal and interdisciplinary perspective (see Figure 1). The book contextualizes the phenomenon (Chapter 1 and 2), offers a wide diversity of empirical approaches to fraud – tax fraud (Chapters 2, 4 and 5), fraud related with copyright infringement (Chapter 6), academic fraud (Chapter 7), and white collar crime (Chapter 8) -, as well as putting forward methods – econometric (Chapter 9), simulation (Chapter 10) and statistical (Chapter 11) - for predicting and thus helping to prevent fraud. It further proposes some strategies for action to cope with fraud and fraudsters (Chapter 12) and recover the assets stolen through these scams, most notably through money laundering (Chapter 13).

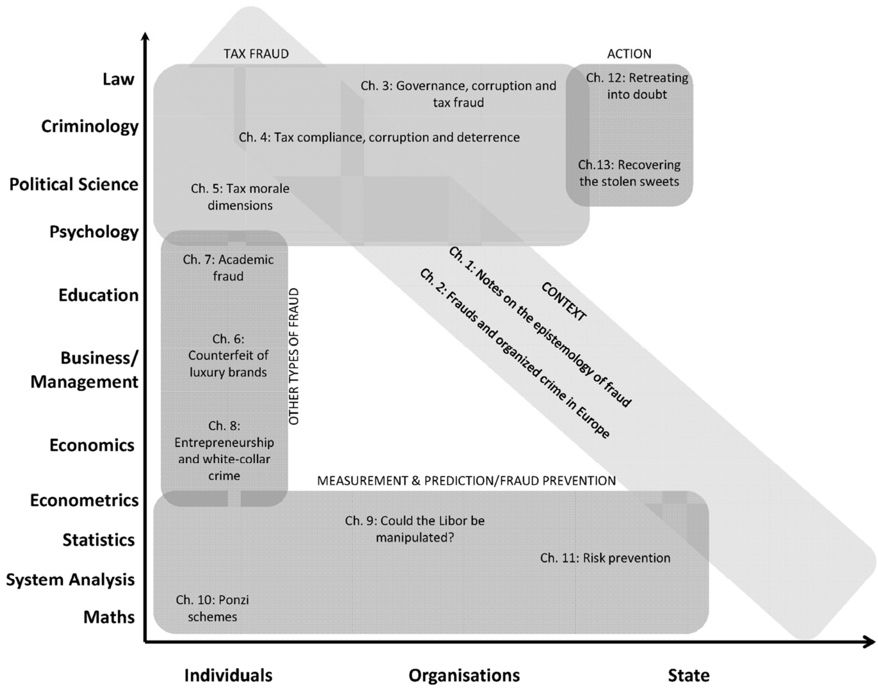

Figure 1: Organisation and structure of the book

Content of the book

In Chapter 1 (‘Notes on the epistemology of fraud’), Carlos Pimenta and Óscar Afonso go deep into the multidimensional phenomenon and concept of fraud, evidencing that in this field “interdisciplinarity is weak”, although it is “institutionalized and operational”. Contrasting with the relevance and concern that fraud posits to societies, the authors establish that educational and research institutions seem to underestimate and ignore it. Specifically, they argue that "[r]esearch into fraud as a wholly social phenomenon is very incipient and education is not training new staff properly", emphasizing that "[p]revention and fight against fraud are too fragmented compared to the need to fight for a more ethical society". Finally, they assert that a proper analysis of fraud requires the contributions of various subject areas (e.g., Psychology, Social Psychology, Anthropology, Sociology, Economics, Management, Political Science, Law, Criminology, History, Geography, Mathematics, Social Network Analysis, Systems Security) and the integration of individual, institutional and social dimensions.

The multidimensionality of fraud is also highlighted by Jean-François Gayraud in his chapter dedicated to 'Frauds and Organized Crime in Europe'. Still barely explored by scientific research, organized crime "is a phenomenon of powers… with a capacity of strategic autonomy away from subordination to other forms of powers (state, economic, financial or media powers)" that "provokes a transformation, often silent and invisible, of the institutions and of the political, economic or social systems". Gayraud provides evidence on some geographical areas – Mexico, Japan, Turkey, the East Coast of the USA, Canada (Quebec) or France – where a large part of the economy is doped with drug money, industry markets criminalization, and "high corruption" (control and corruption of politicians and senior officials by mafia groups). According to the author the only possible path for a successful fight against organized crime in Europe encompasses fundamental knowledge and pedagogy, the existence of a credible judicial system, and adequate criminal intelligence mechanisms.

A successful fight against fraud in general demands indeed fundamental knowledge most notably regarding the diversity of approaches to and types of fraud. Glória Teixeira and Ary Ferreira da Cunha (Chapter 3) establish both a parallel and distinction between corruption and tax fraud, emphasizing that corporate and public governance can learn a lot from each other on how to curb corruption and tax fraud. The authors stress that both corruption and tax fraud pose a significant obstacle for societies, interacting in a vicious circle, in which corruption diminishes social trust, making people much less likely to promote welfare, and more likely to evade taxation. This latter "significantly hampers the ability of the State to obtain the income it needs in order to provide for public goods and services such as justice, security, education or health".

The two following chapters also address the issue of tax fraud but focusing now on the perspective of tax compliance (Chapter 4) and morale (Chapter 5). Daniela Wilks and Luís Pacheco highlight that tax evasion is a particularly serious problem in times of economic austerity, concluding that trust in authorities and their capacity to deter and punish tax evaders are interrelated and both are important in securing tax compliance. The intrinsic motivation to comply with fiscal duties or tax morale is analysed by Cristina Sá, António Martins and Carlos Gomes, who conducted a factor analysis and identified religiosity, trust in government and democracy, trust in public institutions and political participation as the main tax morale dimensions of Portuguese citizens. They further point out that an improvement in the quality of public services and a better relationship between taxpayers and public authorities can promote tax morale and taxpayer compliance.

Using also individuals as the unit of analysis, Neuza Silva and Aurora Teixeira (Chapter 6) study the determinants of the intention to purchase counterfeit luxury brands by university students. The authors discuss how the inappropriate use of a brand, namely by counterfeiting its products, has compromised and destroyed its value for producers and consumers. Such a phenomenon is particularly acute in the luxury market which has observed considerable growth in the last decade, accompanied by the growth of counterfeit luxury goods. It is demonstrated, through econometric estimations, that integrity and a strong belief that the law should be obeyed are the characteristics that best distinguish individuals that do not intend to buy counterfeit luxury products from those that do.

The attitudes of university students are the focus of Chapter 7. Filipe Almeida, Ana Seixas, Paulo Gama, Paulo Peixoto and Denise Esteves deal with the phenomenon of academic fraud, which has drawn increasing attention from researchers As with fraud in general, academic fraud remains a phenomenon whose boundaries are not yet clearly understood, to a large extent due to a lack of consensus regarding its conceptual frontiers and the absence of any clear and comprehensive tool with which to assess it. The authors seek to understand the types, practices and the reasons which cause or prevent academic fraud in Portugal. They conclude that the majority of the students considered fraud to be a frequent practice, revealing a culture of tolerance towards academic misconduct that neither legitimises nor encourages its denunciation. It is further shown that the perceptions and attitudes of the students varied according to the type of fraud in question and the subject they were studying.

Departing from Baumol's contention of white-collar crime as 'destructive entrepreneurship', in Chapter 8, José Cruz translates the theoretical groundings of the model of personality traits applied to entrepreneurial inclination into a model to study white-collar crime inclination/intentions. He argues that if the positive relationship between entrepreneurial intentions and white-collar crime intentions is not rejected, it is possible to establish that institutions and the contextual "rules of the game" (e.g., regulatory framework, the efficiency of the judicial system) matter and should be shaped so as to reduce the attractiveness of unproductive entrepreneurship (i.e., white-collar crime) and to encourage productive entrepreneurship. Additionally, if the influence of perceived social norms is not rejected, social context also becomes relevant in the choice between productive and unproductive entrepreneurship.

Different variants of white-collar crime – financial markets manipulation (Chapter 9), Ponzi Schemes (Chapter 10) and public procurement-related fraud (Chapter 11) – are the focus of the three chapters dedicated to the measurement and prediction of fraud. In Chapter 9, Marius-Cristian Frunza presents an econometric study of the times series of submitted rates by the banks involved in the LIBOR. Providing real case evidence on scandals surrounding some infamous banking institutions (e.g., Bankia, J.P. Morgan Chase & Co., HSBC, Barclays, and Citibank), he assesses the influence of banks on the final LIBOR figures and evaluates the possible impact of their misrepresentation. The author shows that, even though after 2008, under the hypothesis of a bank acting alone, changes in LIBOR rates would have been limited, an organized approach from at least four financial institutions could result in a significant manipulation of the LIBOR.

Mário Cunha, Hélder Valente and Paulo Vasconcelos (Chapter 10) introduce a computational approach to assess the behaviour of a fund under a Ponzi scheme. The mathematical modelling and numerical simulation describe the mechanics of this type of scams, going beyond the simplistic explanation that its sustainability depends only on rapid (exponential) growth of the number of customers and investors. Furthermore, it explores the numerical simulation of Ponzi schemes, allowing for fast evaluation of funds showing unrealistic performances. The authors demonstrate the usefulness of simulation techniques in the detection of unsustainable patterns, being a tool likely to be of interest to financial regulators and investors.

Prediction of business failure is of major interest also in contracts between public institutions and private companies. Leonardo Sales (Chapter 11) selected credit scoring models, which are based on the statistical consideration of the company's characteristics to calculate its probability of becoming a defaulter, as a tool in the prevention of defaults. The author shows for the case of Brazil the feasibility of using multivariate statistical techniques for the prediction of problems by government administrators with their suppliers. Sales argues that for administrators it is interesting to know their suppliers and the risks they offer to execute the services under their responsibility, increasing therefore the efficiency of public procurement processes.

The two final chapters address action-based strategies for fighting and curbing fraud and crime, namely that related to money laundering. Michelle Gallant, in her chapter ‘Retreating into Doubt: Tainted Finance, Civil Devices and the Rule of Law’, draws principally on developments in select common law jurisdictions, particularly Canada, to offer a critical appraisal of modern civil tools aimed at criminal finance. Gallant states that some jurisdictions, notably the United Kingdom, in order to recover assets tainted by crime, rely on the process of civil recovery while the Canadian province of Alberta relies on restitution and compensation regimes. According to the author, “a degree of reliance on civil tools holds some promise” as they facilitate the actual taking or forfeiture of property. Specifically, they offer a degree of efficiency that criminal instruments – encumbered by the weighty exigencies of the prosecutorial process – do not. It is, however, in Gallant’s viewpoint, of great importance to monitor that reliance. Jeffrey Simser, in Chapter 13 (‘Recovering the Stolen Sweets of Fraud and Corruption’), recognizes, as Gallant does, that recovering assets “is a challenging enterprise”. Simser reviews a number of techniques used by criminals to advance fraudulent or corrupt schemes. One of such techniques is money laundering where assets are transformed, through movement and transactions, from dirty money to apparently clean money. According to the author, there are opportunities as we look for better ways to prevent and deter fraud and corruption and as we seek to dispossess criminals of their loot and make victims whole.

Acknowledgements

The present volume resulted from a careful selection of the top quality articles, focusing on the issue of fraud, presented in the first international conference organized by OBEGEF (Observatory of Economics and Management of Fraud). This conference, entitled ‘Interdisciplinary Insights on Fraud and Corruption’, was held in Porto (Portugal) on 13-15 September 2012 - http://www.obegef.pt/i2fc/index.html.

The editors are sincerely grateful to the reviewers of the chapters for their insightful comments and suggestions that have significantly contributed for the quality of the present book, and the authors of the chapters for their efforts in putting together and account for such comments and suggestions.

PART I –

CONTEXT

CHAPTER ONE

NOTES ON THE EPISTEMOLOGY OF FRAUD

CARLOS PIMENTA AND ÓSCAR AFONSO

Introduction

When in 1939 Edwin Sutherland created the concept of "white collar criminality" (1940) and identified it "as a crime committed by a person of respectability and high social status in the course of his occupation" (1983, 7), he was underpinning fraud as the main topic of the then-young field of Criminology and as a social problem to be studied. He effectively recognized the importance of this matter when he noted that:

> "the financial cost of white collar crime is probability several times as great as the financial cost of all the crimes which are customarily regarded as the «crime problem»" (1983, 9),

adding that these crimes are echoed "in politics" and "violate trust and therefore create distrust, and this lowers social morale and produces social disorganization on a large scale" (1983, 10). A reality that is self-reproduced because it is rooted in society itself, as he explained with his theory of differential association.

If, at the time, fraud was an important social fact, it has become so much more some decades later, taking several forms, with disparate manifestations, increasing repercussions and complexity as a result of globalization. The last two decades of the 20th century and the early years of the 21st have brought fraud to the forefront.

Several sciences have increasingly come to focus on fraud as a topic of study. Firstly, Law, since it should anchor social relations in legal standards and fight against fraudulent behaviour. Then, Criminology and other sciences have to apply their knowledge to fight and prevent fraud: Risk Analysis and Internal Control operate as a specialization of Management against fraudulent behaviour; the non-observed economy is assumed as a field of study in Economics; Auditing, a traditional instrument to detect irregularities in the operation and accounting reports of institutions, specializes in Forensic Accounting; Psychology analyses the behaviour of “communities of fraudsters”; Forensic Sciences have to include proof of economic-financial fraud in their field of work; Systems Analysis has to strongly respond to security issues. In short, the first trend consisted in a specialization within the existing sciences and techniques.

Nevertheless, a second trend was being forged at the same time based on intersections among fields or spheres of knowledge. Taking the company as the focal point, Management, − action and reflection, positive and normative, aiming to optimize the resources of institutions – came to generate Fraud Management, the meeting point for diverse spheres of knowledge and practices, such as Accounting, Auditing, Law, Criminal Investigation, Mathematics and Psychology. The degree of interdisciplinarity is weak, but institutionalized and operational, as shown by the deployment of the international association, ACFE – Association of Certified Fraud Examiners (ACFE 2012), and other similar institutions.

Fraud today

It has long been known that fraud is complex and that “fraud has become a challenge to the security of the State.” (Pons and Berche 2009, 13).[1] The resolutions of international institutions and bilateral and multilateral agreements on fraud or some of its manifestations (e.g., corruption and tax fraud) uphold this. It is also a common observation that “the defrauder is a professional” and that “fraud enriches in a complex world.” (2009, 17).[2] More and more sectors are being affected by fraud and the interconnection between autonomous, yet closely related, realities increases (e.g., types of black-market economy, fraud, money laundering, corruption, financing of election campaigns). Society is more aware that there is a relation between the quality of life of communities and the ability to prevent and fight fraud.

The recent subprime crisis, the slump of which we are still experiencing, has put many of these aspects in the spotlight. Although the concealed nature of fraud reduced its visibility, despite the many warnings, the violent crisis and the intensity and nature of fraud has brought this matter to the forefront. Some authors, especially Gayraud (2011; Gayraud and Thual 2012), explain the systemic relationship between crises, international organized crime and fraud. Several authors, economists (Kindleberger and Aliber 2011; Galbraith 1990) and others (de Saint Victor 2012; Ernst-Vintila et al. 2010), have shown that the “economic-financial” crises should increasingly be studied by other social sciences, and that to overcome the crisis, one has to fight conflicts of interest, fraud and crime, as well as state deregulation.

Structure of the text

The next section (II) specifies the meaning of fraud, which is required due to the polysemy of the term, the variety of involved components and the use of a wider definition in this work. Moreover, fraud unfolds in multiple manifestations that reflect a layered diversity of manifestation (individual, institutional and social) and of implementation processes. This brief analysis highlights the hypothesis that we are facing a complex phenomenon. The following section (III) draws attention to the divide between the critical importance of this theme for societies worldwide today and the low priority it is given in teaching and research, highlighting the need for further scientific work in this area. Finally, the last section (IV) presents a proposal that intends to provide the required impulse for scientific research on fraud to be conducted in new ways, given the phenomenon’s complexity, the links between its various layers and its inherent interdisciplinarity. The proposal is relevant to the action to be taken, and is realistic and achievable, despite the expected difficulties.

Multidimensional phenomena

The concept of fraud

Everyone agrees that armed robbery is not fraud. Things are indeed what they seem. There is no pretence. The same can be said of the production and trafficking of drugs. If activities are prohibited by law, they must be done covertly, but no attempt is made to make drugs seem what they are not. In these two situations, as in many others, it is easy to say that these activities (in this case, illegal) cannot be classified as fraud.

It is easy to say what is not fraud, but harder to say what is. This is why there is a myriad of definitions with many commonalities, but various nuances and differences (Pimenta 2009, 11-16)

However, there is ample room for consensus. For example, if in a company there is asset misappropriation without the company being aware of it, having evaded records and controls, it is a fraud. The same can be said of tax evasion by creating shell companies and issuing false invoices. Swindling is also not what it seems. Many other situations have the particular feature of involving deception: rigging election results, selling fake works of art, disseminating counterfeit currency, tampering with management data in a political organization in order to reveal non-existent financial efficiency, using personal data of others obtained by electronic means. In corruption, too, results are forged in a covert manner.

Many other situations are dubious. Is counterfeiting a fraud? Is selling fish that is illegally caught a fraud?

Let us drop the borderline cases.

Although there are many cases of fraud, and they are part of common knowledge terminology, in this paper, we are interested in economic-financial fraud, which generates benefits or harms income and wealth.

Thus, we can say that fraud is any intentional act by persons, individual or collective, perpetrated with deception that causes, effectively or potentially, advantages for someone or damage to others and which violates either good social practices or the law.

This definition, which we will adopt in the scope of this analysis, casts two doubts that need to be clearly addressed.

Why “effectively or potentially”? The intention of this dual reference is to cover those situations in which information was falsified but did not result in either benefits or harm because the agreed situation did not take place (e.g., false information on an illness when filling out a health insurance policy).

Why “good social practices or the law”? Why add the diffuse sense of “good social practices” to the positive quality of the law? Firstly, the subjectivity of the classification is not only present in these “social practices”. The law also provides for them, for example, the case of substantiated factual evidence that is not conducive to a judicial ruling for formal reasons; the fact that many frauds are victimless crimes (from a legal standpoint), not resulting in legal proceedings; and the existence of social and institutional leniency in regard to a conduct that infringes the rules of law, but “which everyone does”. Secondly, there is no reason for handling different, materially identical situations on an equal footing, because the State deliberately or inadvertently did not legislate properly. A typical example are tax havens − which in 2010 soaked up between US$21 x 10^{12} and \$32 x 10^{12} of global private wealth (Henry 2012) −, while, at the same time, many laws are created to prevent tax evasion, and a vast majority of citizens have no access to these mechanisms. Thirdly, changes in social representations, ideologies and ethical concepts over the cycles are particularly interesting for the studies we propose elsewhere in this paper.

Splits and readings

A frequent mistake made when studying fraud is to consider it as an isolated act, as a relationship between an individual and wealth, ignoring that all frauds are a social relationship and are part of a vaster process, whether from a social standpoint, in general, or an economic and criminological standpoint, in particular.

We will later analyze some aspects of this fraudulent process. Our major concern here will be to accurately define some of the terms used.

We are still a long way from having full knowledge of fraud to be able to categorically label it as a complex process and to measure the value of its complexity even less. We can, however, categorically state that it does not have a single cause, that it can be viewed in a lot of ways (multidimensionality), and that it has at the same time many elements of reference (multireferentiality), the necessary, but not sufficient, features of complexity.

Fraud depends on individual behaviour, on interpersonal relationships and on institutional contexts. It depends on the institutions (e.g., State, market, companies, family), on their existence and functioning. It depends on social representations, risk perception and related emotions, and on the collective feeling in relation to ethical behaviour. It depends on the interpenetration between what is legal and what is illegal:

> "there are no longer two parallel worlds, the legal and the illegal, but a world of business which is increasingly penetrated by organized crime" (Véry and Monnet 2008, 180).[3]

These logical findings have been confirmed by a number of empirical studies on some types of more measurable frauds: perception of corruption, tax evasion.

We are still far from understanding the multiplicity of perspectives and views, but we can choose the *non-observed economy* to reflect the macro-dimension of society and economic activity, *social disintegration* to observe the interpersonal and inter-institutional relationships, and *ethical degeneration* to express individual options, obviously embedded in a society.

What we call ethical degeneration is the social weakening of the effective moral norms, which are not uniform in a society, differ by community, and sometimes are stable over long periods of time and sometimes change in short periods of time (Katz 2011, 39-57; Polanyi 2000).

If there are difficulties in objectively examining the development of moral norms, this can be partly overcome by using quantifiable indicators as social representations: "generally speaking, representations inspire and frame human conduct" (Ernst-Vintila et al. 2010, 517).[4]

We have to admit there may be a positive relationship between fraud, particularly economic-financial fraud, and ethical degeneration.

What we call social disintegration are the disruptions of consensus, and combined actions of life and its reproduction. This is a general term to refer to a wide variety of relationships among people, individuals and groups, institutional procedures, ideologies, beliefs and feelings. Several studies have shown a relationship between the Hofstede indicators (http://geert-hofstede.com) and certain types of fraud, between levels of social cohesion and probability of fraud, between social notions of time and fraudulent practices.

Because:

> "intuitively, we understand that an atomised society, where people are distanced from each other, in which they do not communicate or gather together, cannot function as well as another society in which the citizens develop community ties, participate in public life, and gather for a range of purposes, from sports and recreational events, to unionistic or political ones" (Almeida 2011, 9),[5]

Sociologists have used the concept of negative social capital, in quantifiable terms, to gain deeper insights into fraud, particularly in the analysis of corruption (Sousa (Org.) 2009, 93-125).

We have to admit there may be a positive relationship between social disintegration and fraud, in general, and economic and financial fraud, in particular.

Adopting the terminology of the OECD (2002), the non-observed economy includes all economic activities not considered in the aggregate national accounts. This difference between economic activities and national accounts results from the characteristics of the activities.

There is a strong identity between the underground economy and fraud. By definition, it is essentially tax fraud, assuming the definition of fraud presented before. For this reason, we can say that there is a close relationship between the underground economy and economic and financial fraud, in that they have a common share and because an environment of greater tax evasion increases the probability of there being other types of fraud.

In its diversity, the illegal economy (Napoleoni 2009) is rarely fraud, yet there is a close relationship between its variation and the dimension of economic and financial frauds. As we have mentioned, there are different borderlines. First, because it reflects a certain level of permissibility and control of the activities prohibited by law and, second, because some illegal activities contribute directly to some frauds, including corruption and money laundering. Finally, because there is a close relationship between these activities and international organized crime, on the one hand, and between the latter and fraud processes, on the other. In some periods of history, international crime, including mafias, specialized only in certain illegal activities, but not today. Drug trafficking currently supports international economic crime (Queloz 2002; Cretin 2007; Gayraud and Thual 2012), but it is an activity among many.

The relationship between fraud and the informal economy is much more elusive. It depends on the situation. It can either indicate types of occupational fraud, as a means to increase social cohesion, or show the overlapping of different modes of production that result from stabilizing social customs.

Finally, some words on *money laundering*. Regardless of its possible particulars and different legal definitions (Silva et al. 2009), we can say that it is the social concealment of the origin of economic values (Braguês 2009).

The reference to this category in the terminological accuracy of the components making up the fraud process is different from the ones mentioned before. Money laundering is a phase in the circulation of wealth and income associated to fraud and the non-observed economy. There are feedback effects between money laundering and fraud, and this is relevant in the concept of complexity.

From the normative point of view, there is today an association between terrorism and money laundering. This is a highly controversial relationship (Kane and Wall 2004; Vittori 2004; Dupuis-Danon 2005), both because of the amounts involved and of the actual financing of terrorism. Some authors (Gayraud) uphold that this is a fictitious relationship that led only to a diversion of resources in the fight against fraud. Nevertheless, we cannot deny the close relationship between the non-observed economy and fraud, on the one hand, and money laundering, on the other. Similarly, the States have, over the years, made life easier for money laundering by setting up tax havens, implementing deregulation and free movement.

In short, fraud is a multidimensional and multireferential social process, processed in different layers of the social structure, with dynamic and different times of reproduction and changes, with feedback effects. Its integrated reading alone can provide us with a more accurate contextualized understanding of the phenomenon. The intersection of spheres of knowledge is a prelude to a more effective fight in the prevention and detection of fraud.

Reality and Ignorance

The fraud reality

We can say that fraud has always existed. Historical references prove it. However, since fraud is a process of social relationships, we cannot establish a continuity that supersedes the periods of continuing social dynamics and does not take into account the disruptions in social organization.

Even though Adam Smith and many of his followers did not establish a relationship between businesses and fraud – if he had some concerns regarding the deterioration of social behaviours those concerns were related to the workers (Walraevens 2011; Smith 1983) – such a relationship was always present in capitalism. It changed its shape with capitalism and assumed new dimensions and features with the financialization of the economy after the 1980s, at a time when neoliberal theses and the abandonment of controls and regulation were strengthened.

While this is not the place to present a history of fraud and of the categories previously associated to it, it is nonetheless important to recall some data that show the relevance of this reality today. The inventory is not exhaustive, which would be impossible to do, but it does show some of the most significant references.

According to ACFE data, occupational fraud against companies represents, in the USA, between 5% and 7% of their revenues (ACFE 2012, 2010, 2008, 1996, 2006, 2004, 2002). It may be higher in many other countries. The World Bank estimates that corruption of members linked to the State is of about 1×10^{12} US dollars, 1.6% of the world GDP in 2010. To this must be added bribery in international business transactions (OECD / World Bank 1012) and corruption in sports. We have elsewhere referred to the estimated amounts in tax havens. Money laundering of criminal origin represented 1.6×10^{12} US dollars in 2009 (UNODC 2010). The average shadow economy in EU countries is estimated at 18.4% of GDP this year (Schneider 2012).

If we were to include the illegal economy, which is impossible to calculate, it would strengthen the catastrophic image that the previous numbers already bring to mind. We will only mention that the estimated profits from transnational organized crime are of about 35×10^{10} US dollars a year (Gayraud and Thual 2012, 155).

Trends of evolution

The costs underlying all these illegal activities must be added to the values above: prevention costs and the costs of the consequences of these situations.

As evidenced by several empirical studies on corruption, we know that fraud negatively impacts on domestic investment, foreign investment and the product, government expenses and the quality of public services, competition, international trade, employability and wages. It challenges the key values of society and democracy itself. Fraud in financial business and tax fraud underlie the current sovereign debt crisis in the EU.

However, the consequences of fraud and economic crime, in particular, are much more wide-ranging. First, fraud, economic crime and some criminogenic behaviour in the USA have strongly contributed to the current international economic-financial crisis. Gayraud (2011) shows this clearly, postulating that all economic-financial crises are political crises, and that crime is always present. Basing his considerations on some important economists, which we will refer to ahead, he shows that:

> "The criminogenic environment which led to the crisis of the savings banks first and to subprime afterwards, can be summed up in three words: deregulation, de-supervision and decriminalization. These are the three Ds at the core of the crisis." (Gayraud, 2011, 230).[6]

Given this conflict of interest-filled context, the speculative business environment in which "the profits are privatized and the losses socialized",[7] marked by the asymmetry of information and misselling (the ethically questionable practice of a salesperson misrepresenting or misleading an investor about the characteristics of a product or service) (2011, 203-205), has boosted the exponential growth of frauds, detonating the international financial crisis.

Second, the context mentioned above, the difficulties facing companies and States, the restrictive policies regarding privatization packages and the divestiture of State sovereignty, have paved the way for capital of criminal origin to penetrate the legal companies, to gain greater influence over international economic crime in the business world and greater political control (de Saint Victor 2012; Gayraud and Thual 2012).

These penetrations are operated in myriad ways, sometimes to solve cash-flow problems and, at the same time or subsequently, to participate in companies until they are controlled. These capital crime penetrations buy out privatized, often strategic companies. They support and fund electoral campaigns, they corrupt officials, use offshores, control new and small States without authority, as well as kleptocratic countries. Moreover, they "manage human resources" outside the world of crime that may be of use in the future.

The experience of the economic management of mafias in some countries and sectors is a micro-view of the dangers that such control of business by economic criminality poses to the future of mankind. Europe is today a particularly sensitive region (Gayraud 2012; Napoleoni 2009).

Third, the progression of organized economic crime and the generalization of fraud are cumulative. The tendency to deteriorate is done in many ways, but we will limit ourselves to metaphorically recalling Gresham's law: "The bad capitalism removes the good capitalism; the bad capitalists remove the good capitalists." (Gayraud 2011, 229).[8]

If a company is not open to corruption in a public tender for a major work and another company is, which is more likely to grow economically? If these two companies want to export to a country where corruption is a prerequisite for penetration, which is more likely to have any chance? If a company meets its tax obligations and another company evades them, which one is more likely to show a higher profit rate? If a company promotes industrial espionage, will it be more likely to attract the new market share or the company that suffers industrial espionage? If a company grappling with cash-flow problems has to turn to credit and another company resorts to money laundering, which company will have less costs in obtaining cash? In short, those behaving contrary to the "good trade practices" are the most likely to win over the competition and expand their business.

Admittedly, the "misbehaving" company runs the risk of being penalized for an unlawful act, which can end a successful career. This is a fact. However, having taken place in white-collar crime territory (Santos 2001) these risks are smaller. If economic crimes were to be decriminalized, the amount to be returned would always be a small part of what was earned. All we would have to do is include it as a business risk. The analysis of money-related convictions in the USA in the past thirty years proves this.

Insufficient training

Training on the nature, detection and prevention of fraud should be in place just by reason of its social relevance. Unfortunately, this is not the case:

> "Economists receive no training about fraud risk, incidence, or mechanisms (beyond the conventional wisdom that it was trivial, a distraction during the debacle). Lawyers receive no fraud training. (…) The average new accountant receives no meaningful training about fraud and no training at all about fraud control" (Black 2005, 247).

The same can be said in relation to the directly correlated facts mentioned previously. For economists, honesty is *ceteris paribus*. The economic reality is not a part of the social one (Polanyi 2000) and they do not examine whether markets are self-regulated or not. They admit they are. It is, therefore, not surprising that the social representations presented by management students defend the *status quo* (Ernst-Vintila et al. 2010, 521).

Insufficient research

Research on the problems of fraud also seems to be at a far distance from the relevance of the phenomenon.[9]

Having selected the twenty-four keywords related to fraud, corruption and bribery, money laundering, non-observed economy, tax evasion, cyber fraud, to refer to specific cases of fraud that we have examined so far, and criminology, a general term, we found that between 2000 and 2011 there were 9715 articles registered in the *Scopus* database that contain at least one of the keywords. This number has increased year after year, from 377 in 2000 to 1411 in 2011. The two journals with the most articles are the *Journal of Business Ethics* (176) and *Crime Law and Social Change* (145). By nationality of authors, the USA (34.2%), the United Kingdom (12.1%) and Australia (4.2%) represent more than half of the articles.

The Table below shows the result of a more detailed analysis by discipline (Economy, Management, Psychology, Anthropology, Geography, Accounting and Law) and by journals in top or intermediate positions in the ranking:[10] percentage of articles that mention at least one of the keywords in relation to the total number of articles published by discipline and level of journals.

Table 1: Frequency of references to fraud by discipline

Subject area	Journal ranking	# Journals	Min (%)	Max (%)
Accounting	Top	3	0.8	3.4
	Middle	-	-	-
Economy	Top	3	0.3	0.5
	Middle	3	1.0	2.3
Management	Top	3	0.5	1.4
	Middle	3	1.3	1.7
Law	Top	3	0.7	2.6
	Middle	3	0.0	6.2
Anthropology	Top	2	0.0	2.1
	Middle	3	0.0	0.5
Geography	Top	3	0.0	0.5
	Middle	2	0.0	0.2
Psychology	Top	3	0.0	2.0
	Middle	4	0.0	1.7

Note: See Appendix 1.

Criminology journals have much higher percentages (between 0.8% and 50%), but the use of general keywords means that this information is not comparable with the remaining disciplines.

In short, whereas fraud is a social reality of great concern, educational and research institutions underestimate and ignore it, particularly those that are responsible for training technical members who will be more likely to take positions that require an ethical attitude, to promote the detection and prevention of fraud.

Whereas international economic criminality has a worldwide decision-making centre and conditions that facilitate criminal cooperation, the institutions likely to fight against it are predominantly split by countries, referring to the tree but ignoring the forest. Experts are hived-off in their specific areas, treated in a disciplinary way. Research into fraud as an entirely social phenomenon is very incipient and education is not training new professionals properly. Moreover, totally different terminologies used to interpret the same reality hinder a common understanding.

Although universities and other research institutions are not responsible for overcoming some of these segmentations, they are nevertheless responsible for addressing the matter and disseminating it in a professional and integrated manner.

Interconnecting spheres of knowledge

Interdisciplinarity: object and methodology

From what we have said above, we can easily conclude that the study, prevention and fight against fraud are too fragmented compared to the need to fight for a more ethical society. This fragmentation finds more unity within fraudulent people and institutions, and in permissive and boosting factors of fraud.

A more unified and complete study of the fraud process is a significant contribution to reducing the said fragmentation on two complementary levels. First, it would increase scientific knowledge and strengthen unity within a scientific community that is often dispersed and hived-off. Additionally, it would increase the likelihood of a more appropriate public opinion, all the more so when the media serve the cause. Second, it would provide tools for analysis and action to enhance the capacity for detection and prevention. This prevention must be understood in a micro and macro-social sense. This epistemological work is highly pragmatic.

This interconnection between fields of knowledge does not arise spontaneously. Counter-trends are greater than those for the start-up of such a venture, despite some positive developments, as we have already mentioned.

We propose that there are three key vectors in such a project.

First, the focus of study is economic-financial fraud as a systemic element of the entire social reality.

When doing science, the focus of study is not the ontological reality, but an epistemological construction thereof, maintaining ties as strong as the literalness and realism of the study to be undertaken (Pimenta 2012, Chap. III). In our case, the core of the object of study is *economic-financial fraud as a process*. A social process that only assumes real meaning when part of a whole (Godin 1997) that reproduces itself.

Every economic-financial fraud reflects, within its specificity, the entire social reality of which it is an integral element: the mode of production and its organization, social-political structure, various social representations, existing ethical and philosophical concepts, and structure of individual and institutional social relationships. In its specificity, every fraud is unique. At a given historical moment, every fraud, as a reflection of the social whole, shares common patterns with other frauds.

While the process of economic-financial fraud is a limiting factor of the object of study, its entirety (as a fraud, as a crime) expands it. The two ensuing vectors, and the methodology of the project, help pinpoint this tension.

Second, we need to articulate in a structured whole the micro and macro dimensions of the economic-financial fraud process, the interaction of the different social layers, with their own times, taking into account at least the non-observed economy, money laundering, social disintegration and ethical degeneration.

What has been said about these various groups shows that we face parts of the process that make up economic-financial fraud, which allows us to address the individual, institutional and social dimensions, always present in every event. It also sheds light on the circulation of income and wealth upstream and downstream of the fraud, in a strict sense.

There is a very good chance that the actual investigation into fraud in the contexts we have identified needs to consider other moments in the process, but these are sufficient and limit the starting point, which is a crucial moment for interconnections among spheres of knowledge.

Third, the two vectors mentioned are only feasible if interdisciplinary dynamics are in place. The integration of individual, institutional and social aspects, including the economic and political, requires contributions from various disciplines: Psychology, Social Psychology, Anthropology, Sociology, Economics, Management, Political Science and Law. Since fraud is a type of crime and is strongly linked to a "criminogenic society" (Dias and Andrade 1997), the contribution of Criminology is invaluable. Since the scientific object should reflect the ontological reality and the reading should be integrated and evolutionary, the presence of History is indispensable. According to some authors (Gayraud and Thual 2012), the association of fraud to organized crime and the importance of territory in its characterization would further the involvement of Geography.

The dark figure[11] of crime, the imagination that surrounds it, the proof that a fraud exists long before it comes to light, if it ever does, makes the phenomenon difficult to quantify, yet quantification is important as shown by various general works (Schneider 2004; Blanc et al. 2008) and specific works (Torgo and Lopes 2011; Gonçalves 2010; Schneider 2008; Del Monte and Papagni 2007). Mathematics is an auxiliary science that has to be present.

An analysis that integrates the individual and the social in an interconnected way requires, today, the use of tools such as the Social Network Analysis (Knoke and Yang 2008). The use of computer networks in the pursuit of fraud also requires specialists with expertise in this area, particularly in Systems Security.

A small final clarification is required. Why consider economic-financial fraud as the object of study and not fraud, which seems to be a more integrating epistemological reality? The difficulties that accompany the processes of interconnecting disciplinary, scientific and philosophical spheres of knowledge suggest that the object should be strongly delineated. Fraud is a too broad a concept. The experience accumulated in the cyclical dynamics of economy and society suggests a methodology strictly associated to economic-financial fraud.

Difficulties

Despite its increasing relevance, interdisciplinary difficulties are well known.

The main interdisciplinary difficulty probably lies in the fact that it unsettles the established powers. The hiving-off of scientists in their disciplinary area and, within it, in a specific theme, is a relatively consolidated situation, a controlling set of social relationships, a certain position in the teaching or research institution to which it belongs. It supports a certain social recognition, possibly mediatisation. This hiving-off and recognition facilitate access to funding. Participation in an interdisciplinary project is a risk to that stability, all the more so because final results are more uncertain and new competition has to be tackled.

It is essentially for this reason that institutions with a vast "geographical density" of disciplines and varied themes are, at the same time, so defensive and retroactive in relation to interdisciplinarity.

To this difficulty in correlating powers is added the greatest uncertainty of an interdisciplinary project. All those who have specialized in ethical problems are aware of a possible range of research topics and are likely to add information to some of them. The same applies to whoever studies the deviating behaviour or dynamics of investment in the economic cycle. When such scientists gather around the process of economic-financial fraud, the horizon of outcomes is yet to be built. At the outset, the joy of findings can be huge, but may be shadowed by major risks.

Finally, there is a set of epistemological difficulties, namely the fact that it is impossible for every scientist to properly know in advance some of the sciences involved, the weight of a previous disciplinary reading that delimits the "consciousness possible" when interconnecting different fields of knowledge, the difficulty in understanding the participants since they are marked by profound terminological differences, and resistance to changing reference paradigms. Quite apart from the existence of some disciplinary paradigms which tend to invade and dominate other sciences such as those from History (Godin 2003, 8) and Economics (Maki 2009).

These are difficulties, not deterrents. They are risks, but also the possibility of breakthroughs, the ultimate aim of every scientist. The project design can minimize some of the difficulties.

The research project

Economic cycles are a traditional topic in Economics. Even in the strict field of that science it is common to consider parameters reportable to Social Psychology, as Keynes does (Keynes 2010). Almost all authors focus their attention on economic variables, but they recognize that there are "exogenous variables" that also influence the process (Schumpeter 2008, 13). Some of these exogenous variables are all the more important in some models, such as the analysis of the relationship between the "economic cycle" and the "political cycle", the political-economic cycles.

Frauds also appear here and there, virtually by accident, in various works − see, for example, Schumpeter (2008, 154), but they also figure prominently in other works. For example, Galbraith (1990), who "reviews the great speculative episodes of the last three centuries. As already observed, common features recur" (Galbraith 1990, 12), and point to the extreme brevity of the financial memory:

> "In consequence, financial disaster is quickly forgotten. In further consequence, when the same or closely similar circumstances occur again, sometimes in only a few years, they are hailed by a new, often youthful, and always supremely self-confident generation as a brilliantly innovative discovery in the financial and larger economic world. There can be few fields of human endeavour in which history counts for so little as in the world of finance. Past experience, to the extent that it is part of memory at all, is dismissed as the primitive refuge of those who do not have the insight to appreciate the incredible wonders of the present." (Galbraith 1990, 13)

He adds a second factor "contributing to speculative euphoria and programmed collapse is the specious association of money and intelligence" (Galbraith 1990, 13). A set of clichés and false associations means that "*financial genius is before the fall*" (Galbraith 1990, 17).

Kindleberger and Aliber (2011), for example, dedicate chapter 7 (in the 2005 edition, this latter edition had not been issued yet) to fraud: "Bernie Madoff: frauds, swindles, and the credit cycle". The interconnection between cycle and fraud is significant:

> "Swindles, fraudulent behaviour, defalcations, and elaborate hustles are part of a life in market economies (...). Corrupt behaviour is part of virtually every economy. The number of transactions that appear to overstep both moral and legal norms increases in euphoric periods (...). Fraudulent behaviour increases in economic booms" (Kindleberger and Aliber 2011, 121; 123; 141)

"Reduced regulation" (Kindleberger and Aliber 2011, 127) also contributes to this situation.

In short, Economics and Criminology are already drawing closer as regards the relationship between social cycle and economic-financial fraud, which is a good starting point for interdisciplinary work, given the importance assumed by these disciplines in the project.[12]

However, the intersecting points are not limited to this. Regardless of the causes, phases and nature of the economic cycle, crisis plays a central role. The use and meaning of the concept of crisis are different depending on the social science, even though they converge in some points. In all sciences, it means a breakdown; in all sciences, terminology overlaps; and all sciences can use similar analytical tools. This is what accounts for the widespread use of the Catastrophe Theory (Thom, 1989).

Moreover, sweeping political, economic, criminological, ideological and ethical changes have occurred for short periods of time during the economic-social cycles. They are a good testing ground for inventorying events that may be an interdisciplinary field of study.

In short, the causal relationships between economic-social cycles and economic-financial fraud, based on the assumption that we are dealing with a complex reality, is a good key objective for our proposed project.

A close relationship between Criminology, Law, Economics and History, cloaked unpretentiously as collective learning, seems to be a good backbone for an array of other social sciences, already mentioned above.

Conclusion

Our proposal is to broaden our knowledge and understanding of economic-financial fraud to increasingly operationalize the fight against it. To this end, we opted for linking the macro and micro readings and dealt with fraud as a social process interconnected with many other dynamics.

Interdisciplinarity, which does not detract from specialization, is, on the contrary, how it should be pursued. The delimitation of the object of study and the understanding that there is, at least at the outset, a hard core of disciplines involved may reduce the difficulties of the project.