

The Effect of Discretionary Accruals on Financial Statement Fraud: The Case of the French Companies

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Abstract

The aim of this paper is to examine the effect of discretionary accruals and governance mechanisms in the occurrence of financial statement fraud. The sample consists of 250 annual reports spanning from 2006 to 2010 for listed French companies, which 45 detected fraudulent company by the Financial Market Authority (AMF). Our findings such that discretionary accruals have a positive effect in corporate fraud, when distinguish between positive discretionary accruals (aggressive accounting policy) and negative discretionary accruals (conservative accounting policy); we provide evidence that aggressive accounting manipulation increases the likelihood of financial statement fraud. By contrast, conservative accounting policy is negatively associate with corporate fraud. Additionally, the outside director and ownership concentration are the most significant variables of governance to explain the corporate fraud.

Keywords: Fraud, Discretionary Accruals, Corporate governance

JEL Classification: G34

1. Introduction

Financial statement fraud is defined as “a deliberate attempt by corporations to deceive or mislead users of published financial statements, especially investors and creditors, by preparing and disseminating materially misstated financial statements” (Rezaee, 2005, p. 279). Financial statement fraud has attracted the attention of the public, press, investors, the financial community, and the regulators owing to many frauds detected such as Lucent, Xerox, Cendant, Enron, WorldCom, Adelphia, and Tyco. These multiple financial scandals show a significant difference between the accounting information disclosed by the managers and the economic reality of companies. According to the Association of Certified Fraud Examiners (ACFE)¹, a corporate fraud worldwide has reached an amount of \$ 3.5 billion in 2011. Given this importance, the topic dealing with the determinants of corporate fraud has attracted a great deal of attention among researchers (e.g. Perols and Lougee, 2011; Jones et al., 2008). Empirical research dealing with this topic has generally focuses the importance of governance mechanisms to detect fraudulent companies (Beasley, 1996; Jia et al., 2009; Lisic et al., 2015).

The corporate governance characteristic such as the board characteristic and the ownership concentration, have been shown to be effective in reducing the likelihood of accounting fraud and to ensure the effectiveness and relevance of financial information submit by companies (Dechow et al.,

¹The ACFE is the world's largest anti-fraud organization and premier provider of anti-fraud training and education with more than 75,000 members. The mission of ACFE is to reduce the business fraud and to assist the membership in fraud detection. (<http://www.acfe.com>).

2011; Jermias and Gani, 2014). Some researches such as Jones et al. (2008) suggests that discretionary accruals which can be explain by the legal space that the accounting principles leave for interpretation, can detect an extreme case of earnings presented as the accounting fraud. According to Dechow et al. (1996) and Hui et al. (2014) find that earnings management is the preliminary step to the violation of accounting principles generally accepted. Firms can manipulate their financial statements by earnings management using discretionary accruals. Thus, companies with high or less level discretionary accruals should deal with the consequences of this manipulation, or commit fraud to compensate the reverse accruals (Beneish et al., 2012; Dechow et al., 2010; Jones et al., 2008). Therefore, the use of accruals to manipulate results over several years can also push managers to enhance all possible manipulations (Perols and Lougee, 2011).

It is important to note that access to these irregularities accounting databases are difficult, consequently the most study dealing with this topic refer usually to U.S. Securities and Exchange Commission (SEC) enforcement actions to present the irregularity action (Agrawala and Chadha, 2005; Beasley and Carcello, 2000; Crutchley et al., 2007). However, this topic remains under-researched in European country, especially France where the AMF² play a critical role to prevent the fraudulent corporate behavior, improve the functioning of the financial system and, raise the investor confidence level (Ball and Shivakumar, 2008). In an attempt to fill the gap, we try the choice of France company, we justify the choice according to recent study in 2014 done by the firm PricewaterhouseCoopers (PWC) conduct that 55% of French companies reported having experienced accounting fraud, these results should not be misinterpreted, the increases of fraud it doesn't necessarily mean that companies are more affected by this phenomenon but, especially shows that companies are more likely to detect financial statement fraud.

Given the crucial role played by the AMF to detect the accounting fraud, it becomes important to understand how different governance mechanisms and management behavior increase or decrease the likelihood of financial statement fraud in French company. Therefore, the main objective of this study is to examine the effect of discretionary accruals on financial statement fraud based on a sample of 250 firms- years observations from the French company indexed CAC All-Tradable over the period 2006–10. In order to make more informative analysis, we examine the effect of the presence and the sign of discretionary accruals on model fraud (the absolute value, positive discretionary accruals and negative discretionary accruals).

Our findings show that discretionary accruals have a positive effect on corporate fraud. When we distinguish between positive discretionary accruals (aggressive accounting policy) and negative discretionary accruals (conservative accounting policy), we provide evidence that aggressive accounting manipulation increases the likelihood of financial statement fraud. By contrast, conservative accounting policies are negatively with corporate fraud. Our findings may help standard-setters and practitioners identify an important factor that contributes to the reduction of financial statement fraud and improve the quality of the information quality disclosed to the stakeholders.

The remainder of this paper is organized as follows. Section 2 summarizes prior research section 3 presents the research hypotheses. Section 4 describes the applied methodology including the sample, definition of variables and model specification. Section 5 discusses the empirical findings. Finally, section 6 concludes the paper.

2. Prior Literature

According to Stolowy and Breton (2003) “a legal interpretation can remain true to the spirit of the standard. It is erroneous, but never fraudulent, this case of earnings management”. Therefore, Fraud present the same objective as earnings management, but differs from earnings management in that fraud is outside of generally accepted accounting principles (GAAP), whereas, earnings management is

² The AMF is an independent public authority that oversees the savings protection and the proper functioning of financial markets in France.

within GAAP (Erickson et al. 2006). Given that firms can manipulate financial statements using accounting practices that are within GAAP or outside of GAAP, we define financial statement manipulation as occurring when managers commit financial statement fraud or manage earnings (or both).

Additionally, the sign of the discretionary accruals traces the accounting policy adopted by the company. In this line, Gietzmann and Ireland (2005) show the different effects of discretionary accruals signal by breaking down the positive and negative signs. In this context, the research of García.Meca and Sánchez.Ballesta (2009) through a Meta-analyzes, find that the absolute value accruals and signs moderate the relation between governance mechanisms and earnings management. Thus, we can conclude that a company adopts two types of accounting strategies: aggressive accounting strategy and, conservative accounting strategy.

In the first case, the manager opts for an aggressive accounting to artificially inflate the results, Therefore, the artificial of the result will push shareholders to demand higher dividends resulting which leads to a depletion of resources company. For creditors, such a fictitious result can provide assurance on the operation of the business continuity and its ability to honor its engagements. In addition, such situation does not reflect the real situation of the company and will induce the users of financial statements with errors (Kamarudin et al. 2012). So, the earning managements are considered as an opportunistic behavior of leaders to mislead the use of accounting information in order to appropriate personal gain or for business needs. Indeed, by engaging in positive discretionary accruals, a rational manager will be aware of the reversible accruals effect. Face this situation, it committee the fraudulent adjustments that allow him to make up these financial statements on the profits of shareholders and investors (Perols and Lougee, 2011).

In the second situation, the manager may choose to conduct for manipulation of down result, and opted for conservative accounting that tends to underestimate a profit and not to mislead users of financial statements in error. For example, the level of depreciation increases which be booked in an accounting period, or overestimating the risk relating to provisions for litigation. In this case, negative discretionary accruals aim to reduce the level of real income. This conservative strategy will have less serious effects on the users of financial statements since it allows avoiding overvaluation of its assets, protecting company assets against exhaustion risk, and reducing the expropriation risk of company's resources. When manager opts for negative discretionary accruals aimed at reducing the level of actual result, this has less serious consequences on resources business and its ability to honor these commitments.

According to Karjalainen (2011), the company adopts a conservative approach to avoid overvalued risk of assets against the creditors and the shareholders. This allows to conclude that opportunistic managers make use of manipulation resulting in discretionary accruals and to hide their poor performance to better conceal their fraudulent activities. These results were also highlighted by Perols and Lougee (2011) assert that when companies seek to achieve analysts forecasts, are more likely to use earnings management for previous years and tend to commit fraud.

3. Hypotheses

For studying the relation between discretionary accruals and financial statement fraud, we test the following hypotheses:

H1: There is a significant relation between the discretionary accruals and the likelihood of financial statements fraud.

H1.a. The positive discretionary accruals (aggressive accounting) increase the likelihood of financial statement fraud.

H1.b The negative discretionary accruals (conservative accounting) decrease the likelihood of financial statement fraud.

4. Research Method

4.1 Models

To examine the effect of the overall discretionary accruals on the accounting fraud model, a logit data analysis is performed for a sample of 250 observations spanning from 2006 to 2010. Our first model (denoted as Model 1) is in line with several empirical investigations concerning the same issue including factors related to the motivations and opportunities, leading to performing fraud in financial statements. It is as follows:

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{DAccit} + \beta_2 \text{SIZE-CA}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{COMPETENCE}_{it} + \beta_5 \text{DUALITY}_{it} + \beta_6 \text{OWN}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{LEVERAGE}_{it} + \beta_{10} \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 1})$$

FRAUD : Binary variable coded 1 if there is fraud in the financial statements, and 0 otherwise, **DAcc**, Value of discretionary accruals for firm *i* in year *t* as measured by the model of Kothari et al. (2005), **SIZE-CA** : Board Size of the firm *i* in year *t*, **INDEP**: Report of the number of outside directors to the total director's number, **COMPETENCE**: Dummy variable equal to 1 if a firm has at least one director who has a professional qualification in accounting or finance, and 0 otherwise, **DUALITY**: Dummy variable equal to 1 if the Chairman of the Board of Directors firms *i* in year *t* is also its CEO, **OWN**: Level of managerial ownership firm *i* in year *t*, **SIZE**: Size of firm *i* in year *t*, measured by the natural logarithm of total assets, **ROA**: Ratio of income before extraordinary items to total assets, **LEVERAGE**: Debt level of firm *i* in year *t*. Ratio of total debt to total assets, **GROWTH**: Revenu Growth = (Revenu *t* – Revenu *t*–1) / Revenu *t*–1, ε_i : The residual value.

In order to improve our first model tests of the impact of the discretionary accruals measure, we have applied a refined analysis. So, after testing the effect of different variables in the first model (Model 1), we eliminate this variable in the second model (Model 2) to review its explanatory power in relation to other variables in the fraud explanation.

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{SIZE-CA}_{it} + \beta_2 \text{INDEP}_{it} + \beta_3 \text{COMPETENCE}_{it} + \beta_4 \text{DUALITY}_{it} + \beta_5 \text{OWN}_{it} + \beta_6 \text{SIZE}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{LEVERAGE}_{it} + \beta_9 \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 2})$$

Furthermore, the sign of discretionary accruals traces the accounting policy of the company. Therefore, in the fifth and sixth model we separate régressions depending on accruals sign and, try to study the effect of the accounting policy on the likelihood to commit fraud. To do that, we distinguish between companies that take a conservative accounting strategy ($\text{AD} < 0$) (Model 3) and companies engaged in aggressive accounting strategy ($\text{AD} > 0$) (Model 4).

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{Positive-DAccit} + \beta_2 \text{SIZE-CA}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{COMPETENCE}_{it} + \beta_5 \text{DUALITY}_{it} + \beta_6 \text{OWN}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{LEVERAGE}_{it} + \beta_{10} \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 3})$$

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{Negative-DAcc}_{it} + \beta_2 \text{SIZE-CA}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{COMPETENCE}_{it} + \beta_5 \text{DUALITY}_{it} + \beta_6 \text{OWN}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{LEVERAGE}_{it} + \beta_{10} \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 4})$$

Finally, Warfield et al. (1995) found that absolute discretionary accruals lean to measure the extent to which managers knowingly pursue techniques to adjust reported numbers. While these measures ignore the effect of the sign of the accruals and the accounting strategy. Therefore, we will examine the effect of the absolute value of discretionary accruals on fraud. In fact, the absolute value of discretionary accruals is a measure of the magnitude of discretionary accruals, irrespective of their signs (Model 5). In addition, to test the moderating effect of discretionary accruals, we include a dummy variable, which equals 1 if the company commits accounting fraud and 0 otherwise to test the effect of discretionary accruals only for fraudulent companies (Model 6).

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{ABS-DAccit} + \beta_2 \text{SIZE-CA}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{COMPETENCE}_{it} + \beta_5 \text{DUALITY}_{it} + \beta_6 \text{OWN}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{LEVERAGE}_{it} + \beta_{10} \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 5})$$

$$\text{FRAUD}_{it} = \beta_0 + \beta_1 \text{Dummy-AD}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{COMPETENCE}_{it} + \beta_5 \text{DUALITY}_{it} + \beta_6 \text{OWN}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{LEVERAGE}_{it} + \beta_{10} \text{GROWTH}_{it} + \varepsilon_i \quad (\text{Model 6})$$

4.2 Dependent Variable

Several researchers (e.g Albrecht et al., 2008; Albring et al., 2013; Skousen and Wright, 2006) find that the binary variable indicating the presence of fraud is the single most statistically significant and can explain some of total earnings manipulation regularization; This variable is dichotomous and qualitative. It takes the value 1 if the firm is a victim of fraud in the financial statements; otherwise it is set to 0.

FRAUD = 1 if the firm has committed fraud in the financial statements.

FRAUD = 0 otherwise

4.3 Test Variables

4.3.1. Discretionary Accruals

Studies show that managers use discretionary accruals as a way to respond to asymmetric information and agency costs in their private information and strategies for financial information, Choi et al. (2011) and Hasnan et al. (2012). In this regard, in our research of Jones et al. (2008), we evaluate the ability of discretionary accruals model to detect the existence of fraudulent events, in fact through the study of Dechow et al. (1996) it appears that the modified Jones (1995) model is the best, and provides the most reliable estimate of accruals. Kothari et al. (2005), performs a simulation to evaluate the power of Jones model and the modified Jones model and finds that with the measures of discretionary accruals performance improves the conclusions reliability.

$$\frac{ACCR_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta AR_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \alpha_4 ROA_{it} + \varepsilon_{it} \quad (1)$$

ACCR_{it}: Accruals for firm i in year t, **TA_{it}**: Total assets for firm ia t end year t-1, **Δ REV_{it}**: Revenues in year t less revenues in year t-1 for firm I, **Δ AR_{it}**: Changes in accounts receivable, **PPE_{it}**: gross property, plant, and equipment; Property for firm i at end year t, **ROA_{it}**: Return On Assets, **ε_{it}**: Error term for firm j in year t.

The measure of discretionary accruals (DAcc) is the residual of equation (1), It is the difference between actual total accruals (ACCR) deflated by total assets (TA_{it}) and normal accruals estimated by the fitted values of equation (1). The measure of actual total accruals (ACCR) is the difference between net income before extraordinary items and operating cash flows from the statement of cash flows.

$$DAcc = \frac{ACCR_{it}}{TA_{it-1}} - \left[\alpha_0 + \alpha_1 \left(\frac{1}{TA_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta AR_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \alpha_4 ROA_{it} \right]$$

In this context, the quality of financial statements is usually linked to the level of discretionary accruals. A recent study by García.Meca and Sánchez.Ballesta (2009) show the different effects of discretionary accruals signals and the governance mechanisms. So, the signal of discretionary accruals reflects the behavior of the leader towards the expected result. Therefore, in order to improve our model, we distinguish between companies take a conservative accounting strategy (DAcc < 0) and companies engaged in aggressive accounting strategy (DAcc > 0).

4.2 Control Variable

Agency theory suggests that there conflicts of interest and information asymmetry between management and shareholders, these conflicts can explain the corporate fraud (Berle and Means, 1932). Additionally, Empirical studies find that internal control can reduce the probability of frauds (future) (Jensen, 1993), so the weakness of the governance system is an important factor to determinine financial statement fraud. In this section, we review the studies that have analyzed the relationship

between governance mechanisms as the board Characteristic (e.g. board size, outside director, CEO duality, and competence of administration) and the ownership structure.

The control variables included also the financial business characteristics likely affect financial statement fraud: firm performance, firms leverage, firm size and growth.

4.4.1 Corporate Governance Variables

Agency theory suggests that board characteristics can improve the corporate reporting policy through more voluntary disclosure and transparency (Fama and Jensen, 1983). Board size may play an important role in promoting corporate transparency and in directors' ability to monitor and control managers since it increases the pool of expertise and opinions and consequently reduce the probability of manipulation (Jensen, 1993). In addition, when the board dominated by outside members, it ensures the proper functioning and increases the relevance and information reliability provided in the financial statements and consequently reduces the likelihood of financial statements fraud. This is proved by several researchers (Beasley, 1996; Fich and Shivdasani, 2007; Lennox and Pittman, 2010).

In other hand, the agency theory shows that the separation between the function of Chief Executive Officer and chairman of the board help the commission to more effectively monitor managers. Therefore, the CEO duality increases the likelihood of financial statements fraud (Carver, 2014). Additionally, the competence of the administrators is an important factor in ensuring the proper functioning of the Board and its effectiveness (Carcello, 2009). Therefore, there is an important reason to examine the relation between financial expertise and information quality.

The competence of administrations in accounting or in finance allows them to have higher quality monitoring and a better understanding to evaluate the situation of the firms (Xie et al., 2003). The ownership concentration is the proportion of stock controlled by the majority of owners. High level of ownership concentration reduces the transparently and relevance of the information (Lim et al., 2014). Chen et al. (2006) find that ownership structure has an important effect on a firm's propensity to commit fraud. Nevertheless, Beasley et al. (2010), find no significant effect between the percentage of shares held by the majority shareholders and the presence of fraudulent accounting.

4.4.2 Financial Business Characteristics

Firm's financial business characteristics may include financial performance, debt ratio, growth ratio and corporate size. Companies are more likely to manipulate accounting figures when performance is relatively low. For instance, Liscic et al. (2015), Caskey and Hanlon (2013) and Wuerges and Borba (2010) state that high-profitability firms have greater incentives to signal the quality of their performance and their ability to manage risks successfully. Furthermore, Jones et al. (2009) consider that debt ratio may affect accounting manipulations since it describes the financial structure and measures the long-term risk. Thus, companies are more likely to manipulate earnings to avoid contravention of the clauses of debt contracts (Defond and Jiambalvo 1991; Velikonja, 2011).

In addition, the third variable of financial business characteristics is the growth. Empirical evidence asserts that minimizing the fraud risk is associated with the growth stability or beneficence volatility (Albring et al., 2013; Brazel et al., 2009). Perols and Lougee (2011) assert that the financial stability of the company is related to abnormal fluctuations in the growth rate either upward or downward. Consequently, higher growth rates may increase the likelihood of financial misstatement. Finally, large firms are characterized by greater levels of public visibility. Therefore, the empirical evidence on the effect of firm size and corporate fraud affirms that firm size increase the likelihood of financial statements fraud (Fich and Shivdasani, 2007; Lennox et al., 2013; Liscic et al., 2015). Similarly, Watts and Zimmerman (1990) and Cassell et al. (2014) found a significant and positive relationship between firm size and the level of discretionary accruals and they asserts that firms with a large size engage more frequently in the earnings management to avoid the political costs.

The independent variables related the governance mechanisms are summarized in table 1.

Table 1: Variables definitions

Abbreviation	Sign	Variable	Definition	Data source
Board Characteristics				
SIZE-CA	+	Size of Board	Board Size of the firm <i>i</i> in year <i>t</i> , measured by the natural logarithm of the total number of directors	The sanctions publications on the AMF website
INDEP	-	Control by outside directors	Report of the number of outside directors to the total directors' number.	Annual reports from the Euronext
COMPETENCE	-	The competence of members of the Board	Dummy variable equal to 1 if a firm has at least one director who has a professional qualification in accounting or finance and 0 otherwise	Website of firms
DUALITY	+	Dual function	Dummy variable equal to 1 if the Chairman of the Board of Directors firms <i>i</i> in year <i>t</i> is also its CEO.	
OWN	+	Ownership structure	Level of managerial ownership of the firm <i>i</i> in year <i>t</i>	
Financial business characteristics				
SIZE	+	Size of firms	The size of firm <i>i</i> in year <i>t</i> , measured by the natural logarithm of accounting of total assets.	Annual reports from the Euronext
ROA	-	Performance	Ratio of income before extraordinary items to total assets	
LEVERAGE	+	Leverage	The debt level of firm <i>i</i> in year <i>t</i> . Ratio of total debt to total assets	
GROWTH	+	Growth	Revenu Growth = (Revenu <i>t</i> - Revenu <i>t</i> -1)/Revenu <i>t</i> -1	

4.5 Sensitivity Tests

Piot and Janin (2007) use the absolute values of abnormal accruals to measure the overall propensity of earnings management. According to Warfield et al. (1995), absolute abnormal accruals lean to determine the level to which managers knowingly pursue techniques to adjust reported figures. Therefore, we examine the relationship between absolute of abnormal accruals on the fraud model. In this regard, García.Meca and Sánchez.Ballesta (2009) assert that the sign of the discretionary accruals model (absolute versus signed) moderates the relation between corporate governance variables and earnings management. Furthermore, we use a dummy variable which equals 1 if the company committed accounting fraud and 0 otherwise to test the effect of discretionary accruals only for fraudulent companies.

In addition, according to Gietzmann and Ireland (2005) we distinguish between firms adopting aggressive accounting policies from those adopting conservative policies. We do this by adopting a modified Jones (1991) model to estimate discretionary accruals. This captures the net effect of a multitude of accounting choices, and is less subjective than constructing a single dichotomous variable by inspecting and classifying descriptions of accounting policies. Hence, firms with aggressive accounting policies are defined as those making positive discretionary accruals (Model 4), whereas those making negative discretionary accruals are defined as conservative (Model 3).

4.6 Scope of the Research

The findings of this paper have policy implications for practitioners and regulators to reduce the likelihood of corporate fraud, given the crucial role played by discretionary accruals as an important indicator to determine accounting fraud. This research is the first in France to focus on how discretionary accruals and governance mechanisms are evident in fraudulent companies sanctioned by the financial market authority (AMF).

4.7 Sample and Data Sources

The sample of this research consists of French company's groups belonging to the CAC All-Tradable and having adopted international accounting standards from 2005. The period runs for five years during the period of 2006 to 2010. The information collection about companies that commit fraud in their financial statements is performed manually from the document databases published by the newsletters of the AMF "Financial Markets Authority" and they recover based on Euronext and the site management of legal and administrative information. As part of this research, we use the French CAC All-Tradable companies to collect data to validate our assumptions and we exclude banks, insurance companies, and financial institutions, in general, as they are subject to specific rules on accounting. We have subsequently, extracted accounting information of 45 fraudulent companies over the period 2006-2010. The selection of control firms is based on the study of Beasley (1996).

The final sample consists of 250 French firm-year observations.

Table 2: Sample selection

Sample obtaining procedure		
<i>Number of companies sanctioned by the AMF that have commit accounting fraud during the period 2006-2010</i>	85	Fraudulent Companies Firms- Years
<u>Less</u> financial companies, insurance and investment companies	19	
<u>Less</u> companies do not belong to the CAC ALL Tradable	13	
<u>Less</u> property companies	6	
<u>Less</u> companies in which certain information was not available	2	
Total Sample	45	
<u>More</u> control companies	205	Control companies
<i>Data over 5 years (number of observations)</i>		250

5. Empirical Results

5.1 Descriptive Statistics

Descriptive statistics show that discretionary accruals with a mean of (-13.5%) have a maximum of 86% and a minimum of 52%. These results corroborate with the findings of Jones and al. (2008), in another context than France. In addition, the board size presents a mean equal to (2.4068) members, it is relatively high compared to the size considered optimal by Jensen (1993) with a level of seven to eight members. Moreover, the percentage of independent board, has an average of 49% like found in the study of Cassell et al.(2014). Additionally, the majority of companies in the sample has a dual structure of 62% for fraudulent firms, and it's more important and higher than non-fraudulent firms 38%. These results corroborate with studies of Carver (2014) and Hasnan et al. (2012) to show that, there is more duality in the role of CEO duality in fraudulent firms, the same result found in both ratios of quality and competence. The ownership structure presents a mean of 34% and 84% of companies which are majority owned. These results corroborate those with studies conducted so far on the ownership structure in France, French institutional ownership is on mean 25.31%.

Concerning the financial characteristic presented by the company ROA variables with a mean of 5.13% and the variable leverage with a mean of 18.2%, and the variable growth of 21.27%. The firm

size in our sample has a mean of 16.06, this result shows a slight increase compared to that found by Hui et al. (2014).

Table 3: Descriptive statistics

Descriptive statistics for continuous independent variables (N=250)					
Variable	Mean	Sd	Variance	MAX	MIN
DAcc	-0.013	0.105	0.011	0.524	-0.867
SIZE-CA	2.406	0.346	0.119	2.890	1.386
INDEP	0.441	0.229	0.052	1	0
OWN	0.364	0.237	0.563	0.844	0.026
ROA	0.513	0.783	0.006	0.571	-0.253
LEV	0.182	0.152	0.023	0.544	0.001
SIZE	16.064	1.508	2.274	20.772	12.487
GROWTH	0.212	1.341	1.799	16.339	-0.998
Descriptive statistics for dummy independent variables (N=250)					
		Frequency	Percentage	Percentage cumulative	
DUALITY	0	95	38.000	38.000	
	1	115	62.000	100.00	
COMPETENCE	0	40	16.000	16.000	
	1	210	84.000	100.000	

Notes: **DAcc** : Value of discretionary accruals for firm *i* in year *t* as measured by the Kothari et al. (2005) model; **SIZE-CA**: Board Size of the firm *i* in year *t*, measured by the natural logarithm of the total number of directors; **INDEP**: Report of the number of outside directors to the total directors' number; **COMPETENCE**: Dummy variable equal to 1 if a firm has at least one director who has a professional qualification in accounting or finance and 0 otherwise; **DUALITY**: Dummy variable equal to 1 if the Chairman of the Board of Directors firms *i* in year *t* is also its CEO; **OWN**: Level of managerial ownership of the firm *i* in year *t*; **SIZE**: The size of firm *i* in year *t*, measured by the natural logarithm of accounting of total assets; **ROA** : Ratio of income before extraordinary items to total assets; **LEV**: The debt level of firm *i* in year *t*. Ratio of total debt to total assets; **GROWTH**: Revenue Growth = (Revenue *t* - Revenue *t*-1)/Revenue *t*-1.

5.2 Univariate Analysis

Before testing the multivariate analysis, it is necessary to verify the absence of a multicollinearity problem. Gujarati (1988) noted a strong correlation that allows bias estimates of regression. To verify the presence or absence of multicollinearity between the explanatory variables, we calculate the 'Variance Inflation Factors "(VIF), the Pearson correlation coefficients and values of tolerance. To conclude, all VIF have a value less than 10 and the values of tolerance all surplus 0.25 (Myers, 1990). In addition, Table 4 reports bivariate statistical correlations between all variables. The analysis shows that fraud is positively and significantly correlated with discretionary accruals (0.445; $p=0.000$), ownership concentration (0.367; $p=0.000$) and ROA (0.253; $p=0.000$), and significantly negative associated with outside board members (-0.543, $p=0.000$). Such result confirms that high independence members provide less control, thus, more probability of accounting fraud.

Table 4: Pearson Correlation Matrix

	Fraud	DAcc	SIZE-CA	INDEP	DUALITY	COMPE	OWN	ROA	LEV	SIZE	GROWTH
Fraud	1.000										
DAcc	0.445* 0.000	1.000									
SIZE-CA	-0.106 0.093	0.007 0.904	1.000								
INDEP	-0.543* 0.000	0.239* 0.000	0.163* 0.009	1.000							
DUALITY	0.023 0.710	0.030 0.632	0.198* 0.001	-0.126* 0.045	1.000						
COMPET	0.005	-0.091	-0.022	0.111*	0.107	1.000					

	Fraud	DAcc	SIZE-CA	INDEP	DUALITY	COMPE	OWN	ROA	LEV	SIZE	GROWTH
	0.928	0.150	0.721	0.079	0.088						
OWN	0.367* 0.000	0.130* 0.038	0.099* 0.116	-0.234* 0.000	-0.113* 0.073	-0.086 0.171	1.000				
ROA	0.253* 0.000	0.417* 0.000	-0.000 0.996	-0.204* 0.001	0.004 0.949	-0.093 0.141	0.248* 0.000	1.000			
LEV	0.081 0.201	0.115* 0.687	-0.030 0.627	-0.129* 0.040	0.194* 0.002	0.000 0.989	-0.033 0.600	0.035 0.579	1.000		
SIZE	0.013 0.833	0.053 0.399	0.197* 0.001	0.086 0.175	-0.089 0.160	0.025 0.688	0.006 0.916	-0.17* 0.006	-0.133* 0.034	1.000	
GROWTH	-0.067 0.286	0.053 0.399	-0.070 0.268	-0.007 0.909	-0.025 0.684	0.029 0.646	-0.127* 0.044	0.016 0.796	0.100 0.114	0.013 0.836	1.000

Notes: **FRAUD:** Binary variable coded 1 if there is fraud in the financial statements, and 0 otherwise; **DAcc:** Value of discretionary accruals for firm *i* in year *t* as measured by the kothari et al. (2005) model; **SIZE-CA:** Board Size of the firm *i* in year *t*, measured by the natural logarithm of the total number of directors; **INDEP:** Report of the number of outside directors to the total directors' number; **COMPETENCE:** Dummy variable equal to 1 if a firm has at least one director who has a professional qualification in accounting or finance and 0 otherwise; **DUALITY:** Dummy variable equal to 1 if the Chairman of the Board of Directors firms *i* in year *t* is also its CEO; **OWN:** Level of managerial ownership of the firm *i* in year *t*; **SIZE:** The size of firm *i* in year *t*, measured by the natural logarithm of accounting of total assets; **ROA :** Ratio of income before extraordinary items to total assets; **LEV:** The debt level of firm *i* in year *t*. Ratio of total debt to total assets; **GROWTH:** $\text{Revenu Growth} = (\text{Revenu } t - \text{Revenu } t-1)/\text{Revenu } t-1$. **Significant at 10%.**

5.3 Multivariate Analysis

Table 5 displays the multivariate regression results; we test the effect of the discretionary accruals presence on the model of determinants of fraudulent information. We find in our results, that the best performing model is the one who integrates the discretionary accruals variable; this is explained by a high R- squared. In fact, the first regression (Model 1) means to test the effect of discretionary accruals and the corporate governance on the model of accounting fraud. The explanatory power of that model is quite highly adjusted with R- squared equal to (74.41). In addition, the results find that accruals variable is the main determinant of fraudulent financial statements, this variable has a positive and significant effect with a coefficient of (47.988) and statistical t-Student (3.53). As a result, most of companies in our sample are engaged in technical results of aggressiveness in their financial statement.

In the second regression (Model 2) when eliminating the variable of discretionary accruals, the R-squared found value (0.6162) is lower compared to the model 1. Our results are robust and show the effect of the main component of financial statement fraud. This result corroborates with studies of Perols and Lougee (2011). In this line, Dechow et al. (1996) show the significant relation between discretionary accruals and the likelihood of financial statement fraud. In general, our results show that most of governance mechanisms variables such (board size, competence, cumulative) are insignificant. This result is not shocking, through a recent study of Brown et al. (2011) and Beasley et al. (2010), explain that it is difficult to identify the firms most likely to engage in fraud by governance mechanism since most companies use the same governance rules.

However, the variables of outside directors and ownership concentration are significant in most models. This implies that, outside director reduces the likelihood of fraudulent financial statements. Similarly, for the variable ownership concentration increases the probability of making fraudulent financial statements. Furthermore, variables related to financial structure of firms such as the firms' size, debt and performance are insignificant in all models, whereas, the variable "Growth" has a negative sign and it significantly. We can affirm that more companies have highest growth opportunities, more increase in transparency towards external investors are involved. Consequently, the likelihood of fraud in the financial statements is reduced. Daske et al. (2008), show that companies with strong growth opportunities have more investment's chances and require more external financing resources. Therefore, it needs funding to create incentives to improve the quality and relevance of 'published accounting information.

5.4 Additional and Sensitivity Tests

To know the moderating effect of discretionary accruals, we test the effect of the absolute value of discretionary accruals on the fraud model (Model 5); In fact, the absolute value is a measure of the magnitude of discretionary accruals, irrespective of their signs. According to tests conducted discretionary accruals in the financial statements are positively associated to act in an illegal behavior, this is proven by a significant value of adjusted R^2 (0.6394). Indeed, the coefficient of discretionary accrual has a positive sign (7.323) and a Student's t-value (2.54). Excluding signs of discretionary accruals, we observe that the significant variable in this model is the "presence of outside directors" with a coefficient of (-18.311) and a Student's t-value (-5.30), the same result, is found for the concentration of ownership among the majority shareholders, this coefficient is (6.381) with a t-Student estimated (3.22). This implies that, the abstraction of discretionary accruals signs improves the probability of detecting fraudulent information.

In the sixth regression (Model 6), we test the effect of discretionary accruals only for fraudulent companies. Thus, we introduce a binary variable equal to 1 if the company is committed the fraud and 0 otherwise. According to the results found, the discretionary accrual is significantly associated with illegal act. This proves a very significant value of R- squared (0.7388), besides the model does not raise the problem of multicollinearity when the maximum VIF is given value (1.37). Indeed, the coefficient of discretionary accruals is a positive sign (62.963). Therefore, most fraudulent companies are engaged on the aggressiveness accounting techniques. Also, concerning the variable "Growth" measured by the change in turnover, this variable is always significant in our models enacted with a coefficient (-3.587) and Student's t (-2.22). This corroborates with the results found by Cassell et al. (2014) which prove that reducing the risk of fraud is less likely when companies have great potential growth or have more volatile earnings.

Previous studies test only the effect of an aggressive accounting policy and accounting fraud (Kamarudin et al. 2012), or the effect of conservative policy (Wakil and Alam, 2012). Our research is a pioneer in this field because it encompasses all the signs of accruals given the absolute value positive accruals and negative accruals. To prove the test, we will study the effect of conservative accounting policy, measured by negative discretionary accruals on the likelihood of accounting fraud. Through the tests, we found that the R-squared is a weak value (30.70%) with a coefficient of discretionary accrual (-10.11) and a Student's t of (-2.83). This implies that the variable of negative discretionary accruals has a significant effect to commit fraud in the financial statements. Similarly, the variable "Board Size", which has a negative and significant effect on the likelihood to make accounting fraud. Indeed, the coefficient is (-2.025) with a Student's t (-2.08).

We can conclude that the negative discretionary accruals model, which tends to increase expenses and reduce product has an insignificant effect on the likelihood of fraud since the leader respect the precautionary principle. In this regard, this policy, which tends to reduce the accounting results, can lead to a tax adjustment. The latter is qualified as a tax evasion which has less effect on the reaction of investors.

For the fourth model, we tested only the effect of positive discretionary accruals on the likelihood of financial statements fraud. The R-squared value found is (67.77%) and the coefficient of the discretionary accruals is a positive value (53.254) with an estimated Student t- (2.30). In addition, the independence of board is significant with a coefficient (14,198) and t-Student (-2.85), consequence, when there are more members of an independent board, the quality of information will be more relevant and transparent. Similarly, for the variable of ownership concentration among the majority shareholder, with a coefficient of (6.053) and a t-Student value (2.21), the high percentage of control block owned by shareholders helps to increase the likelihood of fraudulent financial statements. We can conclude that the positive discretionary accruals, which tend to increase revenues and reduce costs, have a significant effect on the likelihood to commit fraud as the leader artificially manipulate profits rising.

The table below discussion highlights the following key findings:

Table 5: Logistic Regression

Independent variables	Dependant Variable: Fraud											
	Model 1		Model 2		Model 3		Model 4		Sensitivity tests			
	Overall DAcc		Without DAcc		DAcc < 0		DAcc > 0		Model 5		Model 6	
	Coeff	t-statistic	Coeff	t-statistic	Coeff	t-statistic	Coeff	t-statistic	Coeff	t-statistic	Coeff	t-statistic
Constant	-4.546	-1.11	-4.844	-1.43	-3.455	-0.92	-6.430	-1.11	-4.154	-1.23	-6.674	-1.63
Overall DAcc	47.988***	3.53										
Without DAcc												
ABS_DAcc									7.323***	2.54		
DUM_DAcc											62.963***	3.59
DAcc < 0					-10.113***	-2.83						
DAcc > 0							53.254***	2.30				
SIZE_CA	-0.286	-0.33	0.280	0.36	-2.025**	-2.08	0.239	0.22	0.485	0.62	-0.093	-0.11
INDEP	-12.52***	-3.80	-16.754***	-5.40	-1.743	-0.96	-14.198***	-2.85	-18.311***	-5.30	-14.597***	-4.21
DUALITY	1.287	1.30	0.326	0.50	0.466	-0.62	0.141	0.12	0.378	0.57	0.915	1.07
COMPETENCE	1.789**	1.80	1.422**	1.90	0.751	-0.80	1.469	1.22	1.551**	1.93	1.576	1.59
OWN	6.325***	3.05	5.267***	3.62	1.218	0.73	6.053***	2.21	6.381***	3.89	6.386***	3.22
ROA	-5.180	-1.02	3.758	1.03	-10.69**	-1.78	-1.842	-0.31	-0.438	-0.12	-3.707	-0.80
LEVERAGE	-2.004	-0.81	0.938	0.50	0.061	0.03	0.661	0.21	0.406	0.22	-0.750	-0.33
SIZE	0.179	0.80	0.238	1.32	0.303	1.64	0.339	0.93	0.142	0.80	0.279	1.28
GROWTH	-3.546**	-1.73	-1.963*	-1.66	1.275	1.49	-3.592	-1.27	-2.078**	-1.78	-3.587***	-2.22
F (p-value)	(0.000)		-		(0.003)		(0.000)		(0.011)		(0.000)	
Adj-R-square	0.7441		0.6162		0.3070		0.6777		0.639		0.7388	
Max VIF	1.33		1.31		1.36		1.56		1.32		1.37	
Numbers of observations	250		250		165		85		250		250	

Notes: **DAcc:** Value of discretionary accruals for firm *i* in year *t* as measured by the kothari model (2005); **SIZE_CA:** Board Size of the firm *i* in year *t*, measured by the natural logarithm of the total number of directors; **INDEP:** Report of the number of outside directors to the total directors' number; **COMPETENCE:** Dummy variable equal to 1 if a firm has at least one director who has a professional qualification in accounting or finance and 0 otherwise; **DUALITY:** Dummy variable equal to 1 if the Chairman of the Board of Directors firms *i* in year *t* is also its CEO; **OWN:** Level of managerial ownership of the firm *i* in year *t*; **SIZE:** The size of firm *i* in year *t*, measured by the natural logarithm of accounting of total assets; **ROA :** Ratio of income before extraordinary items to total assets; **LEV:** The debt level of firm *i* in year *t*. Ratio of total debt to total assets; **GROWTH:** Revenue Growth = (Revenue *t* - Revenue *t*-1)/Revenue *t*-1. *Significant at 10%; **significant at 5%; ***significant at 1%.

6. Conclusion

The purpose of this study is to examine the effect of discretionary accruals to determine financial statement fraud, in this regard, we test six models which allow us to know the accruals magnitude on the probability of determining accounting fraud, also we note, that signs of accruals have an important effect, the firms engaged more often in a positive discretionary accrual before being engaged in illegal acts. This is why our study is in the line with the researchers of Beasley et al. (2010), Perols and Lougee (2011) and Trompeter et al. (2013) which show that the important indicator to detect fraud is discretionary accruals.

We notice that previous researches have theoretically related the accounting fraud to the weakness of governance system (Hasnan et al., 2012; Kalbers, 2009; Persons, 2006), this is also found in our study, the outside directors and ownership have a significant effect on the occurrence of fraud. In contrast, most previous researches affirm that the governance mechanisms have no significant effects such as Brown et al. (2011), explain the effect of the regulations and governance characteristics rules are common in all companies, which makes it more difficult to identify companies engaged in fraudulent transactions. In addition, they argue that fraudulent companies may change their board of director and manager. Thus, it's more difficult to identify those which are most likely to engage in fraud. This corroborates with our study, neither size board of directors nor CEO duality, have a significant effect in accounting fraud.

This research is the first in France to focus on how discretionary accruals (the absolute and the different signal) and governance mechanisms are evident in fraudulent companies sanctioned by the financial market authority (AMF). According to Delvaile et al. (2005), states that the objectives of public authorities are to improve the functioning of the financial system and the rising level of investor

confidence. A large stream of research (e.g. Hui et al. 2014, Beneish et al. 2012, Dechow et al. 2011, Jones et al. 2008, Beasley et al. 2010) raise on the question of the fraudulent information detected by SEC (Securities and Exchange Commission). However, little attention has been given to this phenomenon in other places of the world like France. Obviously, cases of fraud in the United States have been widely studied in academic and professional journals.

Among the limitations of this research, in terms of sources of data, we try to identify the fraudulent firms based on the publications issued by the AMF, but we cannot absolutely guarantee the absence of a healthy corporate free of fraud. However, this study could have been enriched by the comparison between two periods, before and after International Financial Reporting Standards (IFRS) adoption, and the effect of IFRS in minimizing the rate of financial statement fraud.

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