# SHELL CORPORATIONS AND THEIR ROLE IN INTERNATIONAL FRAUD

Bachelor Thesis

## ABSTRACT

This paper investigates whether firms interacting with shell corporations face a higher likelihood of being engaged in fraudulent activities. As such, it can be theorized that three variables play an important role – Interaction, Attractiveness and Complexity. The first variable considers the relative amount of cash flows exchanged between the parties of interest and whether firms possess significant controllership interest in shell corporations. Attractiveness considers the location of the shell corporations interacting with the firm in interest. A location is deemed to be attractive if it provides high anonymity, financial secrecy and a stable environment for assets. The last variable quantifies the overall complexity of the financial scheme. Complexity is calculated using an algorithm which in essence estimates the level of interrelatedness between the parties involved in a shell scheme.

Ram Bambani
Student number: 371650

Prof. Dr. Bauke Visser
Thesis Supervisor

**ERASMUS UNIVERSITEIT ROTTERDAM**
**ERASMUS SCHOOL OF ECONOMICS**

# Table of Contents

# 1. Introduction

The beginning of the 21$^{st}$ century is marked by the fall of huge corporations – Enron, WorldCom and Arthur Anderson, to name a few, which caused investors to lose faith in the stock market's ability to deliver long-term growth (Miller, n.d.). Due to this, much emphasis has been placed on the importance of financial information transparency and the restructuring of international financial reporting standards (IFRS) (Palepu, Healy, & Peek, 2013). Hence, corporations were pushed to establish better internal controls, increased management responsibility, and lower information asymmetry. According to Anthony et al. (2014) this led to the introduction of the Sarbanes-Oxley act[1] in the U.S. and the adaptation of IFRS by the E.U. in 2002. Despite the many changes in regulations, Baker (1999) suggests that a loophole in the legal system allows for the creation of complex transaction channels. Such structures allow for illegal funds, i.e. dirty money, to be rerouted in a legal way. In particular, this happens with the assistance of *shell corporations*[2] - legal entities which are used by organizations as transactional vehicles for a myriad of purposes (Garner, 2009). For instance, a shell corporation can be used to disguise transactions between a high-class company and suppliers with bad reputation or for reverse mergers (Floros & Sapp, 2011). The legal use of shell entities varies from maintaining control over conglomerates, and obtaining external financing, to facilitating illegal activities such as money laundering. A typical shell corporation has enough assets to act as an intermediary in business transactions without creating value. In other words, shell corporations do not conduct any manufacturing nor commercial business (Nefsky, 1977).

The following case exemplifies how shell corporations are utilized to hide assets. The case originated in the UK where a woman wanted to track her husband's assets due to their divorce. Figure 1 below shows how the husband took advantage of corporate vehicles to hide the alleged assets (Cotterill, 2013). The *W* and *H* in the figure show the complex financial relationship between the wife and husband. The relationship was so complex that it covered 10 shell companies (i.e. Quita Castle, Lenin Capital LLP, Trotsky Capital LLP), in 5 different jurisdictions (BVI, Cyprus, Nevis, etc.). Although, the UK decided in favor of the wife, the judge was uncertain on how much of the net worth will the wife be ever able to collect (M -v- M and

---

[1] A United States federal law which reformed standards for corporate and auditing accountability and constituted an investor protection act and a management's responsibility act; http://www.sec.gov/about/laws/soa2002.pdf.
[2] Not to be confused with shelf or dummy/front corporations, see Appendix A

Yuri Barkov and others, 2013). The tip of the iceberg, this divorce case allows for a momentary glimpse inside the complicated relationship between large cash and the nets which keep it "above the law".

*Figure 1. A complicated shell scheme*
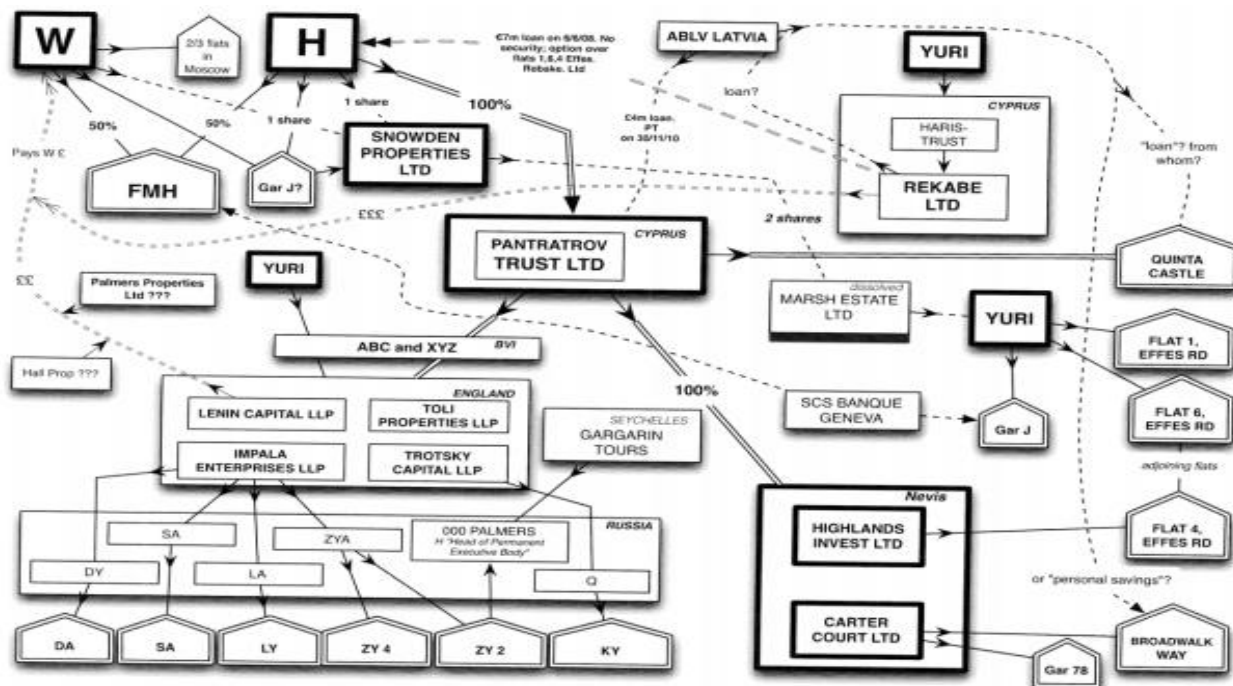


However, shell companies are not only created in offshore zones and used by skilled bankers. The ease of access and the costs to create such corporations are significantly low (Findley, Nielson, & Sharmon, 2012). With the use of a web of shell corporations, fraud becomes almost undetectable since countless transactions can be carried out between the various shell firms (Kinner & Vona). Essentially, shell corporations are not illegal by themselves. However, the creation of complex net structures of offshore shell entities allows for illegal conduct (Sharman, 2010). These structures encompass a multitude of actors, such as beneficiaries, nominees, trust settlors, underlying officers, to name a few. Due to their complexity, such structures have a well-functioning responsibility sharing system. In other words, since none of the parties is doing something illegal, none can bear legal responsibilities. Nevertheless, the whole operation may add up to crime. This, thus, challenges the effectiveness of ethical standards and regulations, raising the question of:

*What is an appropriate way to measure the likelihood that a company is engaged in a fraudulent scheme given the existence of a regular interaction with shell corporations?*

## 1.1. Structure of the research

This thesis is conscious of the scarcity of available sources, due to the nature of the subject and will therefore follow a long line of previous researches. Although certain sources of information exist, (such as police reports, and research articles, to name a few) the vast majority of data is difficult to be directly obtained. To set the tone for future research, this thesis will focus only on developing a methodology for the study of fraud in shell corporations. It will therefore explore different empirical possibilities for the creation of a research tool to fit the complex and hidden nature of offshore financial crime. This paper is structured as follows. Firstly, a discussion about the academic, social and economic relevance of the topic ensues. Next, the literature review highlights the more complex nature of shell companies. Thereafter, a methodology and data section will present the composition of a theoretical model, which makes use of a probit regression. The final section will summarize the research as well as highlight limitations and suggestions for further research related to the analysis of shell corporations and fraud.

## 1.2. Economic and societal relevance

One might argue that a change in governance and regulations can improve integrity and reduce corruption. Ahmed et al. (2013) show that IFRS adaptation has in fact led to better reporting quality and assurance. However, Harwood and Simmons (2012) suggest that fraudulent activities have merely shifted in terms of strategies and legal manipulation. Reports by the Association of Certified Fraud Examiners (AFCE) (2002; 2014) show that cases for at least 1 million dollars have increased from 16% to 22%. The AFCE reports estimated the cost of fraud to be at a median level of 5 percent of annual revenues, which applied to the 2013 Gross World Product represents a loss of nearly 3.7 trillion dollars. This research contributes to society by finding a method for reducing the amount of "disappeared" money. From a macro economical perspective the amount of taxed money will increase. Better taxation would allow governments (especially in developing countries) to relieve poverty, invest more in development, and deliver public services (IMF, OECD, UN, and World Bank, 2011). Furthermore, from a market integrity perspective these types of companies could be a potential cause for market failure, since the misuse of

corporate vehicles may threaten financial stability (OECD, 2001). There is in a way a case of information asymmetry. For instance, by employing shell companies in public entities, external investors will not have information on how their money is used. This allows internal individuals with authorized functions to increase their wealth at the expense of others, without the latter having knowledge about it. This information loss constitutes a market failure on a very large scale, not only because it is unjust, but also inefficient (Reiss, 2013). The unanticipated effects of shell company fraud may be costing the economy billions, without anyone knowing about it.

### 1.3. Academic relevance

Thus far, shell corporations and fraudulent schemes have been either studied as a separate phenomenon or together, but only from a legal standpoint. Financial Action Task Force (FATF) (2006) and Findley et al. (2012) establish the conclusion that complex structures and anonymity are somehow associated with fraudulent activities, however, the lack of information prevents authorities to determine perpetrators in an accurate and timely manner. Recently, the UK government has passed legislation for the establishment of a public registry of beneficial ownership information, which would increase transparency (Global Financial Integrity®, 2015). Tihin (2008), in line with the aforementioned, suggests that greater transparency is needed in order for authorities to understand and detect how offshore trusts and financial vehicles operate. However, she argues against the need for more legislation as "creative minds" will always find new loopholes. Rather, a tool is needed which will indicate the level of risk for fraudulent activities. On this builds up the leading model for measuring international global money laundering – the distinguished "Walker Model", which is based on Newton's famous "Gravity Model" (Walker & Unger, 2009). Despite the validity and reliability of the Walker model, a better micro-foundation and the understanding of criminal behavior are needed to identify individual fraud cases. By conducting this research, more insight will be gained on the aforementioned issue.

## 2. Literature review

Fraud and shell corporations seem to be of little scholarly interest or at the very least any such interest did not result in many publications. This area of research represents a significant challenge to academia as it involves the analysis of several hard-to-quantify concepts and the involvement of multiple parties which are masked by legal barriers. The issue is complicated and also aggravated by the advent of technology, thus studying it, as well as monitoring it is very difficult – hence the necessity and importance of this paper. Despite the limited scholarly interest by various accounting and finance journals, relatively more interest has been shown by organizations such as OECD and NGOs such as Financial Action Task Force. Thus, to attain more insights about the implications of shell corporations, the available literature is divided into three parts which mostly follow reports and field researches available from such organizations. It should be noted that these studies follow a qualitative approach. Each part will look at a different perspective of the factors surrounding the use of shell vehicles. The first section focuses on explaining how shell corporations function and how they are related to fraudulent activities. Moreover, the role of *anonymity and complexity* will be analyzed in different scenarios, since their existence is the main reason behind the use of financial vehicles. Secondly, this paper will focus on literature addressing the ways of establishing a link between financial vehicles and corporations. Thereafter, this paper will discuss the determinants of the "Walker Model" (Walker & Unger, 2009) and will look at factors used to signal for fraudulent transactions. Lastly, a standard shell scheme is discussed in order the factors in play to be visually captured.

### 2.1. Crime and functionality of shells

#### 2.1.1. Fraud and shell companies

If a person is to be involved in an illegal act, he would perform it in a way not to get caught (Davis, 2006). This behavior can be applied to a person who wants to hide illegal assets. Nowadays, corporate vehicles grant the opportunity for this anonymity by legally separating the perpetrator from the ownership of his assets. A U.S. Senate report (Senate Permanent Subcommittee on Investigations, 2006), has investigated such issues. The main findings revealed that individuals from the U.S. utilized offshore trusts and shell corporations to evade tax, securities and anti-money laundering regulations. Moreover, trusts and corporate service

providers (**TCSPs**) are employed to abuse corporate and financial secrecy laws of offshore jurisdictions. This makes it purposefully troublesome to identify individuals owning the allegedly illegal assets. Two cases in the Senate report exemplified this through Sam Congdon and Lawrence Turpen, both of whom were involved in establishing offshore structures for more than 900 individual clients. Moreover, a testimony by the owner of an offshore shell bank John M. Mathewson (2001, pp. 10-22), revealed that approximately all of his clients were involved in financial schemes or tax evasion. Another report by Van der Does de Willebois et al. (2011) examined 150 international cases of corruption which shared common characteristics. In line with the mentioned above, this report established that corporate vehicles (mainly shell corporations) are misused to hide the money trail of illegal capital. In support, a World Bank report (Gordon, 2009) discusses how corruption related money often successfully bypasses official regulations by means of shell companies. In the form of "consultancy fees", this money can move through countries without the need for proving their origin. Lastly, a report by Global Witness (2009) outlines how well-established banks such as Deutsche Bank, Bank of East Asia, and Citibank were involved in situations where natural resource revenues from developing countries were not being transparently accounted for. With the use of shell companies, public finances coming from oil income were diverted to private accounts of politically exposed personas or to governments which had huge holes in their budgets. The aforementioned provides evidence which suggests that shell companies and fraud are most likely related or at the very least people seeking to evade the law are misusing corporate vehicles. Furthermore, if shell companies are involved with supplementary structures such as trust funds, the costs to track money become even more substantial. This makes them highly effective and potentially conductive to further crime (Financial Action Task Force, 2006).

### 2.1.2. Secrecy and complexity

An OECD report (2001) investigates the mechanism of how shell corporations make their owners anonymous. Financial centers in offshore jurisdictions create a favorable environment for corporate vehicles to be illegally misused by providing them with excessive secrecy. Secondly, given the function of corporate vehicles, shell companies provide the greatest risk of being misused for illicit purposes. Furthermore, shell corporations established in offshore jurisdictions are allowed to use instruments which obscure ownership and control, and TCSPs seem to play an important role in the process. In support to this, an impersonated experiment by Findley et al.

(2012) found that nearly half of more than 3700 analyzed TCSPs, which sell shell companies, failed to comply with international rules on customer identification. Furthermore, 22 percent of the TCSPs did not ask for any purchaser identification. Besides acting as intermediaries, TCSPs offer various auxiliary services which range from establishing virtual facilities to filling corporate roles as nominee directors, shareholders, to name a few (Findley, Nielson, & Sharmon, 2012). This suggests that it is very likely for shell-company fraud to often remain undetected. In instances where information over ownership was displayed, the analyzed corporate vehicles were created or governed by professional intermediaries, such as TCSPs and trusts (Van der Does de Willebois et al., 2011). This shows that providers of financial, administrative and legal services can be employed to cover and facilitate transactional schemes. The demand to erect webs of corporate vehicles and to allow third party members to legally own the assets of clients can be explained by complexity. Buchanan (2004) argues that the complexity of corporate structures plays an important part in legitimizing financial transactions. For instance, the second stage of money laundering (layering) is concerned with increasing complexity usually by involving two or more jurisdictions as part of the corporate structure (Buchanan, 2004). The involvement of multiple jurisdictions further protects anonymity since strict corporate and bank secrecy laws are enacted which prevent legal parties and financial institutions to disclose beneficial ownership information (OECD, 2001). Hence, the more complex a corporate structure is, the more challenging and costly it becomes to reconstruct a paper trail. Sharman (2010), however, argues that no matter how complex the web is constructed, the possibility exists to track the ultimate beneficiary. Consequently, offshore jurisdictions, financial intermediaries and TCSPs are vulnerable to outside pressure and can reveal client identity documentation under the right circumstances. The jurisdictions that provide the opportunity for individuals to mask their identity behind corporate vehicles while constraining authorities from receiving or exposing information on real ownership increases the vulnerability of misusage among corporate vehicles (OECD, 2001). In other words, anonymity is guaranteed by the complexity of shell company structure and the secrecy laws of offshore jurisdictions. *Hence, high levels of complexity and bank secrecy laws in shell corporate structures create opportunities for the existence of fraudulent activity.*

## 2.2. Relationship between control and ownership[3]

In order for an investigator to establish a link between a shell corporation and a third party in interest, the relationship between control and ownership needs to be understood (Van der Does de Willebois et al., 2011). This knowledge is a prerequisite in order to attain insights into who is involved in an illegal activity, who is in control and who ultimately gains. To do so, legal ownership and beneficial ownership should be differentiated. The FATF (2012, p. 110) defines beneficial owner (BO) as the actual person who exercises ultimate effective control over a legal body or an arrangement, or the person on whose behalf transactions are conducted. This has several noteworthy elements. Firstly, the BO can only be a natural person rather than a legal person. An asset owned by the latter – a corporation – is in itself always controlled by the latter – an actual person. Due to this, the legal body can only refer to a corporate vehicle. Secondly, beneficial ownership implies a degree of control over an asset from which the BO derives utility. Essentially, the BO may not always be on the scene, since it may appear that the assets in question belong to someone else. Hence, legal ownership is irrelevant, whereas control is relevant.

Defining control legally poses a challenge since it is very context dependent (Van der Does de Willebois et al., 2011). For instance, the control in shell companies can be limited by shares, and any party bearing shares, such as shareholders or board of directors could qualify as having the ultimate control. Although a single corporation has a relatively straightforward structure, by adding alternative types of corporate vehicles complexity is increased, which can be problematic. For instance, trusts cannot be owned and control is not transparent. In support of this, compliance officers suggest that all standard parties to the trust such as the trustee, the settlor and the beneficiary have a role to play and should be investigated. The main point is that the BO can be found by identifying parties who exercise ultimate effective control over a legal matter. According to the FATF methodology (2006), this involves identifying individuals who have a controlling interest and actively participate in management. Hence, ownership is only relevant when control can be inferred from it. The assumption that ownership is a proxy for control should be further analyzed. In a U.S. context, besides possessing voting securities, Section 405 of the Exchange Act (U.S. Federal Government , 1934) implies that it is possible to exercise control using non-traditional methods. For instance, external parties (without legal title)

---

[3] This section uses terms which are defined in the glossary section.

have the ability to exercise control given that they have contractual rights, convertible securities or financial derivatives. Hence, not only parties with sizeable shares and voting rights have control over a corporation.

Consequently, if a web of shell corporations and complex offshore structures are concealing a legal person that has committed fraud, this does not guarantee that the actual BO will be found. Assuming that the legal person is in fact a multinational company, publicly available information displays who has the ultimate effective control, such as shareholders, board of directors, etc. This suggests that the BO of the company is not necessarily the individual involved in a fraudulent activity (Porta, Silanes, & Shleifer, 1998). Hence, it could be that a lower-ranked individual within the company is the only one in control of the business relation referred to as the ultimate solicitor. The aforementioned shows that the strategy to investigate the natural person who committed fraud is costly and time-consuming. At the very least this strategy presents a cost-benefit analysis which is rather difficult due to the absence of heuristics (Verret, 2010). Therefore, the focus should lie on finding the parties exercising the ultimate effective control over a corporate vehicle or the assets within the entity. *This discussion extends the idea that the complexity of an offshore structure coupled with control shared between multiple parties further creates opportunity for fraudulent activities.*

### 2.3. Transactions, Interactions and Attractiveness

In order to determine the likelihood of fraud to occur, risk factors or events known as "red flags" are generally analyzed. Prior researches have used "red flags" to create logit models to predict the likelihood of fraudulent activities (Albrecht & Romney, 1986). Furthermore, Loebbecke (1989) estimated a predictive model to list risk factors as suggested by the Statement of Auditing Standards (SAS) 53. Risk factors represent a different aspect of the fraud triangle theory, which are grouped under pressure, opportunity and rationalization (Zimbelman et al., 2012). The use of shell corporations creates means for the opportunity aspect since their anonymous nature produces risk factors. In other words, the utilization of complex offshore structures provides opportunities of specific authorized parties to engage in fraudulent accounting reporting. Consequently, two "red flags" can be identified – related party transactions (RPT) and complex financial scheme (CFS) (Lou & Wang, 2009). Young (2005) suggests that RPTs have allegedly shown that related entities can be used to commit fraud and manipulate financial data. Due to

this, the international accounting standards IAS 24 and IFRS require that all entities disclose any information regarding transactions and interactions between two related parties. However, the anonymous nature of shell corporations allows the mitigation of those laws. Hence, it could be argued that RPTs between entities and shell corporations is plausible, however, not directly identifiable.

Walker and Unger (2009) approach the fraud issue from a macro perspective, but by specifically targeting money laundering problems. Relative to other known methods (Levi & Gold, 1994; Schneider, 2006), the "Walker" model is considered to have a well-established theoretical background as it combines different aspects from economics, criminology, and finance. For instance, the Levi and Gold model (1994) has been heavily criticized for double-counting (overestimating) the number of suspicious transactions – its primary statistic. Furthermore, the Schneider's model (2006) although marked by sophisticated statistical analysis, lacks a respectable theoretical grounding. The aforementioned models have limited practical applicability due to the complexity of the topic. However, they all suggest large financial losses due to fraud. For instance, the Walker model (2009) estimates that over half of the money associated with crime has been laundered in Australia though financial schemes. Moreover, according to the Walker model (2009) laundered funds are attracted to a specific location depending on how attractive it is. The attractiveness estimate is a composite of variables which take into account the legal regulations, attitude and stability of a specific jurisdiction. The same analogy can be applied to shell corporations. Van der Does de Willebois et al. (2011) suggest that most plaintiffs prefer to use shell corporations which are in jurisdictions with stable economic conditions, high banking secrecy profile and offshore jurisdictions. In support to this, rational choice theory of crime suggests that the decision to commit fraud involves a cost benefit analysis (Simpson, Piquero, & Paternoster, 2012). In other words, when creating shell structures with the intent to commit fraud, fraudsters will likely choose a location that will provide the highest benefit at the lowest cost.

# 3. Data and Methodology

## 3.1. Sample Selection and Data

Broadly speaking, the methodology of this study involves matching the statistics (i.e. size, number of transactions with shell companies, etc.) of firms that are known to have committed fraud and those that have not. To conduct the research, only public firms will be investigated as there are many restrictions to gather information regarding the operations and transactions of private firms. Samples are to be collected from international stock exchange bureaus such as NYSE, TASE, and London Stock Exchange (LSE). Through this the data will not be limited to one specific jurisdiction, but will have an international focus instead. Nevertheless, some of the firms need to be filtered out since not all fraud cases involve shell corporations. Hence, the most appropriate method would be non-probability convenience sampling (Babbie, 2009). Even though probability sampling is generally considered to be a better way of ensuring the representativeness of the population, the chosen sampling method provides the researcher with the desired research population (Babbie, 2009).

Internal data must first be obtained to filter out the firms dealing with shell entities and firms that have offshore structures in the business model. The data collection can be attained via interviews of directors and managers or though looking at the firm's private dealings. To avoid unnecessary friction with crime and ethics, the information required should be just enough to get a general idea of the financial interaction between the firm and the offshore structures. This allows for the identification of all parties with which the sampled companies are interacting[4], such as debtors, suppliers, clients, etc. Careful financial analysis is needed in order to be determined whether those parties have any legitimate operations or are just shell entities used to conceal certain transaction activities. Once the public registers and names of the parties are known it can be easily determined whether they are in fact shell corporations or not. Since no public databases regarding beneficial ownership information are yet available, due to reasons explained above, this research will utilize leaked offshore databases. One such example is the Investigative Consortium of Investigative Journalists (La Nacion Costa Rica, 2015) offshore leaks database which covers nearly 30 years of ownership data (until 2010) about private and

---

[4] It should be noted that the term interaction refers to the cash inflows from and cash outflows to the above-mentioned parties (Hall, 2011).

public companies created in offshore jurisdictions such as the British Virgin Islands, the Cook Islands and Singapore, to name a few. Moreover, since TCSPs and financial institutions will be expected to have established the shell companies, information from them can also be obtained. However, as TCSPs are expected to be uncooperative and as the costs of breaking secrecy laws and regulations are high, they will usually generate low response rates (Sharman, 2010; Findley, Nielson, & Sharmon, 2012).

The second step involves the matching of firms. Fraud firms that make use of shell companies are matched with non-fraud firms that make use of corporate vehicles. This procedure is necessary in order to establish a control sample which differs from the fraudulent firms only by the analyzed concepts described in the next section. Thus, Beasley (1996) suggests that control firms are matched with fraudulent firms relative to their assets size, year, trade market, and industry. It should also be noted that the firms are matched based on the year that precedes a fraudulent event. This is due to the fact that many financial restatements are done during the year of the fraudulent event which could affect the final results (Lou & Wang, 2009). Moreover, to avoid "oversampling" choice-based bias, the actual frequency of fraudulent firms must first be estimated (Zmijewski, 1984). According to Zmijewski (1984) this adjustment is needed to properly represent the class distribution of a data set. In this case, out of the many public firms only some are caught to conduct fraudulent activities. If one fraud firm is matched with one control firm, this will lead to a bias since fraudulent firms are overrepresented. Thus, the ratio of matching fraud firms with control firms must be first known before the actual matching occurs.

### 3.2. Measurements

Based on the literature, three concepts can be operationalized to estimate a logistic model that quantifies the likelihood of fraud given the regular interaction with shell companies. The concepts are '*Attractiveness*', '*Interaction*', and '*Complexity*'. Firstly, the idea of '*Attractiveness*' and the in-build assumptions are taken from the Walker's model (Walker & Unger, 2009). However, the variable focuses on micro relations and instead of applying a gravity model, factor analysis is employed. The index of attractiveness is refined as follows:

$$Attractiveness = w_1 \times Secrecy + w_2 \times Size + w_3 \times SWIFT + w_4 \times Conflict + w_5 \times Corruption + w_6 \times Distance$$

The *W*'s represent the factor scores of each item and are estimated using the Regression Method (Field, 2009). The selected choice of rotation should be preferably oblique instead of orthogonal. The choice of rotation is important to the extent that the former method allows for the variables to correlate, whereas the latter does not. In order for the most communality to be extracted Field (2009) recommends that literature is consulted beforehand. The results presented by Walker and Unger (2009) and Sharman (2010) do in fact show that highly developed country provide more banking secrecy, have less conflict and are relatively bigger in size. Whereas smaller offshore zones or developing countries do not seem to be popular locations due to the fact that they are not attractive.

Since perpetrators would be interested in attaining the highest level of anonymity, shell structures ought to be located near a jurisdiction offering high levels of secrecy. Defining '*Secrecy*' seems to be problematic, since there is no official way of doing so. For this purpose the Financial Secrecy Index (FSI) is used which consists of 15 indicators (Tax Justice Network, 2013). Each indicator can be grouped under four different dimensions - corporate transparency, cooperation and international standards, tax efficiency and financial regulation, knowledge of beneficial ownership – which quantify the overall level of secrecy. Simply put, secrecy can be seen as the extent to which jurisdictions allow or enable the evasion of regulations and rules.

The *'Size'* of the country in which the jurisdiction is located plays an important role since transactions are hidden with more ease in bigger economies that in smaller economies. To account for all inflows and outflows Size is measured as GNP per capita in constant LCU.

The *'SWIFT'* variable distinguishes between jurisdictions that are members of the international fund transfer network. This item is of importance since the jurisdiction should have the technological means to transfer funds in a fast manner. Hence, countries coded with 0 are non-SWIFT members, whereas countries coded with 1 are SWIFT members.

Lastly, the two factors, corruption and conflict, can be viewed as the instability of a certain jurisdiction. Due to this, high levels of instability can increase the likelihood of deterring perpetrators. The reasoning is that unstable conditions represent a risk of losing money on the one hand, but on the other hand fraudsters can take advantage of the deregulation. The *'Conflict'* variable represents the Global Conflict Risk Index (GCRI) which measures the risk of violent conflict in the upcoming years (Joint Research Center of the European Commission, 2015). The

data includes five structural risk areas which are further subdivided into 4 or 5 indicators. Each area of risk can be seen as a structural driver of conflict. The higher the GCRI is the higher is the expected conflict within a country and hence in a jurisdiction. The *"Corruption"* variable is the refined estimate of Transparency International (Transperency International, 2014), also known as Corruption Perceptions Index (CPI). The CPI aims to capture how corrupt the public sector of a certain country is. Hence, the lower a country's CPI is the more corrupt it is perceived to be. If levels of corruption are high this would scale up the effect of fraud, since perpetrators would take advantage of the situation.

The second concept 'Interaction' looks at two proxies that measure the level of interrelated transactions between firms and shell entities. Both are important factors in determining the nature of transactions as they play a role in the concealment of interest between parties. Moreover, Lou et al. (2009) hypothesized that if the percentage of related transactions is relatively high then the risk of fraud will also be high. The reasoning is that companies, such as Enron (Swartz & Watkins, 2003), have previously used off-the-books partnerships to boost yearly earnings. Following the methodology of Lou et al. (2009) equity investment ratio (*INV%*) and related party transactions (*RPT%*) are taken and operationalized in a way to fit the research at hand. Firstly, the INV% looks at the ratio of total equity invested in shell companies or offshore shell structures to total stockholder equity. Secondly, RPTs are nowadays under strict accounting regulations and easily identifiable, however, shell entities can bypass such legal barriers. Therefore, the adjusted proxy looks at the overall cash flows about shell and offshore party transactions scaled by total cash flows (*SOPT%*). It should be noted that firms generally use revenue recognition methods to display operating results (Palmrose, Richardson, & Scholz, 2004), however, the model makes use of percentage of cash-SOPTs, instead of sales-SOPTs. The reason for this choice is that this research is interested in tracking the flow of money and not in the general manipulation of earnings. Moreover, Durkin (2014) suggests that finding revenue fraud is a difficult task when shell companies are used to create a circular flow of cash and when collusion with third parties exists. Consequently, the focus should be on the flow of money rather than on the revenue bookings.

The last variable '*Complexity*' is analyzed via the use of network analysis and information theory. The concept aims at tracking behavioral patterns to shell structures of

various types. Allen et al. (2014) develop a general approach for understanding structure in complex systems. When referring to "structure" the term should be understood as the totality of quantifiable relationships among the different components comprising a system. In this case, the shell structure can be seen as the system and the different shell companies and interrelated parties as the components comprising the system. According to Bar-Yam (2003; 2004; 2007) complex systems exhibit behavior on multiple dimensions or scales. For instance, (Harmon, et al.) and (Misra, Lagi, & Bar-Yam, 2011) show that financial markets can exhibit small-scale behavior where unrelated investors buy and sell stocks independently from the market trends or large-scale behavior where a pattern of interest takes place such as a market panic. Thus, scale should be understood as the number of entities acting in coordination. Consequently, Allen et al. (2014) use scale-weighted information to measure the level of information shared between components in a system which arises from interrelated behavior. The quantification of scale-weighted information is a necessary step before estimating indices for complexity as it helps characterize a system's structure. The first index is referred to as 'Complexity Profile' which measures the extent to which a system is complex based on the amount of scales in a given system. If the system exhibits a structure on multiple scales then it will score high on its 'Complexity Profile' (Bar-Yam, 2003; Bar-Yam, Harmon, & Bar-Yam, 2013). The second index 'Marginal utility of Information' (MUI) quantifies the extent to which a system can be recreated or characterized using a limited source of information (Allen, Stacey, & Ban-Yam, 2014). This index is important when shell structures are analyzed due to the fact that not every piece of information can be known. As mentioned in the literature review anonymity can mask information, however, this problem can be surrounded by applying the MUI index. To get a clearer picture of how an algorithm can measure complexity, the Cotterill case presented in the introduction of the paper would serve as a good example. The case presents several main parties (W, H, Yuri) which are interrelated with several intermediary parties (i.e. Quita Castle, Lenin Capital LLP, Trotsky Capital LLP, Snowden Properties LLP). Through the use of scale-weighted information the complexity profile will in this case measure the relative importance of each party in the overall transactions. Additionally, based on the number of parties involved in such a scheme the level of complexity will be determined. The MUI index allows the benefit of creating a simulation if some of the information is missing. For instance, if the information about the shell structures in Nevis is not available, MUI can simulate and approximate, based on the available

information, the overall structure. Consequently, scale-weighted information can be applied over this simulation and the complexity profile will be thus measured.

Lastly, the model controls for firm size as the aforementioned matching process is not exact and this leaves a room for error. Previous researches have established that there is a strong correlation between fraud and firm size (Beasly, Carcello, & Hermanson, 1999; Bonner, Palmrose, & Young, 1998). Furthermore, O'Reilly et al. (1998) show that smaller firms have weaker internal controls than larger firms. Consequently, firm size (*SIZE*) is predicted to have a negative correlation with financial fraud (Lou & Wang, 2009) and is therefore chosen as a control variable. After the operationalization and estimation of the aforementioned variables, a binary logistic regression is drawn as follows:

$$FR = \beta_1 \times Attractiveness + \beta_2 \times Interaction + \beta_3 \times Complexity + \beta_4 \times SIZE + \varepsilon$$

The dependent variable 'FR' measures the fraud risk in a firm given its interaction with shell corporations. In other words, the risk quantifies the opportunity of whether or not a fraud can be conducted which is created as a result of dealing with complex network and shell entities. It should be noted that a firm scoring high on risk does not imply that a fraud is taking place within the firm. Moreover, high risk is not causal of fraud, instead the former is an indication that internal controls must be properly managed in order to prevent the causation of the latter and the disappointment of investors.

Referring back to the Cotterill example, one can see how the regressors are playing a role in the overall fraud scheme. Most of the shell companies with which *W* and *H* are interacting with are located in attractive locations. Nevis, BVI and Cyprus are known for the financial secrecy services they provide. One can quickly confirm that the locations of the shell corporations score high on would Attractiveness by looking at the aforementioned estimates. Secondly, Interaction between the main parties and the shell companies seem to be quite high as the %INV is above 50%. According to IFRS standards, ownership and control in a separate entity over 50% should be consolidated with the general firm (Palepu, Healy, & Peek, 2013). Lastly, Complexity can also be observed from the example. More than 10 different parties are taking part in this scheme, which not only form a closed circle but are also very interrelated based on the transactions and legal control relations that they have.

# 4. Conclusion

The theory behind the Walker Model and Information Theory and the reports reviewed by OECD and FATF strongly contribute to the creation of the model exemplified in this research. The three concepts – attractiveness, interaction and complexity – should have a strong influence on measuring fraudulent activities when shell corporations are involved. 'Attractiveness', for instance would provide deeper insights into the locations which are preferred for the concealment of assets. This concept is based on the work of Walker and is tailored to the study of dubious corporate relations. Moreover, this concept is operationalized to establish a micro point of view instead of a macro point of view. Secondly, 'Interaction' takes into account the extent of transactions between the parties of interest. Consequently, this concept would help to look beyond the web of transactions and hidden interactions between shell entities and the firms allegedly committing fraud. Lastly, 'Complexity' analyzes the extent to which a structure of shell corporations and third parties is complex. This concept makes use of information theory and network analysis to quantify the number of parties (such as nominees, officers, master clients, etc.) involved in a typical shell scheme and measures the level of interrelatedness and dependency between each party. The operationalization of this concept has up until now been mostly used in physics and sociology, it nevertheless can provide perspectives of how different parties are intertwined in complex structures on a multiscale basis. Hence, when all three concepts are taken together, they ought to provide a broad picture of the level of risk that a firm is committing fraud given the interaction with shell corporations.

## 4.1. Limitations

The main limitation of this research is the lack of available data or more specifically the lack of resources needed to obtain this data. Hence, as there are many legal barriers to attain information regarding fraudulent schemes involving shell entities this research remained a hypothetical one. Although the proposed methodology could produce conclusive results this remains to be done in the future.

Secondly, due to the constraints outlined above the reliability and validity of the proposed model still need to be examined. Despite the fact that the analyzed concepts have a solid theoretical background, reliability tests such as Cronbach's Alpha would need to be employed to test the overall reliability of the model. Furthermore, the lack of data cannot provide any insights

as to whether the proposed model is internally valid. Hence, even though the model is theoretically verified, without the data it cannot be determined whether there are other factors/biases that affect the dependent variable. Moreover, as there are no goodness-of-fit measures to suggest how the model fits the data, there is no certainty of whether this model *de facto* predicts the risk of fraudulent activities involving shell entities.

Lastly, the literature review which is utilized to conceptualize the three variables stems from various research fields. To a certain extent it is based on subjective reports and empirical evidence rather than a hard based theory. One could argue that this undermines the objectivity of the deductive method of reasoning. However, this could be supported by the fact that there is no fundamental theory involving the mechanics of how to make shell structures with the goal to commit fraud.

## 4.2. Implication and Further Research

This study analyzed three concepts, however, it should be noted that this list is not exhaustive and can be further expanded. For instance, Walker and Unger (2009) suggest that understanding the behavior of criminals would contribute to the overall prediction of illicit funds. By understanding the psychological aspects of how different frauds are applied an algorithm can be constructed to quantify the specifics of a fraud such as costs, risk and alleged parties involved. Prototypes of decision support systems for intelligent agents have already been conceptually modelled to track money laundering by analyzing human decisions and the financial environment (Gao & Xu, 2009). The aforementioned limitations and constraints suggest the need for further research in the area of complex structures employing corporate vehicles to commit fraud. This research can be considered to be an attempt to measure fraudulent activities in a new and alternative way. The proposed model can be seen as a hybrid between well-established methodologies and the quantification of complexity. Due to this reason, it is imperative that this topic is further analyzed. Another point that can be considered worth researching is whether the suggested model can also be applied to corporate vehicles in general instead of only to shell entities.

As discussed in the literature review, most of the analyzed studies took a qualitative approach. Hence, there is a lack of a quantitative approach in the available literature. Even though qualitative reports provide many insights about the factors surrounding the use of shell

vehicles for hiding illegal funds, quantitative methods are needed in order to estimate the costs of such activities. This would provide more accuracy in the transparency of financial information and would thus add value to the economy. Furthermore, financial investigations units can better employ detection and prevention controls to capture perpetrators. In qualitative studies the data and respondents can extensively show multiple ways of how funds are rerouted using shell entities. However, if the data were modelled this would allow the possibility to quantify general trends and specifics of fraudulent schemes involving shell entities. Consequently, the creation of models coupled with the aforementioned suggestion for future research, could lead to the effective estimation of costs to the financial economy.

All of the above, by utilizing the available literature for shell entities, this research was able to produce a methodology that can quantify the level of risk that a firm is involved in a fraudulent activity given the interaction with shell corporations. This was accomplished by analyzing three concepts – attractiveness, interaction, and complexity – which play a vital role in creating opportunities for fraudulent schemes exploiting shell entities. Although this requires further research, the information provided in this paper together with previous studies and the studies suggested for the future could lead to the creation of effective tools on how to combat loopholes within corporate vehicles which allow investors to be deceived and which reduce efficiency within the economy.

# References

Ahmed, A. S., Neel, M., & Wang, D. (2013). Does Mandatory Adoption of IFRS Improve Accounting Quality? Preliminary Evidence. *Contemporary Accounting Research, 30*, 1344–1372.

Albrecht, W. S., & Romney, M. B. (1986). Red-Flagging Management Fraud: A Validation. *Advances in Accounting, 3* , 323-334.

Allen, B., Stacey, B. C., & Ban-Yam, Y. (2014). An Information-Theoretic Formalism for Multiscale Structure in Complex Structures .

Anthony, R. N., Govrindarajan, V., Hartmann, F. G., Kraus, K., & Nilsson, G. (2014). *Management Control Systems.* Berkshire: McGraw Hill Education.

Association of Certified Fraud Examiners . (2002). *Report to the Nations on Occupational Fraud and Abuse* . Austin: Association of Certified Fraud Examiners, Inc.

Association of Certified Fraud Examiners. (2014). *Report to the Nations on Occupational Fraud and Abuse.* Austin: Association of Certified Fraud Examiners, Inc.

Babbie, E. R. (2009). Part 2 The Structuring of Inquiry: Quantitative and Qualitative. In E. R. Babby, *The Practice of SocialResearch* (pp. 89-228). Belmont, CA: Wadsworth Cengage Learning.

Baker, R. W. (1999). The Biggest Loophole in the Free-Market System. *The Washington Quarterly, 22:4*, 29–46.

Bar-Yam, Y. (2003). Dynamics of Complex Systems. *Westview Press*, http://necsi.edu/publications/dcs/index.html.

Bar-Yam, Y. (2004). Multiscale variety in complex systems. *Complexity*, 9 (no. 4), 37-45.

Bar-Yam, Y. (2007). Multiscale complexity/entropy. *Advances in Complex Systems* , (7), 47-63.

Bar-Yam, Y., Harmon, D., & Bar-Yam, Y. (2013). Computationally tractable pairwise complexity profile. *Complexity*, 8 (no. 5), 20-27.

Beasly, M. (1996). An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud. *The Accounting Review*, 71(4), 443-465.

Beasly, S. M., Carcello, J. V., & Hermanson, D. R. (1999). *Fradulent Financial Reporting: 1987-1997 An Analysis of U.S. Public Companies.* Jersey City, NJ: Committee of Sponsoring Organizations of thr Treadway Cmmission, AICPA.

Bonner, S. E., Palmrose, Z.-V., & Young, S. M. (1998). Fraud Type and Auditor Litigation: An Analysis of SEC Accounting and Auditing Enforcement Releases . *The Accounting Review* , 73(4), 503-532.

Buchanan, B. (2004). Money laundering - a global obstacle. *Research in International Business and Finance, 18*, 115–127.

Cotterill, J. (2013, August 15). *Divorce, a "fantastic charade", and offshore finance*. Retrieved from FT Alphaville: http://ftalphaville.ft.com/2013/08/15/1602972/divorce-a-fantastic-charade-and-offshore-finance/?

Davis, A. (2006). Prosecutors Who Intentionally Break The Law . *American University Criminal Law Brief: Vol. 1: Iss 1, Article 2* , 15-27.

Durkin, K. P. (2014, January/February). *Reconstructing the Crime — Lessons Learned on How to Catch A/R Fraud.* Retrieved from abfjournal: http://www.abfjournal.com/articles/reconstructing-the-crime-lessons-learned-on-how-to-catch-ar-fraud/

Field, A. (2009). Chapter 17: Exploratory Factor Analysis. In A. Field, *Discovering Statistics Using SPSS* (pp. 627-685). London: SAGE Publications Ltd.

Financial Action Task Force. (2006). *The Misuse of Corporate Vehicles, Including Trust and Corporate Service Providers.* Paris: FATF/OECD.

Financial Action Task Force. (2012). Glossary. In FATF, *International Standards on Combating Money Laundering and the Financing of Terrorism and Proliferation* (p. 110). Paris: FATF/OECD.

Findley, M., Nielson, D., & Sharmon, J. (2012). *Global Shell Games: Testing Money Launderers' and Terrorist Financiers' Access to Shell Companies.* Brisbane: Political Economy and Development Lab (PEDL).

Floros, I. V., & Sapp, T. R. (2011). Shell games: On the value of shell companies. *Journal of Corporate Finance*, Vol. 17, 850-867.

Gao, S., & Xu, D. (2009). Conceptual modeling and development of an intelligent agent-assisted decision support system for anti-money laundering. *Expert Systems with Applications* , (36), 1493-1504.

Garner, B. A. (2009). *Black's Law Dictionary.* St. Paul, MN: West.

Global Financial Integrity®. (2015). *Anonymous Companies*. Retrieved from Global Financial Integrity : http://www.gfintegrity.org/issue/anonymous-companies/

Global Witness. (2009). *Undue Dilligence: How banks do business with corrupt regimes* . London: Global Witness.

Gordon, R. (2009). *Laundering the Proceeds of Public Sector Corruption.* Washington, DC: World Bank.

Hall, J. A. (2011). *Financial Information Systems.* Mason, OH: South-Western Cengage Learning .

Harmon, D., Aguiar, M. D., Chinellato, D., Braha, D., Epstein, I., & Bar-Yam, Y. (n.d.). Predicting economic market crises using measures of collective panic.

Harwood, E., & Simmons, L. (2012, July 13). The Tenth Anniversary of SOX: Its Impact and Implications For Future Securities Litigation and Regulatory Enforcement Activity. *Bloomberg BNA*, pp. 1-7, VOL. 10, NO. 28.

Hearing before Senate Permanent Subcommittee on Investigations. (2001). Testimony of John M. Mathewson. *Role of U.S. Correspondent Banking in International Money Laundering, S. Hrg. 107-84* (pp. 10-22). Washington D.C.: Committee on Homeland Security and Government Affairs, United States Senate.

IMF, OECD, UN, and World Bank. (2011). *Supporting the Development of More Effective Tax Systems.* A report to the G-20 Development Working Group By The IMF, OECD, UN, and World Bank.

Joint Research Center of the European Commission. (2015). *Data and methodology*. Retrieved from Global Conflict Risk Index: http://conflictrisk.jrc.ec.europa.eu/Methodology

Kinner, M., & Vona, L. W. (n.d.). *Shell Companies.* New York: Fraud Auditing, Inc.

Klein, K. E. (2009, July 14). *Don't Be Tempted by 'Shelf Corporations'.* Retrieved from Bloomberg Business : http://www.businessweek.com/smallbiz/content/jul2009/sb20090714_626511.htm

La Nacion Costa Rica. (2015). *Data caveats and limitations*. Retrieved from The International Consortium of Investigative Journalists: https://offshoreleaks.icij.org/about/caveats

La Nacion Costa Rica. (2015). *Glossary*. Retrieved from The International Consortium of Investigative Journalists : http://offshoreleaks.icij.org/about/caveats#glossary

Loebbecke, J. K., Eining, M. M., & Willingham, J. J. (1989). Auditors' Experience with Material Irregularities: Frequency, Nature, and Detectability. *Auditing: A Journal of Practice & Theory, 9(1)*, 1-28.

...

Lou, Y.-I., & Wang, M.-L. (2009). Fraud Risk Factor Of The Fraud Triangle Assessing The Likelihood Of Fraudulent Financial Reporting. *Journal of Business & Economics Research*, 7(2), 61-78.

M -v- M and Yuri Barkov and others, FD10F0051 (UK High Court (Family Division) August 14, 2013).

Miller, H. S. (n.d.). *21st Century Investment Fraud: Cheerleader Stock Analyst Liability.* Retrieved from Securities Fraud & Investor Protection Resource Center: http://www.securitieslaw.com/downloads/articles/21stCentury-Investment-Fraud.pdf

Misra, V., Lagi, M., & Bar-Yam, Y. (2011). Evidence of market manipulation in the financial crisis. *Tech Rep*.

Nefsky, R. L. (1977). Federal Income Taxation And Real Estate Development: Death Knell for Shell Corporations? *Nebraska Law Review*, VOL. 56, NO. 3, 659-675.

OECD. (2001). *Behind the Corporate Veil: Using Corporate Entities for Illicit Purposes* . Paris: OECD Publications Service.

O'Reilly, V. M., McDonnell, P. J., Winograd, B. N., Gerson, J., & Jaenicke, H. R. (1998). *Montgomery's Auditing.* 12th Edition. New York, NY: John Wiley & Sons.

Palepu, K. G., Healy, P. M., & Peek, E. (2013). Chapter 1: A Framework for Business Analysis and Valuation Using Financial Statements. In *Business Analysis and Valuation: IFRS Edition* (pp. 1-22). Hampshire: Cengage Learning.

Palmrose, Z.-V., Richardson, V., & Scholz, S. (2004). Determinants of Market Reactions to Restatement Announcements. *Journal of Accounting and Economics*, 37(1), 59-89.

Porta, R. L., Silanes, F. L., & Shleifer, A. (1998). Corporate Ownership Around the World. *Harvard Institute of Economic Research*, 1-62.

Reiss, J. (2013). PART III Ethics. In J. Reiss, *Philosophy of Economics: A Contemporary Introduction* (pp. 209-302). New York : Routledge.

Senate Permanent Subcommittee on Investigations. (2006). *Tax Haven Abuses: The Enablers, The Tools and Secrecy.* Washington DC: Committee on Homeland Security and Government Affairs, United States Senate.

Sharman, J. C. (2010). Shopping for Anonymous Shell Companies: An Audit Study of Anonymity and Crime in the International Financial System . *The Journal of Economic Perspectives, Vol. 24, No. 4*, 127-140 .

Simpson, S. S., Piquero, N. L., & Paternoster, R. (2012). CHAPTER 2: Rationality and Corporate Offending Decisions. In A. R. Piquero, & S. G. Tibbetts, *Rational Choice and Criminal Behavior: Recent Research and Future Challenges* (pp. 25-40). New York, NY: Routledge.

Swartz, M., & Watkins, S. (2003). *Power Failure: The inside story of the collapse of Enron* . New York, NY: Doubleday.

Tax Justice Network. (2013). *Methodology* . Retrieved from Financial Secrecy Index: http://www.financialsecrecyindex.com/PDF/FSI-Methodology.pdf

Tihin, M. (2008). The Trouble with Tax Havens: The Need for New Legislation in Combating the Use of Offshore Trusts in Abusive Tax Shelters. *Columbia Journal of Law and Social Problems*, 417-442.

Transperency International. (2014). *Corruption Perceptions Index 2014: In Detail*. Retrieved from Transperency International: The global coalition against corruption: http://www.transparency.org/cpi2014/in_detail

U.S. Federal Government . (1934). Management and Certain Security Holders, 17 C.F.R. subpart 229.405. In *Code of Federal Regulations.* Washington D.C.: Government Publishing Office.

Van der Does de Willebois, E., Halter, E. M., Harrison, R. A., Park, J. W., & Sharman, J. C. (2011). *The Puppet Masters: How the Corrupt Use Legal Structures to Hide Stolen Assets and What to Do About It.* Washington D.C.: The International Bank for Reconstruction and Development / The World Bank.

Verret, J. W. (2010). Terrorism Finance, Business Associations, and the "Incorporation Transparency Act". *Louisiana Law Review, Vol. 70, No. 3*, 857-910.

Walker, J., & Unger, B. (2009). Measuring Global Money Laundering: "The Walker Gravity Model". *Review of Law & Economics 5:2*, 821-853.

Young, B. (2005). Related Party Transactions: Why They Matter and What Is Disclosed. *Corporate Governance Advisor*, 13(4), 1-7.

Zimbelman, M. F., Albrecht, C. C., Albrecht, W. S., & Albrecht, C. O. (2012). *Forensic Accounting.* Canada: South Western Cengage Learning.

Zmijewski, M. E. (1984). Methodological Issues Related to the Estimation of Financial Distress Prediction Models. *Journal of Accounting Research*, 22 (Supplement), 59-82.

## Appendix A – Glossary[5]

**Offshore Entity** – A corporate vehicle such as a company, a trust or a fund created in a low-tax, offshore jurisdiction.

**Trust and Offshore Service Provider (TCSP)** – A firm that provides services in an offshore jurisdiction to incorporate, register and manage an offshore entities or trusts at the request of a client.

**Beneficial owner** – The natural person(s) who ultimately owns or controls a customer and/or the person on whose behalf a transaction is being conducted. It also incorporates those persons who exercise ultimate effective control over a legal person or arrangement.

**Natural Person vs. Legal Person** – The capability of having obligations and rights within a legal system is known as legal personality. It is subdivided into two parts. A natural person is an actual human being, whereas a legal/jurisdictional person/body is groups of individuals participating in some sort of an organization. It can be either public, such as a governmental institution or private, such as business entities or NGOs.

**Shareholders** – Anyone that owns shares and can exercise the attached voting rights to make changes in how a company operates.

**Bearer shares** – Company shares that exist only in certificate form and whoever "bears" the certificate is deemed to be their owner. They allow for anonymous transfers of control.

**Board of Directors** – A group of people who generally exercise an immediate level of control over the company.

**Officer** – A person or a legal party such as a company that plays a role in an offshore entity.

**Executive officers** – The management team that exercises day-to-day control and de facto engages in the transactions and activities of the company.

**Underlying officer** – A person or company who plays a role in an offshore entity but whose name appears behind the name of a nominee.

---

[5] Information is extracted from (Van der Does de Willebois, Halter, Harrison, Park, & Sharman, 2011), (Financial Action Task Force, 2012), (La Nacion Costa Rica, 2015).

**Nominee** – A person or a company that acts on behalf of the beneficial owner of an entity to provide an extra level of secrecy.

**Master Client** – An intermediary or a go-betweener who helps a client set up an offshore entity.

**Sundry Account** – An internal account created by the offshore services firm to record miscellaneous charges of an officer or master client.

**Trust settlor** – A person who creates a trust or transfers assets to an already existing trust.

**Protector** – An advisor to a trust settlor who oversees the work of the trustee.

**Trust** – A legal arrangement in which an individual transfers assets owned by him/her to a trustee.

**Trustee** – A person who holds title to the assets in a trust and is responsible for administering the assets on behalf of the beneficiaries of the trust.

**Beneficiary** – A person who is entitled to certain financial benefits under a trust arrangement. Sometimes beneficiaries are not aware of their role in a trust because the settlor or the trustee have not notified them.

**Ultimate solicitor** – The ultimate controller and beneficial owner who is hidden and the person on whose behalf transactions are conducted.

**Shell, Shelf and Dummies** – Shell companies are commonly confused with shelf and dummy corporations. A shelf corporation, for instance, is created and left to function with no business activity, but has an established credit history. Its sole purpose is to be sold to another party that wishes to avoid the legal procedures involved with the creation of a new company or cannot qualify for a loan (Klein, 2009). Dummy corporations, on the other hand, are companies which are specifically used to serve as a cover-up for certain activities or organizations and usually cannot function independently (Garner, 2009). Nevertheless, the three types of corporations do share numerous similarities. Each of them exists only on paper and provides limited private information. This creates a gap in the paper trail, which constitutes a barrier for government officials to link the entities with particular individuals or corporations.