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The fraud taxonomy in financial reports in the brazilian stock market

La taxonomía del fraude en informes financieros en la bolsa brasileña

A taxonomia de fraudes em relatórios financeiros no mercado acionário brasileiro

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Abstract

Purpose: To explore the types of fraud in financial reports that occur in publicly traded Brazilian companies.

Methodology: The Sanctioning Proceedings (*Processos Administrativos Sancionadores - PAS*) of the Brazilian Securities and Exchange Commission (*Comissão de Valores Mobiliário - CVM*) were analyzed and a taxonomy of frauds was developed.

Results: The following taxonomy is suggested: overestimation of assets, transactions with related parties, diversion of funds to offshore entities, overestimation of loss of asset value (impairment), overestimation of revenue, fictitious revenues, underestimation of expenses.

Contributions of the Study: The study brings to the attention of academics, regulators, investors, and companies the types of frauds committed. Knowledge of the taxonomy of frauds draws the attention of regulators to preventatively seek out these types of frauds in the financial reports disclosed. Discussions on the taxonomy of frauds in financial reports bring to the attention of academics and professionals (accountants, auditors and administrators) the forms that distortions of accounting information can take. For auditors (internal or external) and internal control professionals, the taxonomy of frauds in financial reports allows preventive action to avoid or limit the occurrence of these frauds. The lack of the usual types of frauds in the Brazilian market was found. This research seeks to contribute by exploring the types of frauds in financial reports that occur in publicly traded Brazilian companies.

Keywords: Taxonomy, Fraud in Financial Reports, B³.

Resumen

Objetivo: Explorar los tipos de fraude de información financiera que ocurren en empresas brasileñas que cotizan en bolsa.

Metodología: Se analizaron los Procesos Administrativos Sancionadores (PAS) de la Comisión de Valores Mobiliarios (CVM) y se desarrolló la taxonomía de fraude

Resultados: Sugieren la siguiente taxonomía: sobreestimación de activos, transacciones con partes relacionadas, desvío de fondos a entidades extraterritoriales, sobreestimación de pérdida de valor de activos (deterioro), sobreestimación de ingresos, ingresos ficticios, subestimación de gastos.

Contribuciones del Estudio: El estudio llama la atención de académicos, reguladores, inversores y empresas sobre los tipos de fraude realizados. El conocimiento de la taxonomía del fraude llama la atención del regulador para buscar preventivamente este tipo de fraude en los informes financieros publicados. Los debates sobre la taxonomía del fraude en los informes financieros llaman la atención de académicos y profesionales (contadores, auditores y administradores) sobre las formas que pueden adoptar las distorsiones en la información contable. Para los auditores (internos o externos) y profesionales del control interno, la taxonomía del fraude en los informes financieros les permite actuar preventivamente para evitar o limitar la ocurrencia de estos fraudes. Faltaban tipos comunes de fraude en el mercado

brasileño. Esta investigación pretende contribuir explorando los tipos de fraude en los informes financieros que ocurren en las empresas brasileñas que cotizan en bolsa.

Palabras clave: Taxonomía, Fraude en la Información Financiera, B3.

Objetivo: Explorar os tipos de fraudes em relatórios financeiros ocorridas em empresas brasileiras de capital aberto.

Metodologia: Foram analisados os Processos Administrativos Sancionadores (PAS) da Comissão de Valores Mobiliário (CVM) e elaborada a taxonomia das fraudes.

Resultados: Sugerem a taxonomia a seguir: superestimação de ativos, transações com partes relacionadas, desvio de fundos para entidades offshore, superestimação de perda de valor de ativos (impairment), superestimação de receita, receitas fictícias, subestimação de despesas.

Contribuições do Estudo: O estudo traz ao conhecimento dos acadêmicos, reguladores, investidores e empresas os tipos de fraudes realizadas. O conhecimento da taxonomia de fraudes chama a atenção do regulador a buscar, de forma preventiva, estes tipos de fraudes nos relatórios financeiros divulgados. Discussões sobre a taxonomia de fraudes em relatórios financeiros trazem ao conhecimento dos acadêmicos e profissionais (contadores, auditores e administradores) as formas que as distorções das informações contábeis podem tomar. Para os auditores (internos ou externos) e profissionais do controle interno, a taxonomia de fraudes em relatórios financeiros permite atuar preventivamente para evitar ou limitar as ocorrências destas fraudes. Verificou-se a falta dos tipos de fraudes usuais no mercado brasileiro. Esta pesquisa busca contribuir explorando os tipos de fraudes em relatórios financeiros ocorridas em empresas brasileiras de capital aberto.

Palavras-chave: Taxonomia, Fraudes em Relatórios Financeiros, B3.

1 Introduction

According to PriceWaterhouse Coopers-PwC (2020), the occurrence of fraud has increased in recent years, especially in the period from 2018 to 2019, in all countries, and impacting more agents (individuals or entities) with this type of crime. Nickerson, Muntermann, Varshney and Isaac (2009) defined taxonomy as a set of mutually exclusive elements (dimensions) and collectively with exhaustive characteristics in such a way that each element has one and only one characteristic. In other words, the taxonomy of frauds would be a set of types of frauds, each with unique characteristics so as not to be confused with other types of frauds.

Knowing the types of frauds that occur frequently through a systematic analysis of their typology allows regulators, auditors, investors and external users to be more attentive to this type of occurrence, which varies according to the sector in which the company operates (Gullkvist & Annukka, 2013). According to Beasley, Carcello, Hermanson, and Lapidés (2000), for example, the most common types of fraud in the technology sector involve premature recognition of revenue, while in financial institutions, misappropriation of assets is the most common type.

Some studies classify fraud into types such as manipulation, falsification, or alteration of accounting records, misrepresentation, omission of revenue, overstatement of revenue, fictitious revenue, diversion of funds to offshore entities, capitalization of operating expenses, overstatement of assets, understatement of expenses, understatement of assets, among others

(Gao & Srivastava, 2007; Singleton & Singleton 2010; Gupta & Gupta, 2015). Other studies group fraud into broad categories such as intentional omission of information and misapplication of rules, and then ungroup them into types (Rezaee 2002; Gao & Srivastava, 2007).

These types of fraud found differ from one study to another and it is still possible that market characteristics and the level of application of the rules (level of enforcement) may have an impact on the types of fraud, therefore, the approach intended here for the Brazilian market is timely. The gap in the existence of a taxonomy of frauds aimed at the Brazilian market motivated this research to explore the types of frauds in financial reports that occurred in Brazilian companies traded on the stock market in the period from 2017 to 2021.

If the analysis is based on the frequency of fraud occurrence, in general, Feroz, Park and Pastena (1991) state that fraud occurs mainly in events related to understatement of expenses or liabilities and overstatement of revenues or assets, requiring extra attention from gatekeepers (auditors, audit committees, fiscal and administrative boards). Thus, knowing the types and forms or schemes of fraud in financial reports is relevant for prevention and detection, since it contributes to the preparation of risk planning and work in the search for their detection and investigation (Singleton & Singleton, 2010), especially due to the wide variety of types of fraud.

This research, through the analysis of 130 reports resulting from 111 sanctioning legal cases - PAS of the CVM in the period from 2017 to 2021, identified that less than 25 % of the irregularities judged in the PAS come from financial reports. From the frauds classified as resulting from financial reports, it was possible to identify the formation of a taxonomy of 8 types of fraud: underestimation of expenses, overestimation of revenue, fictitious revenue, failure to create a provision for customer default, overestimation of loss of asset value (impairment), diversion of funds to offshore entities, transactions with related parties, and overestimation of assets.

Therefore, in the Brazilian case, a wide range of channels for expropriating organizational resources can be observed, a characteristic that is challenging for the most varied gatekeepers (auditors, audit committees, fiscal and administrative boards) who are responsible for, among other functions, ensuring the quality of accounting information, internal controls, and risks arising from organizational activities. Thus, given such a diversity of types of fraud that have occurred, it is important to pay special attention to the analysis of audit planning, especially internal auditing, as well as the preparation of the risk matrix.

Additionally, the taxonomy of frauds and their occurrence suggest the types of frauds committed by Brazilian companies listed on B³, also drawing attention to the monitoring carried out by the regulator in the search for promoting preventive actions to predict, identify, avoid, or limit the occurrence of these types of frauds. With the suggested taxonomy, investors are informed of the types of irregularities that the reports disclosed may contain. The regulator can, based on the taxonomy, search for the existence of these types of frauds in the reports. Auditors can use the taxonomy to define the inherent risk of the auditor's work.

In this context, this study is relevant as it contributes to the understanding of how frauds in financial reports occur, advancing the design and development of control measures by organizations and regulatory bodies. Studies dedicated to fraud taxonomy consist of classifying frauds into categories or types, that is, the research classifies the frauds found into groups called fraud categories (Bonner, Palmrose & Young, 1998). In this sense, studies focused on analyzing fraud taxonomy are relevant to identify and classify existing frauds, as well as to point out possible paths for the occurrence of new frauds, assigning them an appropriate classification and improvements in their prevention, such as pointing out ways to better systematize internal controls to mitigate their occurrence (Onwubiko, 2020).

2 Literature Review

2.1 Frauds: Lines of Thought

Much of the research that has fraud as its central theme conducts its analyses based on the classic thinking of Cressey's Fraud Triangle (1953), according to which the dimensions of pressure, opportunity, and rationalization condition the occurrence of this phenomenon and which, according to Cressey (1953), are factors present in every occurrence of fraud. According to Cressey (1953), the perception of opportunity is made possible by the weakness of the internal governance control system, while for Abdullahi and Mansor (2015), it is not necessarily the opportunity itself, but its perception from the point of view of the potential fraudster, given that it allows fraudsters to commit the act.

For Hooper and Pornelli (2010), even if there is pressure, in an environment in which there is greater control and reduced opportunity, fraud in financial reports would not occur, because according to the authors, the inherent susceptibility of the company's accounting to manipulation is related to the internal conditions that can allow fraud to occur, and thus the perception of opportunity to commit it. Among the internal conditions, according to Hooper and Pornelli (2010), the first is related to the nature of the business and the accounting system of the entity, as they can be a source of opportunity for fraud when the company's activity involves a significant number or a chain of related parties, estimation of a significant part of the assets, liabilities, revenues or expenses that are difficult to measure or even isolated, or complex transactions, especially those close to the end of the fiscal year.

The second aspect regarding the perception of opportunity for fraud is related to the internal environment of the company. For Hooper and Pornelli (2010), the opportunity for fraud is affected by the internal culture of the organization and the effectiveness of its internal control. Precise attention to control in both good and bad times, as well as its effectiveness, can limit the possibilities of manipulation of results and fraudulent transactions necessary to reduce the perception of opportunity. The elements – pressure and opportunity – pointed out by Cressey (1957) should also be part of the analysis, since they are part of the *ex ante* and *ex post* occurrence strategy regarding rationalization, which consists of the justifications or arguments that the offender formulates to themselves to engage in the fraudulent act as well as to defend their practice.

For Rezaee (2002), rationalization is related to the trade-off of the costs-benefits of committing a fraud, because according to the author, individuals commit fraud when they are convinced that the cost or punishment (if the fraud is detected) of the fraud is less than the benefits. In the case of fraud in financial reports, there are several examples used as justification for committing fraud, according to Cressey (1957), such as: “everyone does it, why don't I?”; “interpreting the standard/pronouncement, the report is in compliance” or even “I have seen another organization proceed in the same way and the regulator did not position itself against it”. According to the fraud triangle (Figure 1), fraud occurs because motivational situations put pressure on the offender, added to situations called “opportunities” that favor the occurrence and, in this context, the individual creates a justification (rationalization) for carrying out their act, convincing themselves that they are not wrong.

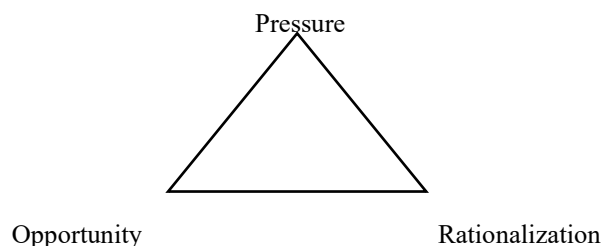


Figure 1 *Fraud Triangle*

Source: *Adapted from Cressey (1953).*

In addition to these three factors that condition fraud according to Cressey (1957); Wolfe and Hermanson (2004), when coining the term fraud diamond a fourth factor can be added: ability. Analyzing such events from the perspective of the fraud diamond, Wolfe and Hermanson (2004) observe that, despite the existence of the three elements indicated by the Cressey triangle (1953), without the ability for its architecture and execution, it is not possible for fraud to occur. The authors suggest that for individuals to commit fraud, they need skills and competencies without which it would not be possible to architect and carry out fraud, whether in a highly monitored environment or not.

According to Wolfe and Hermanson (2004), the ability to commit fraud is the situation of a person having the necessary skills and competence to commit fraud and, therefore, the ability to commit fraud involves several variables or situations, such as: their position or role in the organizational structure, their intelligence or creativity, the individual's ego or confidence, persuasive personality, consistency in arguments, and psychologically strong personality. The first factor that gives an individual the ability to commit fraud is their position or role within the organization with privileges to create or exploit fraud possibilities not available to others (Wolfe & Hermanson, 2004).

According to the Association of Certified Fraud Examiners (ACFE) (2020), fraudsters have a high-class profile, they are individuals who have a stable job and decision-making power within the organization. Another ability to commit fraud is the individual's sufficient intelligence and creativity to identify weaknesses in the internal control system, which consists of the means used by individuals to have permissions beyond what is necessary to carry out the criminal activity (Wolfe & Hermanson, 2004). According to Abdullahi and Mansor (2015), self-confidence and superior status significantly influence the commission of fraud.

Ego or confidence are personalities that make it difficult or impossible to detect fraud (Wolfe & Hermanson, 2004). Suppose an individual who is supposedly a fraudster discovers a flaw in the accounting system by chance; this factor of the ability to commit fraud assumes that this individual will not reveal it, but will take advantage of the situation. When the first three factors (pressure, opportunity, and rationalization) are combined, there will be a greater probability of committing fraud. The persuasive personality of the individual is another ability that favors fraud. They convince or force other individuals to commit or collaborate with fraud (Wolfe & Hermanson, 2004). According to Abdullahi and Mansor (2015), this personality is related to the individual's position or function.

With decision-making power, the fraudster tries not to be subject to the same rules as the rest of the team. This personality is likely to actively participate in financial reporting frauds because it convinces, with an imperative character, how the reports should be presented. Consistency in lying arguments is another characteristic of the ability to commit fraud. According to Wolfe and Hermanson (2004) and Abdullahi and Mansor (2015), the fraudster is

able to look auditors, inspectors, regulators and even justice officials in the eye and lie, a characteristic that is related to the fraudster's selfish and trustworthy personality.

Finally, a psychologically strong personality is the individual's ability to deal with stressful situations related to the detection of frauds committed. According to Wolfe and Hermanson (2004), this characteristic improves over time as the frauds become undetectable. The fraud diamond suggests that fraud occurs because motivational situations put pressure on the offender, other situations called opportunities favor the occurrence, the individual justifies their act by convincing themselves that they are not wrong, and the individual's ability to commit fraud. This last dimension is related to position, function, decision-making power, and other personal characteristics, but linked to their position in the organization. Table 1 shows the difference between the two lines of thought.

Table 1
Fraud Triangle Versus Fraud Diamond

Authors	Thought	Situations that make fraud happen
Cressey (1953)	Fraud triangle	- Pressure - Opportunity - Rationalization
Wolfe & Hermanson (2004)	Fraud diamond	- Pressure - Opportunity - Rationalization - Ability (Position/role, intellectual ability, arrogance/ego)

Source: *Research data.*

2.2 Models and Typologies of Financial Reporting Fraud

This article deals specifically with financial reporting fraud, so the 3Cs model – conditions, corporate structure, and choice (CEE or C2Es in Portuguese) was used to explain the factors (pressure, opportunity, rationalization and ability) that affect the occurrence of fraud. According to Rezaee (2002), financial reporting fraud schemes focus on aspects related to conditions, corporate structure, and choice, hence the name of the model “3Cs” coming from the initials of the terms in English.

According to Rezaee (2002), the model suggests that the occurrence of financial reporting fraud depends on favorable conditions for the existence of fraud, while the corporate structure provides opportunities and motivations, through rewards and gratifications, for senior management to commit financial reporting fraud. Based on ethical utilitarianism, the “3Cs” model advocates that the individual identifies a favorable situation to commit fraud in financial reports and, when faced with the dilemma between faithfully representing events and manipulating them, rationalizes them in order to find a justification that convinces him or her to commit the fraud.

According to Harsanyi (1978), any evaluative judgment based on partial bias or personal criteria is not moral, but rather a judgment of personal preference. The organization commits the infraction under the condition of maximizing the cost/benefit of the fraud, a condition that occurs when the benefits are greater than the costs or punishments. The 3Cs model for detecting fraud in financial reports fits into the fraud diamond because it incorporates the

pressure/motivation and ability factors of the fraud diamond into its conditions factor; the corporate structure factor is related to the opportunity factor; and the model choice factor is related to the rationalization factor.

Revenue overestimation consists of mechanisms or methods used to increase or inflate the amount of revenue actually earned. According to ACFE (2020), revenue overestimation encompasses not only fictitious income, but also premature revenue recognition in addition to inflation of the value of realized revenue. In order to differentiate the practice of inflating the value of revenue, which actually occurred from fictitious revenue, the typology of Gupta and Gupta (2015) seems more appropriate because it presents a non-exhaustive but comprehensive list of this type of fraud in financial statements.

This type of fraud (overestimation of revenue or fictitious revenue), also includes premature recognition of legitimate sales revenue (Mulford & Comiskey, 2005). For Mulford and Comiskey (2005), revenue is said to be fictitious when it is recognized without the occurrence of the generating fact. Improper revenue recognition in the taxonomy of Beasley et al. (2000) groups the types of fraud as overestimation of revenue, while in the taxonomy proposed by Gupta and Gupta (2015), are treated as fictitious revenue. According to Beasley, Carcello, Hermanson and Lápides (2000), this is the most common type of fraud in the sector that commits the most frauds – the technology sector – in the United States.

Investment in shares of companies at a value higher than fair value is the type of fraud related to the procedures by which the entity records its interests in other companies at a value higher than the fair value of the shares of this company. According to Maltsev and Tsarckova (2020), the fair value of the share is the value obtained in an exchange between a seller and a buyer under market conditions. In this fraud, the transaction actually took place at the value reported in the reports, but not at the market value. In this study, this type of fraud was replaced by “violation of other market rules”.

According to Sikka and Willmott (2010), “Diversion of funds to offshore entities” is the type of fraud that occurs when an entity has one or more units of its production and/or marketing process in different countries. This fraud occurs when the entity transfers resources or costs from one unit to another according to its needs and not according to reality. According to the authors, the transfer pricing technique can be used to evade taxes (avoid or reduce the incidence of taxes or fees where the rate is higher) or to transfer profits from one unit to another in the hope of better returns.

According to Murcia and Carvalho (2007), “capitalization of operating expenses” is the typology that consists of considering an operating expense as a fixed asset and proceeding to its capitalization by amortizing it. Through this technique, the fraudster is able to overestimate the results, as well as the assets, recognizing them at a value higher than their real value. According to Bonner, Palmrose and Young (1998), “non-disclosure of transactions” is an omission of transactions in financial reports. The omission of assets or improper disclosures in a report compromises the external user's analysis of the paths taken for the organization to achieve the result obtained and, consequently, the financial indices.

The type of fraud “transactions with related parties” are transactions or manipulations, not authorized by law, in which purchase and sales contracts are entered into between an entity and its parent or subsidiary. In these transactions, the entity is selling itself or buying itself, and the results of these operations are not real, compromising the quality of the result and the indicators analyzed by external users. They treat the “underestimation of expenses” as fraud, since it consists of recognizing the expense at a value lower than the fair value and, as a consequence, overestimating the result, compromising the entity's financial indices.

According to Kim (2020), “asset underestimation” is the fraudulent practice of recognizing an asset at a value lower than its actual value. Entities use this practice out of conservative behavior and with the aim of inflating future profits. According to Gupta and Gupta (2015), “asset overestimation” consists of estimating an asset at a value higher than its actual value, with the aim of demonstrating good liquidity or solvency capacity. According to Beasley, Carcello, Hermanson, and Lápides (2000), the financial sector in the United States is the second most likely to commit this type of fraud. This type of fraud is common and easy to carry out.

The types of fraud presented by COSO (1999), Beasley, Carcello, Hermanson, and Lapides (2000), Rezaee (2002), and Singleton and Singleton (2010) do not cover all the fraud schemes that can be used to deceive the recognition of economic events and disclosure in the financial statements. For example, COSO (1999) did not explicitly present the type “fictitious revenues”, since this typology is contained in the type of fraud “Inadequate revenue recognition”, which also includes cases of overestimation of revenues. The fraud typology of Beasley, Carcello, Hermanson and Lapides (2000) does not include cases of underestimation of assets and capitalization of expenses.

Rezaee (2002) and Singleton and Singleton (2010) presented macro-types of frauds that include several types. However, this taxonomy makes it impossible to visualize the real types of frauds. For example, the first type of fraud of Rezaee (2002) includes types such as “fictitious revenues”, “diversion of funds to offshore entities”, and “capitalization of operating expenses”. The fourth type of fraud according to Singleton and Singleton (2010) includes types such as “investment in company shares at a value higher than fair value”, “capitalization of operating expenses”, and “transactions with related parties”.

Due to the characteristics highlighted, it is clear that for the taxonomy used by Gupta and Gupta (2015), although not as extensive as that presented by Gao and Srivastava (2007), the former covers possible fraud schemes in financial reports through ten types of fraud and, therefore, are used as a classification standard in this research. The two main fraud trends (fraud triangle and fraud diamond) deal with fraud in general. In this section, specific thoughts on fraud in financial reports and the types found in the literature are presented.

Fraud models present tools for occurrence, identification and detection, providing theoretical support for typifying and classifying them. It is in this scope that the study of fraud typology contributes as a way of presenting the phenomenon in detail, with its particularities in a specific market or place. More than a simple list of frauds, the typology of frauds provides insights into the risks of fraud in the market, contributing to the work of audit planning and making it more efficient in the allocation of its resources (it helps to identify possible irregularities more clearly) and also ensures greater technical support in the judgments of regulators or the judiciary.

3 Methodological Procedures

This work is qualitative and exploratory in nature (Hair, Babin, Money; Samuel, 2005; Bauer & Gaskell, 2008) with a view to exploring the most frequent types of frauds that occur in the Brazilian stock market. Initially, the study sought to understand why the practices are considered fraudulent and then classifies them into groups. The qualitative approach seeks to understand the processes studied based on their contexts and not only on the object (Bauer & Gaskell, 2008). In this sense, laws and/or normative instructions served as support in understanding the frauds. To this end, official data and documents published on the CVM website were collected.

Data collection was carried out following the procedure of the Nascimento (2020) database, which consists of proceedings (legal cases) that have been fully judged and accused by the CVM of fraud, risk of fraud, with a final determination of corrections in the reports of the accused entity. According to Nascimento (2020), access to cases judged by the CVM is undertaken on the agency's website following the procedure: CVM website (<https://conteudo.cvm.gov.br/>) > Proceedings > Advanced search. In the “Term” field, blank, “period” from 01/01/2017 to 12/31/2021, and in the “Type” field “judged sanctioning proceedings”.

To identify the types of fraud in administrative legal cases, the taxonomy proposed by Gupta and Gupta (2015) was used, adding two other types of fraud: “overestimation of loss of asset value (impairment)” and “violation of other market rules”. “Overestimation of loss of asset value (impairment)” was suggested by Baraldi, P. (2012) as a fraudulent practice. “Violation of other market rules” are behaviors that violate standards and legislation in the Brazilian market. Table 2 summarizes the research instrument used in data collection, describing each typology and how to identify it in the analysis of the legal proceedings used.

Table 2
Guide to identifying types of fraud

Typology	Description	Identification
Overestimation of revenue	Considering a value higher than the fair value of revenue in the financial statements	Evidence of accounting manipulations with the aim of inflating earnings (part of the earnings can be shown)
Fictitious revenue	Evidence of revenues without a taxable event.	Evidence of fictitious transactions, fictitious invoices, transactions with non-existent customers.
Investment in company shares at a value higher than fair value	Purchases of shares at a value higher than fair value.	Evidence of purchases of shares at a value higher than market value.
Diversion of funds to offshore entities	Transfers of revenues to a unit where there is a lower tax incidence.	Evidence of accounting manipulations in order to make a given unit make profits with the aim of reducing tax incidence.
Capitalization of operating expenses	Treating operating expenses as fixed assets.	Evidence of capitalization of items that do not qualify as fixed assets, that is, do not generate economic benefits for more than 1 year.
Overestimation of assets	Consider a value higher than the fair value of assets in the financial statements.	Evidence of accounting manipulations with the aim of inflating the value of assets.
Non-disclosure of transactions	Concealing transactions.	Evidence of concealment of transactions or failure to disclose financial reports duly characterized in the processes analyzed.
Transactions with related parties	Transactions, purchase and sales contracts with the controlling company and the subsidiary.	Evidence of transfers or receipts under contracts with related parties characterized in the processes as unreliable economic events.

Underestimation of expenses	Consider a value lower than the fair value of expenses in the financial statements.	Evidence of accounting manipulations with the aim of underestimating the value of expenses.
Underestimation of assets	Consider a value lower than the fair value of assets in the financial statements.	Evidence of accounting manipulations with the aim of underestimating the value of assets.
Overestimation of loss in value of assets (impairment)	Consider a value higher than the fair value of revenues in the financial statements.	Evidence of accounting manipulations with the aim of overestimating impairment losses.
Violation of other market rules	Other market irregularities	Evidence of other market rules.

Source: Adapted from Gupta and Gupta (2015).

The time frame for this research is from 2017 to 2021, considering the date of deliberation of the cases. This time frame was chosen because it represents a relatively long time frame and is likely to contain recent occurrences of fraud in financial reports. Considering that this is an exploratory study and that the number of cases judged is relatively large (1,116 cases from 1999 to December 31, 2021), this time frame was chosen with the aim of studying the most recent frauds in the market. The focus was on recent frauds because it is possible that these continue as a practice until the regulator better regulates the economic event to prevent or mitigate its occurrence.

From the first consultation, considering this time frame, 283 administrative sanctioning cases were identified, of which 166 are carried out by financial institutions or investment entities; 4 sanctioning cases are related to frauds committed by individuals (investors) without any link to any entity; and 2 cases acquitted the accused. Given that the analysis focused on the occurrence of fraud in financial statements in non-financial companies, the final sample represents 111 sanctioning cases analyzed.

In some instances, the same case involves the judgment of more than one report (fraud committed in reports from several years) and thus, the 111 cases analyzed here concern a total of 130 accounting reports classified as fraudulent, distributed as follows: 100 cases dealt with only one report (investigation of 100 financial reports), 7 cases dealt with 2 reports from different years (investigation of 14 financial reports), 2 cases dealt with 3 reports from different years (investigation of 6 financial reports) and finally, 2 cases dealt with 5 reports from different years (investigation of 10 financial reports). Table 3 presents the exclusion criteria by sample group of cases.

Table 3
Sample of Sanctioning Proceedings

Sample Groups	Number of cases per sample group	Number of reports analyzed
Initial sample	283	
Cases excluded	(172)	
Financial institution (Banks and investment institutions)	166	
Trial of individuals	4	
Cases in which defendants were acquitted	2	
Cases analyzed	111	

Number of cases that dealt with only one (1) report	100	100
Number of cases that dealt with two (2) reports	7	14
Number of cases that dealt with three (3) reports	2	6
Number of cases that dealt with five (5) reports	2	10
Total	111	130

Source: *Research data.*

In most instances, only one type of fraud is investigated per report, which occurred in 110 financial reports (generating an investigation of 110 frauds). In a few situations, the same case investigates more than one type of fraud in the same financial report, which occurred in 15 financial reports. In these 15 financial reports, 2 types of fraud were identified per report (generating an investigation of 30 frauds). In these situations, during a given accounting period (in the same year) the entity made use of 2 types of fraud. Table 4 presents the final sample of types of fraud identified per financial report. In summary, 140 frauds were identified.

Table 4
Sample/Types of fraud

Fraud type determination by financial report	Number of frauds determined by report
Determination of (1) type of fraud in one (1) financial report 110	110
Determination of (2) types of fraud in one (1) financial report 30	30
Total	140

Source: *Prepared by the authors.*

The first part, accounting schemes, has eleven subtypes and the second part, disclosure schemes, has ten subtypes of fraud, totaling twenty-one types of fraud that occur in the financial market. Based on the taxonomy of fraud in the stock market presented by Gupta and Gupta (2015), other types of fraud were found in the Brazilian market, namely: trading of unregistered securities; failure to disclose financial statements, and manipulation of stock prices, which are also violations of laws and/or market regulatory instructions.

Failure to comply with decisions taken at the Extraordinary General Meeting (EGM) is related to the entity acting contrary to what was decided at the general meeting and disclosed to the market. This is considered fraud because the entity announces that it will take certain measures (usually in favor of the investor) and does the opposite or less than what was decided. For example, an entity that announces the distribution of dividends and at the end of the fiscal year, has not distributed or distributed less than what was announced. This is considered fraud because, according to Pereira, Ely and Shikida (2018), the announcement of dividend distribution would attract investors by increasing the market value of the entity.

Trading of unregistered securities is another type of fraud found in the B³ that consists of an entity trading securities without due registration. In some cases, there is no need for registration for such activity; however, it is necessary to have authorization from the regulator (CVM). In some proceedings, entities begin trading without waiting for the result of the request for exemption from registration. According to Allen and Gale (1992), stock price manipulation consists of a set of buying and selling movements coordinated by an individual or group of individuals with the aim of influencing, increasing, or decreasing stock prices.

Another irregularity found is the failure to disclose statements and/or mandatory public information. This was considered fraud in this study because it reflects the (total) omission of information that could guide investors in their decision-making. From the list of types of fraud

presented by Gupta and Gupta (2015), “investment in company shares at a value higher than fair value”, “capitalization of operating expenses”, and “undervaluation of assets” were not found in the analyzed cases and, for this reason, are not included in the results.

4 Results and Analyses

4.1 Taxonomy of identified frauds

Based on the analysis of the 111 cases that indicated the occurrence of fraud, via cases judged by the CVM, eight types of fraud in financial reports were identified, namely: (1) Overestimation of revenue, (2) Fictitious revenue, (3) Violation of other market rules, (4) Diversion of funds to offshore entities, (5) Overestimation of assets, (6) Transactions with related parties, (7) Underestimation of expenses, (8) Overestimation of loss of asset value (impairment).

Table 5 shows the entities that were judged and found guilty of irregularities (type of fraud) by the CVM.

Table 5

Types of fraud committed by entity

Types of fraud	Entities
Failure to set up a provision for customer defaults	Companhia Energética de Brasília
Capitalization of operating expenses	
Diversion of funds to offshore entities	Indústrias Verolme-Ishibrás S/A.; JBS S/A; Petróleo Brasileiro S.A.
Violation of other market rules (Irregular use of privileged information, Manipulation of share prices, Failure to disclose material facts, Failure to disclose financial statements, Trading in unregistered securities, Failure to comply with decisions taken at the EGM)	Agra Empreendimentos Imobiliários S.A.; BRAZAL – Brasil Alimentos S.A.; Cobrasma S.A.; Companhia Docas de Imbituba; Companhia energética de Minas Gerais CEMIG; Companhia Industrial Schlosser S.A.; Docas de Imbituba S.A.; Drogarias Americanas S.A.; EMAE - Empresa Metropolitana de Águas e Energia; Embraer S.A Enoch Construtora e Incorporadora Ltda Forjas Taurus S.A; GPC Participações S/A; Henry Lourenci Consultoria e Assessoria Ltda Hercules S.A. ; HRT Participações em Petróleo S.A; Invest Tur Brasil – Desenvolvimento Imobiliário Turístico S.A, Latin America Hotels, LLC; JG Petrochem Participações Ltda, , JHSF Participações; S.A Kewalan Empreendimentos e Participações S/A; Lix da Cunha S.A.; Metalúrgica Duque S/A; ML Construtora e Incorporadora Ltda; Multiplus S.A.; Mundial S.A; PDG Realty S.A. Empreendimentos e Participações; RJ Capital Partners S.A; TECBLU – Tecelagem Blumenau S/A; Trivia Empreendimentos Imobiliários Ltda, SPE Hotel Cidade Nova Empreendimentos Imobiliários Ltda; Companhia Melhoramentos de São Paulo; Inepar S.A. Indústrias e Construções; Recrusul S.A.; IGB Eletrônica S/A
Non-disclosure of transactions	Inepar S.A. Indústrias e Construções; Recrusul S.A.; Construtora Sultepa S.A; INEPAR; Minas Máquinas S/A; OGX Petróleo e Gás Participações S.A.; OSX Brasil S.A.; RJCP Equity S.A.; Bahema S.A.; Springer S.A.
Fictitious revenues	Brasil Telecom S.A.; Companhia Iguazu de Café Solúvel
Understatement of assets	

Understatement of expenses	Companhia Aurífera Brasileira S.A.
Overstatement of assets	Cobrasma S.A.; Intellectual Services S.A.; Recrusul S.A.; Companhia Energética de Brasília; IGB Eletrônica S/A
Overestimation of asset value loss (impairment)	Petróleo Brasileiro S.A.
Overestimation of revenue	Rossi Residencial S.A.; Petróleo Brasileiro S.A
Related party transactions	Companhia Iguazu de Café Solúvel; Bahema S.A.; Springer S.A.; Gerdau S.A.; Hidroservice Amazônia S.A; Sultepa Participações S.A; Itaituba Indústria de Cimentos do Pará S/A

Source: *Research data.*

Although the focus is on frauds committed in accounting statements, it is worth noting that, according to the survey carried out, most frauds are not committed in financial reports, and can be classified as non-compliance with other market rules. Of the 140 frauds identified, violations of other market rules account for only 93 %. In legal case 20190129_PAS_RJ2016, the controlling shareholder made free use of the entity's services, which constitutes a violation of the sole paragraph of article 116 of law no. 6,404/1976. In some cases (e.g., 20181204_PAS_RJ2017-863 and 20181127-PAS-26-2010), improper use of privileged information was judged, which violates article 155 of law no. 6,404/1976.

In legal cases SEI_19957007552_2016_43 and 20190226_PAS_RJ2014-4077, article 156 of law no. 6,404/1976 was violated. The article prohibits administrators from intervening in any social operation in which they have conflicting interests with those of the company. In these two cases, the administrators are partners in a service provider of the entity where the irregularities occurred. According to the 3Cs model, in this instance, the favorable condition for the occurrence of fraud is the inconspicuousness of the administrators in the corporate structure of the service provider, and the corporate structure of the entity provides opportunities and motivations for this, seeing its activities with the other entity flow well and, probably, with particular attention.

Article 157 of Law No. 6,404/1976, also violated, as well as Article 12 of CVM Normative Instruction No. 358 of 2002, deal with the duty of administrators to accurately declare the ownership of shares, debentures, purchase options, and subscription bonuses. According to the principles of the 3Cs fraud models, this irregularity in this article would have occurred with the favorable condition of the entity not having expressly made the requirement. In addition, the entity would be providing an opportunity for the irregularity to occur by exempting itself from carrying out periodic inspections. Finally, the entity would be providing reasons for the irregularity to occur, probably by not demonstrating interest in future inspections.

Another irregularity classified as non-compliance with other market rules is the violation of article 20 of CVM normative instruction no. 308 of 1999. According to this article, with regard to professional conduct, the exercise of the activity, and the issuance of audit opinions and reports, auditors must follow the rules of the Federal Accounting Council (*Conselho Federal de Contabilidade* - CFC) and the technical pronouncements of the Brazilian Institute of Accountants (*Instituto Brasileiro de Contadores* - IBRACON). Irregularities in the issuance of opinions, as well as the failure to observe auditor rotation in disagreement with article 31 of CVM instruction no. 308 of 1999, were found in legal cases 20181030_PAS_RJ201513006 and 20190402-PAS-RJ2015-2027.

Other irregularities are classified as this type of fraud when violating some articles of CVM normative instructions. According to article 25 of CVM instruction no. 308/99, when an

auditor finds relevant irregularities in an audited entity, he or she must report the fact to the CVM in writing within a maximum period of twenty days from the date of the finding. This article was violated in case 20190402-PAS-RJ2015-2027. Failure to comply with other market rules may be identified by immoral practices such as breaches of contractual clauses. This is the case where, at the time of the share offering, an entity defined a given percentage to be allocated as mandatory reserves, but applied another percentage.

The type of fraud that occurs most frequently in entities listed on the B³, overvaluation of assets, is the result of the violation of article 183 of law no. 6,404 of 1976, which deals with asset assessment criteria. For three consecutive years, the entity convicted in the SEI_19957009292_2017_21 case has been exempted from setting up provisions for customer defaults that resulted in an overestimation of receivables. This violates article 183 of law no. 6,404 of 1976, according to which rights relating to the company's merchandise, commercial products, and other assets are recorded for the cost of acquisition or production, less any provision for adjustment to market value when this is lower.

According to the 3Cs model, overestimation of assets, especially the failure to set up a provision, occurs because there are favorable conditions for this, such as the subjectivity created by the conceptual framework, which allows the accountant to judge whether or not it is necessary to set up provisions. Another way to overestimate assets with little probability of fraud being detected is to underestimate the value of provisions, as is the case in legal case 2017/RJ20162159. The opportunity for fraud to occur is when customers default, and the motivation may be that there is no formal declaration by customers about the default.

Transactions with related parties are the type of fraud that consists of disguising the true reason for transactions between one entity and another controlled by the first. In case SEI_19957_010686_2017_22, the fraudulent entity recorded a transfer to a related party, disguising the transaction as administrative expenses. To justify this, a consulting contract was signed between the entities. This irregularity violated articles 154 and 157 (cited above) of law no. 6,404 of 1976 and articles 14 and 24 of CVM instruction no. 480 of 2009.

By failing to declare his participation in an entity (where he, his wife, and daughters are the sole shareholders), the CEO of the fraudulent entity, in case SEI_19957_010686_2017_22, violated article 157 of law no. 6,404. By entering into this contract where the related party is the beneficiary, the CEO violated article 157 of law no. 6,404, according to which administrators must act in the interest of the entity. Due to the fact that the entity did not provide true information about the transaction, it violated article 14 of CVM Instruction 480 of 2009, according to which the issuer must disclose true, complete, and consistent information that does not mislead the investor.

Another form of transactions with related parties are back-and-forth transactions (predetermined sales followed by predetermined acquisitions of the same company or related companies), as is the case in legal case 20200630-PAS-19957.001575_2020_21. Transactions with related parties may also be manifested by transactions in which an entity honors the obligations of its subsidiary or parent company. In case 2019/20191203_PAS_CVM_SEI_19957004309_2016_73, the subsidiary exercised the obligation to purchase options in place of its parent company, releasing the latter from its obligation. Transactions of this type violate article 245 of Law No. 6,404 of 1976.

In case 20191210_PAS_19957006209_2016_81-RJ20167499, the transaction with related parties may take the form of loans at a rate much lower than the market rate, favoring controlled entities (in the case of this proceeding) or controllers, thus violating article 245 of Law No. 6,404 of 1976, according to which directors may not, to the detriment of the company, favor an affiliated, controlling or controlled company, and they must ensure that transactions

between companies, if any, strictly comply with commutative conditions, or with adequate compensatory payment.

Although the transaction is not fraudulent, the fact that it omits the information that one of the parties involved is a subsidiary or controller makes this transaction fraudulent and it is classified as a transaction with related parties. This is the case in legal case 2019/20190924-PAS-SP2017-493, where the fraudulent entity violated item 5 of the Accounting Pronouncements Committee (*Comitê de Pronunciamentos Contábeis - CPC 05*), according to which activities with subsidiaries, joint ventures, and associates must be disclosed. The entities listed on B³ overestimate assets by not creating provisions for doubtful accounts, by underestimating provisions or by early recognition of tax credits.

According to the 3Cs model, the individual or entity identifies a favorable situation to commit fraud (lack or little action by the regulator, non-application of penalties or insignificant penalties in relation to the magnitude of the fraud committed, and lack of knowledge of the taxonomy of frauds) and then, when faced with the dilemma between faithfully representing the events and manipulating them, rationalizes (in the end, everyone wins) in order to find a justification that convinces them to commit the fraud. With this approach in mind, the following section sought to understand and analyze the frequency of the types of frauds committed in the financial statements of Brazilian companies listed in the period from 2017 to 2021.

4.2 Frequency of Types of Fraud

In the period analyzed, the types of fraud “violation of other market rules” and “failure to disclose transactions” accounted for 66 % and 10 % of the frauds committed by the companies in the sample, respectively, and constituted the majority of the most common types of fraud committed in the period analyzed. It is worth noting that these types of fraud are not frauds in the financial statements, strictly speaking, given their characteristics. In this sense, considering only the frauds committed in the financial statements, in increasing order of frequency, we have: “overestimation of assets”, “transactions with related parties”, “diversion of funds to offshore entities”, “overestimation of loss in value of assets (impairment)”, “overestimation of revenue”, “fictitious revenues”, “underestimation of expenses” and are summarized in Figure 2 below.

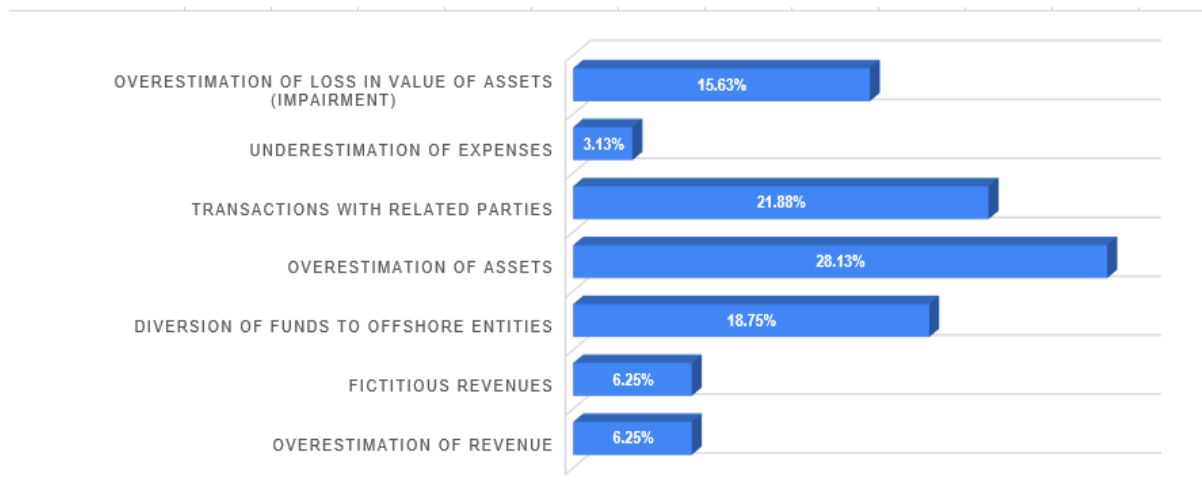


Figure 2 Frequency of types of fraud in companies listed on B³

Source: Research data.

The most common fraud committed in financial statements is the overstatement of assets, a finding that is in line with the results of Bonner, Palmrose and Young (1998) and Beasley, Carcello, Hermanson and Lapedes (2000). Considering only frauds in financial reports themselves, the sectors that committed some type of fraud in the period studied are presented in Figure 2, in which 60 % of the frauds are concentrated in the sectors of “Public Utilities / Electric Power”, “Oil, Gas and Biofuels / Exploration, Refining and Distribution”, “Agriculture, Timber and Paper, Fishing, and Hunting”, “Mining, Extraction, Oil and Gas”, and “Construction” (in decreasing order). Figure 3 presents the distribution of frauds in financial reports by activity sectors and by type of fraud.

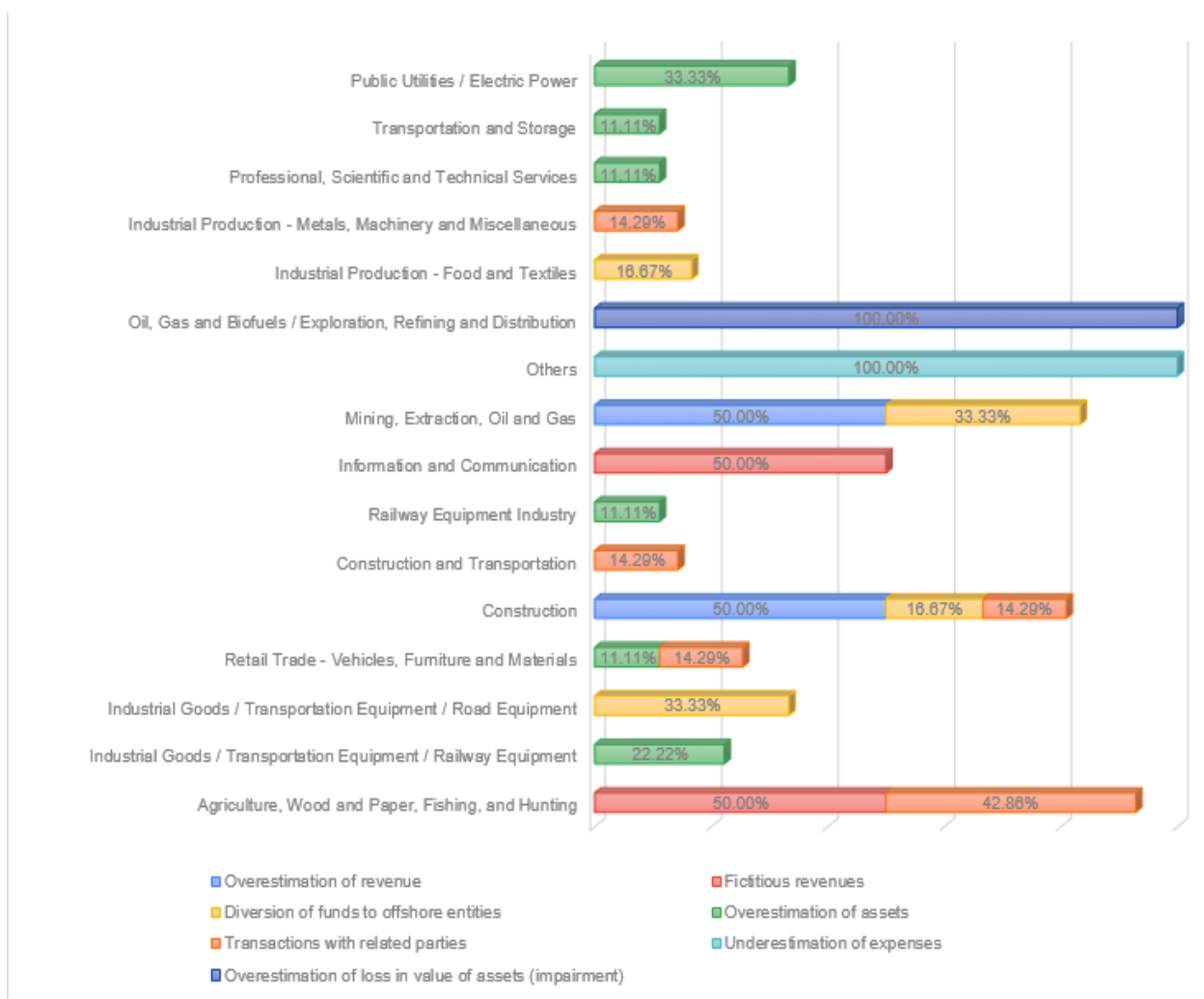


Figure 3 Types of fraud by sector of activity (in %)

Source: Research data.

In addition to the sectors classified as “others”, where all frauds related to the overestimation of expenses are carried out, all frauds related to the overestimation of impairment carried out by the companies in the sample occur in the “Oil, Gas and Biofuels / Exploration, Refining and Distribution” sector. Revenue overestimations occur, in equal parts, between the “Mining, Extraction, Oil and Gas” and “Construction” sectors, just as fictitious revenues occur between the “Information and Communication” and “Agriculture, Wood and Paper, Fishing and Hunting” sectors.

The diversion of funds to offshore entities occurs in four sectors, namely: “Industrial Production - Food and Textiles”, “Construction”, “Mining, Extraction, Oil and Gas” and “Industrial Goods / Transportation Equipment / Road Equipment”. “Asset overstatements” and “related party transactions” are the types of fraud that occur in the most sectors. “Asset overstatements” occur with a frequency of 11 % in four sectors such as “Retail Trade - Vehicles, Furniture and Materials”, “Railway Equipment Industry”, “Professional, Scientific and Technical Services”, “Transportation and Storage”; 22 % in the “Industrial Goods / Transportation Equipment / Railway Equipment” sector; and 33 % in the “Public Utilities / Electric Power” sector. Related party transactions occur in equal proportions of 14 % in the

“Retail Trade - Vehicles, Furniture and Materials”, “Construction”, “Construction and Transportation”, and “Industrial Production - Metals, Machinery and Miscellaneous” sectors and occur most frequently in the “Agriculture, Wood and Paper, Fishing, and Hunting” sector.

4.3 Types of Fraud by Activity Sector

Exploring fraud by activity sector can be a way to study the phenomenon and possibly act to eliminate it, starting with the sector where fraud is most concentrated. According to Beasley, Carcello, Hermanson and Lápides (2000), the sectors that commit the most fraud in financial reporting are: the technology sector, manufacturing sector, transportation and communication sector, administrative services sector, financial/insurance sector, and retail sector.

Following the business sectors of B³ companies presented on the ADVFN (ADVanced Financial Network) website, the 143 fraud events identified in the period were grouped. The Information and Communication, Railway Equipment Industry, and Cyclical Consumer / Miscellaneous / Loyalty Programs sectors commit the least fraud. According to the sample, the sectors in the sample that commit the most fraud are the Construction and Transportation, Accommodation, and Food sectors. Figure 4 shows the distribution of fraud in financial reports by business sectors.

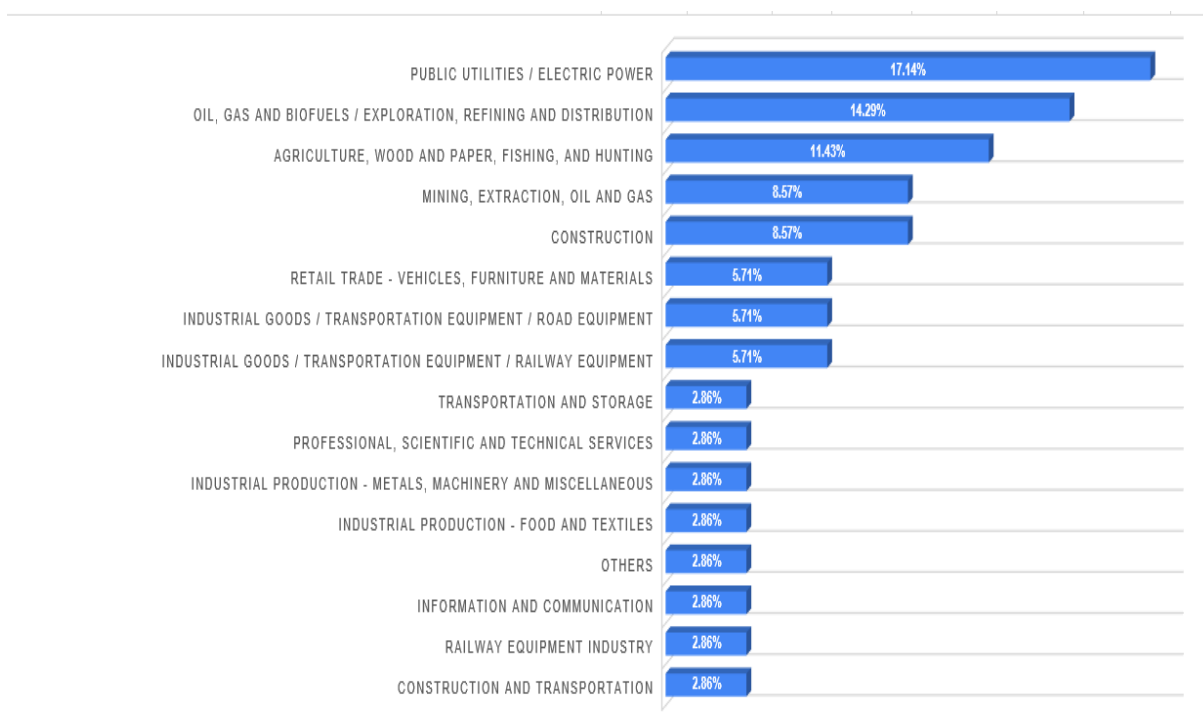


Figure 4 Fraud by sector of activity (in %)

Source: research data.

5 Final Considerations

With the aim of exploring the taxonomy of fraud in financial reports in the Brazilian stock market, the study identified the most frequent types of fraud in the CVM's PAS: “overestimation of assets”, “transactions with related parties”, “diversion of funds to offshore entities”, “overestimation of loss of asset value (impairment)”, “failure to create a provision for customer default”, “overestimation of revenue”, “fictitious revenues”, “underestimation of expenses”. In addition to exploring the taxonomy of fraud in the market, the study aims to help the regulator to identify fraud efficiently in order to avoid its impacts.

To combat fraud, previous studies have proposed combating it within the entity itself with proposals for implementing control systems and internal and external audit committees. However, over time, just as accounting evolves, the forms, strategies and types of fraud may evolve, as well as the perpetrators of the crime. The entity itself can implement an internal control system, form audit committees and continue to carry out fraud. Therefore, the focus in this study is on the regulator.

In order to better understand the occurrence of this event, the typology of frauds provides evidence on the specific characteristics related to disputes occurring in the corporate sphere, highlighting aspects that only through their systematization and analysis make it possible to understand the main paths taken to commit this crime and thus highlight the characteristics and actions necessary to prevent it.

It is likely that these types of frauds or distortions in information, in addition to generating impacts on the market, especially with regard to trust, may be the cause of capital flight. The continuation of the practice depends on the time of detection and the rigor of the regulator; the sooner the fraud is detected and punished with rigor, the less the same entity will commit the same fraud again. This detection and punishment can serve as a warning to other entities.

Research on the subject helps to limit the practice, because the more distortions (taxonomy of frauds) are discussed, the more professionals (accountants, administrators, auditors, etc.) in the market would be aware of them and would try to avoid them before publishing the reports.

Considering that this is an exploratory study, future studies of this type with auditors' perceptions would bring more clarity to the taxonomy of frauds in the Brazilian market. Research with proposals to analyze the impacts of frauds on the capital markets would bring significant contributions to the field of study in Brazil.

Future studies could explore the evolution of the types of frauds in financial reports. Since there are efforts to detect, prevent or limit the consequences of current frauds, it is likely that fraudsters are looking for new forms of fraud. For example, explore the impact of “Non-disclosure of transactions” on entities' reports and stock prices, and explore occurrences of violations of market rules (use of privileged information in an irregular manner, manipulation of share prices, failure to disclose relevant facts, failure to disclose financial statements, trading of unregistered securities, failure to comply with decisions taken at the EGM).

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