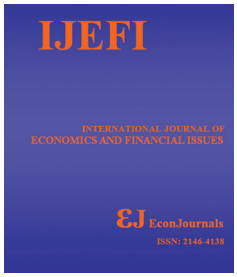

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Earnings Management, Equity-based Compensation, Economic Conjuncture and Governance Mechanisms: A Comparative Study between France and the United States

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ABSTRACT

Based on a sample of 159 French firms and 203 US firms for the period extending from 2003 to 2010, generally, we find that for both cases, managers engage in earnings' management when they have a high percentage of equity-based compensation. The financial crisis was obviously important on managerial behavior and particularly on earnings management. Thus, the economic conjuncture is a new research question for equity compensation when it grants policy and earnings management. In addition, the governance mechanisms used to limit the opportunistic behavior of the manager also comes into play. Then we examine the governance mechanisms which encourage earnings management, particularly during allocation of equity compensation, where these two ideas have not been previously analyzed. We show that in contrast to a period of instability and economic recession, the manager has an incentive to earnings management to maximize his equity-based compensation during the period of economic growth. On the second point of research, we find on the one hand, that a governance mechanism which is effective in controlling earnings management that does not yield this result persists when awarding equity compensation. On the other hand, in the American case, the characteristics of the board of directors, and principally the compensation committee, and the ownership structure in the French case, can limit the opportunistic behavior of the manager during the allocation period of equity-based compensation.

Keywords: Equity Compensation, Earnings Management, Economic Conjuncture, Governance Mechanisms
JEL Classification: G35

1. INTRODUCTION

The agency theory assumes that the monitoring mechanisms can lead to an alignment of interest between the manager and shareholders and reduce opportunistic behavior resulting from the divergence of interests (Alves, 2012). One of these mechanisms, which can reduce the agency problem, is the system of managerial compensation, especially equity-based remuneration.

Over the past two decades, the remuneration by stock options and restricted stocks have become an important element in the manager package, which aims to align the interests between principal and agent, prompting the latter to make creative decisions on value. However, according to Hall and Murphy (2003), this method of payment may have negative effects. In this sense, previous research has shown that a high proportion of equity compensation compared to cash compensation leads to a high likelihood of earnings management (Bergstresser and Philippon, 2006; Efendi et al., 2007; Cheng and Warfield, 2011).

Jiang et al. (2010) highlight the importance of the legal context in monitoring the manager where they tested the impact of the enactment of the Sarbanes-Oxley Act (SOX) on the relationship between earnings management and equity-based compensation received by American managers. In addition to the legal context, we expect that the economic environment is an important factor that we should consider although studies have not addressed this issue before. In fact, according to Bolton et al. (2013), the financial crisis had an impact on the managerial behavior in terms of investment and risk-taking when this situation is characterized by

a period of high instability. In addition, earnings management is an activity related to managerial behavior and therefore the economic conjuncture is a new research question for equity compensation if it grants more policy and earnings incentives.

In addition, we observe that there are two streams of research. The first focuses on the effect of different governance mechanisms, including the board and ownership structure, on earnings management (Denis and McCommell, 2003 and Cornett et al., 2009). The second group, as we mentioned earlier, try to validate the hypothesis of a positive effect between equity pay and managerial opportunistic behavior. However, in this study we combine these two strands of research to determine the mechanisms of governance that can control the managerial opportunistic behavior when granting equity-based compensation where this hypothesis has not been tested previously.

Our study is a contribution to the literature in three main aspects. First, unlike other studies on the subject of the relationship between equity-based compensation and earnings management in general, we perform a comparative analysis between France and the United States. Indeed, these two cases are characterized by different systems of governance (hybrid system of governance vs. market-oriented system of governance) and in particular in terms of ownership structure (concentrated ownership and a strong presence of institutional investors vs. dispersed ownership structure and low presence of institutional investors). Then, we check if the managerial behavior to change the outcome after an allocation of equity compensation depends on economic conditions. Finally, we examine the effect of governance mechanisms on earnings management and in particular during the attribution of equity compensation.

This research is organized as follows. First, we will present a review of the literature to formulate the research hypotheses on the effect of equity compensation on earnings management, on the one hand, taking into account the economic conjuncture; and, on the other hand, on the presence of different governance mechanisms (Section 2). Then, we present the sample and data sources (Section 3). Then we will discuss the models used (Section 4). After that we interpret the results (Section 5). Finally, we conclude this paper (Section 6).

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. Earnings Management/Equity-base Compensation/Economic Conjunctures

The economic impacts of equity-based compensation have been discussed in the literature on incentives. Previous studies have shown that this component of compensation can reduce the agency problem (shareholder/manager) and improve the future firm performance (Kumpulainen, 2010 and Matolcsy et al., 2012).

However, several financial scandals are widely reported in many countries including, France (Société Générale, Valeo) and the US (Enron, WorldCom, Xerox) due to the excessive granting of such compensation. Following these events, the unanticipated impact of equity-based compensation increasing interest. In fact, previous studies assume that the equity-based compensation increases the manager to engage in risky projects (William and Rao, 2006). In addition, a positive association between earnings management and the allocation of such compensation has been demonstrated by the majority of studies (Bergstresser and Philippon, 2006; Meek et al., 2007; Jiang et al., 2010 and Oberholzer-Gee and Wulf, 2012).

For equity-based compensation, there are stock options and restricted stocks. In the first possibility, the exercise price is a crucial factor in determining the value of stock options. In fact, a lower exercise price increases the probability for the manager to exercise these options in a future period. The exercise of stock options-issued price is usually determined from the value of the shares during the vesting period of the options.

Chu and Song (2012) assume that in an environment characterized by asymmetric information, the manager may use earnings management to increase or decrease the stock price to maximize his wealth (decrease share price on the date of grant/increase the share price on the exercise of options). Similarly, Yermack (1996) and Aboody and Kasznik (2000) find that the manager generates the grant date of stock options in a manner such that it converges with a decrease of the equity price generated by a bad news announcement.

The second possibility for equity compensation is the restricted stock, so the problem of exercise price manipulation does not exist. According to Holmstrom and Kaplan (2003) the restricted stocks are an option with a null exercise price. The manager can benefit from these actions in the case of achieving certain conditions, which are generally related to performance determined from the results achieved in the previous year.

Bergstresser and Philippon (2006) assume that the manager can reduce or increase the reported result using different methods of manipulation such as changing the depreciation rate or a change in sales policy.

Researchers in the accounting literature have often focused on the earnings management conducted by the manager, where the latter seeks to achieve explanatory targets based on the results achieved in order to receive bonuses and actions submitted under performance conditions (Healy, 1985 and Burgstahler and Dichev, 1997). Based on the above, we make the following hypothesis:

H_1: There is a positive relationship between equity-based compensation and earnings management.

The recent financial crises (Asian and subprime crisis) have resulted in the birth of the new debate on earnings management during this period, such as studies by Chia et al. (2007), Shen and Chih (2007). However, despite a multitude of studies on earnings management during the crisis, we have not found studies that show the impact of the economic conjuncture (period of economic growth vs. financial crisis/economic recession) on the relationship between earnings management and equity-based compensation.

Babecký et al. (2012) show that for a sample of 40 developed countries, the financial crisis is preceded by economic growth in these countries. In addition, Haber (1990) and Demirgüç-Kunt and Levine (1996) find that there is a positive correlation between development of financial markets and economic growth. This growth is partly explained by an improvement in the performance of firms and the evolution of liquidity in the financial market, where they has a positive impact on the value of shares (Holmström and Tirole, 1993).

However, as we have already mentioned, in the allocation of shares or options a manager characterized by opportunistic behavior is encouraged to reduce the income of the firm and lower the price of shares, relating the good news at a later date and allowing bad news to maximize his wealth. From the above, we can formulate the following hypothesis:

H_{1a}: During the period characterized by economic growth (pre-financial crisis), the manager had an incentive to earnings management following an award of equity compensation.

For the period of the financial crisis, Hashim et al. (2012) argue that this economic conjuncture causes uncertainty and limits firm performance. Therefore, in this case, when a grant of equity compensation, the manager is not motivated for earnings to decrease. In fact, during this period, there is a sharp deterioration in the performance of the firm. In addition, this period is very critical then the manager must demonstrate his willingness to overcome this difficult period during which he should not be opportunistic, where such behavior might cause him to be removed from management or even the bankruptcy of the firm. From the above we can formulate the following hypothesis:

H_{1b}: During the period characterized by a decline in performance of the company (during the recent financial crisis and economic recession) the manager has no incentive to earnings management following an award of equity compensation.

2.2. Earnings Management/Equity-based Compensation/Corporate Governance

As we have already mentioned, previous studies have not tested the relationship between earnings management and equity-based compensation in the presence of different governance mechanisms. In what follows we present the effect managerial control mechanisms on earnings management, we can formulate our research hypothesis on the effect of the allocation of equity-based compensation on earnings management in case of good corporate governance. In this study, we present the corporate governance by the characteristics of the board of directors, the compensation committee and the ownership structure.

The first factor affecting earnings management is the board of directors. According to Marra et al. (2011), the board is generally considered a crucial mechanism for corporate governance that may affect the credibility of financial statements by limiting earnings management. García-Meca and Sánchez-Ballesta (2009) assume that the board's ability to act as an effective control mechanism limiting the opportunistic behavior of the manager depends on its characteristics.

Indeed, based on the perspective of agency theory and previous empirical studies on the relationship between earnings management and the board: We accept on one hand, a separation between the control function and the management function (Dechow et al., 1996; Xie et al., 2003 and Prencipe and Bar-Yosef, 2011); and on the other hand, a board where the members meet continuously (Beasley et al., 2000 and Xie et al., 2003) and have a high percentage of shares of the company (Booth et al., 2003; Bhagat et al., 2008 and Rose et al., 2013), characterized by a reduced size (Dechow et al., 1996 and Peasnell et al., 2000), composed of a large number of independent directors (Xie et al., 2003; Peasnell et al., 2000 and Marra et al., 2011), and a large percentage of women directors (Adams and Ferreira, 2009 and Rodriguez-Dominguez et al., 2009). Such boards are able to exercise effective control in reducing the likelihood of the CEO managing earnings.

The second factor affecting earnings management is the quality of the compensation committee. Vance (1983) argues that the compensation committee has an important role in corporate governance. Davidson et al. (2005) show that the composition of the remuneration committee is likely to affect the willingness of the CEOs to manage earnings. Similarly, Dechow et al. (1996) suggest that the remuneration committee should adjust manager compensation to avoid opportunistic behavior. Based on the suggestion of the agency theory and previous work such as Conyon and He (2004), Sun et al. (2009) and Hoitash et al. (2012), a compensation committee composed entirely of large independent directors and meets frequently, has a significant role to ensure a system of equitable remuneration, which is appropriate to align the interests of the shareholders and the manager, mainly to limit the opportunistic behavior of the latter.

The third factor affecting earnings management is the ownership structure where we limit in this study to the managerial ownership, the presence of institutional investors and the concentration of ownership.

At the level of managerial ownership, based on the agency theory where Jensen and Meckling (1976) assume that the high number of shares of the manager allows an alignment between the agent and the principal. Hence, a manager who holds a large percentage of shares has less tendency to earnings management for private short-term gains. Also, Warfield et al. (1995) found that the manager who has a high percentage of stocks is more likely to report reliable results that reflect the real value of the company. Therefore, managerial ownership is one of the mechanisms of governance (Fama, 1980 and Chung and Pruitt, 1996) that reduce the possibility of earnings management. This idea has been empirically confirmed in several investigations such as Warfield et al. (1995) and Peasnell et al. (2000).

Institutional investors are considered a monitor of whether they can control the manager more thoroughly than minority shareholders (Black, 1992). Institutional investors having a large percentage of shares of the company have the power, resources and the ability to monitor and thus a stronger incentive to control the behavior of the manager (Coffee, 1991). Several empirical studies provide evidence on the link between earnings management

and institutional ownership, where the authors found a negative relationship between these two variables. This suggests that this type of investor is an effective governance mechanism to limit the discretionary behavior of the manager (Yu, 2008 and Cheng and Reitenga, 2011).

On the concentration of ownership, Morck et al. (1988) assume that the shareholders holding a high percentage of shares have a strong incentive to actively monitor and influence the management of the company to protect these interests. Therefore, the concentration of ownership can reduce agency costs and increase monitoring of managerial behavior with its possibility of opportunism (Ramsay and Blair, 1993). This idea supported by agency theory has been validated in several studies such as Leuz et al. (2003) and Roodposhti and Chashmi (2011).

However, our objective in this study is to test the relationship between earnings management and equity-based compensation, in the presence of these different mechanisms which are likely to control the manager. As we have previously developed, there is a positive relationship between earnings management and equity-based compensation. In addition, facing a managerial control effectiveness mechanism, we can expect that in this case earnings management does not accompany the allocation of equity-based compensation. Based on the foregoing, we can formulate the following hypothesis:

H_2: The mechanisms of corporate governance reduce the likelihood of the CEO to manage earnings during granting the stock options and restricted stocks.

3. SAMPLE AND DATA SOURCES

Our study focuses on a sample of French and American companies. For the French case, our initial sample is composed of all the companies belonging to the stock market index CAC all Tradable (250 largest French companies in terms of market capitalization). In the American case, we chose the 300 largest companies in terms of market capitalization and belonging to the stock market index S&P500.

First, we eliminated the financial institutions because they have a different financial structure (36 French companies and 48 US companies). Then, we removed firms where financial data or data related to governance are lacking (55 French companies and 49 US companies). Finally, we use as a final sample 159 French companies and 203 US companies for the period from 2003 to 2010 where the sectorial distribution of firms is presented in Table 1.

We collected data from several sources. Accounting data are collected from the Compustat Global and Compustat North America database. For governance data related to the characteristics of the board of directors, the compensation committee and ownership structure, these are mainly collected manually from the reference documents for the French case and DEF14a Proxy Statement for the US case. However, the US data related to institutional ownership and managerial ownership are collected respectively from the Thomson Institutional Ownership database and Compustat Executive Compensation database.

Table 1: Sectorial distribution of firms

Sample	FR companies	US companies
Initial sample	250	300
Financial companies	36	48
Companies whose data is unavailable	55	49
Final selected companies	159	203
	N (%)	N (%)
Industry (Sec1)	42 (26.41)	53 (26.10)
Consumer goods (Sec2)	28 (17.61)	37 (18.22)
Health (Sec3)	12 (7.55)	16 (7.88)
Services (Sec4)	48 (30.18)	61 (30.04)
Technology and telecommunication (Sec5)	29 (18.23)	36 (17.73)

The table present statistics on the sample selection for the two countries where they are divided in five sectors (Industry [Sec1], consumer goods [Sec2], health [Sec3], services [Sec4], technology and telecommunication [Sec5])

Data related to compensation and in particular the equity-based compensation (stock options and restricted stocks) received by the French and American manager are collected respectively from reference documents and Compustat Executive Compensation database.

4. THE MODELS USED

4.1. Accruals Detection Model

We will identify discretionary accruals (DAs) from the model of Kothari et al. (2005). Unlike the model of Jones (1991) and Dechow et al. (1996) (modified Jones model), Kothari et al. (2005) attempt to improve the explanatory power of the Jones and modified Jones accrual models adjusted by the delayed return on assets (ROAs). According to Kothari et al. (2005), accruals total is determined as follows:

$$AT_{it} = \alpha_0 + \alpha_1 / Assets_{i(t-1)} + \alpha_2(\Delta Sales_{it} - \Delta AR_{it}) / Assets_{i(t-1)} + \alpha_3 PPE_{it} + \alpha_4 ROA_{i(t-1)} + \xi_{it} \quad (1)$$

With:

AT: Represents the total accruals calculated, based on the variation in current assets (excluding the variation in cash), deducting the variation in current liabilities (excluding short-term debt), minus amortization divided by total assets lagged one period[1] (Hribar and Collins, 2002; Bergstresser and Philippon, 2006 and Meek et al., 2007).
Assets: Total assets;
Sales: Change in sales;
ΔAR: Change in accounts receivable;
PPE: Net property, plant and equipment;
ROA: Return on assets determined by the ratio of net income to total assets in period t−1.

As we noted earlier, our sample has firms from different sectors (Table 1) while we conduct a cross-sectional regression (estimated by ordinary least square [OLS]) to determine the coefficients for each sector of activity α_0, α_1, α_2, α_3, and α_4 in accordance

1 With reference to COMPUSTAT data items AT = (Data4 − Data1 − Data5 + Data34 − Data14)/Lagged Data6

with previous work such as Xie et al. (2003), Ecker et al. (2011) and Höglund (2013). The estimation of DAs is presented by the forecast error (difference between the estimated value and the observed value of total accruals).

4.2. The Basic Models

To answer our research questions, we use the following models: In the case of the relationship between earnings management and earnings in shares (H1), based on the studies of Bergstresser and Philippon (2006), Meek et al. (2007), Kuang (2008), Chu and Song (2012), the model is presented as follows:

$$|DA|_{it} = \beta_0 + \beta_1 \left(\frac{Equity.Comp}{Cash.Comp}\right)_{it} + \sum_{k=1}^{k'} \gamma_k \, Cont.Var_{it} + \eta_{it} \quad (2)$$

With:

$|DA|$: The absolute value of discretionary accruals determined by the model of Kothari et al. (2005). In fact, the absolute value of accruals is used as a proxy for earnings management. According to Kuang (2008), the absolute value of DAs is used because it reflects the capacity of the CEO to manage earnings. Therefore, a higher value corresponds to a higher level of earnings management;

Equity.Comp/Cash.Comp: The proportion of equity-based compensation measured by the sum of the values of the options and the restricted stocks granted to the manager, measured by Black andScholes (1973) formula, divided by cash compensation, in accordance with the study of Efendi et al. (2007) and Armstrong et al. (2013);

Cont.Var: Represents a vector of control variables that have an impact on earnings management when they are deduced from previous studies such as Wang (2006), Cheng and Warfield (2011) and Hazarika et al. (2012).

We retain as control variables:

- Firm size (size) measured by the logarithm of total assets;
- Leverage (lev) measured by the ratio of total debts to total assets;
- Growth opportunities (MTB) measured by the market to book ratio;

Dechow and Dichev (2002) and McNichols (2002) show the importance of cash flow in determining accruals. We retain the variable cash flow/total assets (CFO) as another control variable in accordance with the study of Meek et al. (2007).

We test the hypothesis that in good corporate governance the allocation of equity-based compensation is not associated with managerial opportunistic behavior. Therefore, based on the model previously mentioned, and as we have seen that corporate governance has a negative effect on DAs, we integrate in equation (2) a variable measuring corporate governance measured by governance scores. This proxy has been used in previous studies such as Gompers et al. (2003) and Antia et al. (2010). Hence the model can be rewritten in this manner:

$$|DA|_{it} = \gamma_0 + \gamma_1 \left(\frac{Equity.Comp}{Cash.Comp}\right)_{it} + \gamma_2 Score.Gov_{it} + \gamma_3 Score.Gov_{it} * \left(\frac{Equity.Comp}{Cash.Comp}\right)_{it} + \sum_{k=1}^{k'} \gamma_k \, Cont.Var_{it} + \upsilon_{it} \quad (3)$$

With:

$\frac{Equity.Comp}{Cash.Comp}$ and Cont.Var already defined;

Score.Gov: Governance score where the details of the calculation are developed in Table 2.

We use the combined effect between the variables related to equity compensation and corporate governance (Score.Gov*($\frac{Equity.Comp}{Cash.Comp}$)) to test the hypothesis H_2.

5. INTERPRETATION OF RESULTS

5.1. Descriptive Analysis

Table 3 presents descriptive statistics of the main variables used for French and US companies between 2003 and 2010.

For the endogenous variable that presents the absolute value of DAs, there is an average difference of 0.0205 positive which is statistically significant at the 1% level (an average of 0.051 for the French case and 0.03 for the US case). These results are lower than those of Meek et al. (2007) and Jiang et al. (2010) where they found an average of the absolute value of DAs to be respectively 0.08 and 0.07.

For data relating to compensation, the equity compensation ratio relative to cash compensation has an average of 1.71 in the American case against only 0.46 for the French case. This difference can be explained at the legal level where the restricted stocks were introduced in the remuneration package of the French manager only from the year 2005.

Regarding the governance score which combines the characteristics of the board of directors, the compensation committee and ownership structure, it has an average of 24.13 points for the French case against 34.58 points for the US case.

For the control variables, in terms of comparing average, US companies are larger, characterized by low growth opportunity and they have a leverage ratio and a ratio of cash flow compared to the total assets higher than those of French firms.

Tables 4 and 5 present the Pearson correlation matrix for the variables used. For an overview, we note that there is not a high correlation coefficient and then we can infer that there is no multi-collinearity problem in the estimates of the selected models.

Further bivariate analysis of these two matrices enables us to provide some relationships between the main variables. In fact, regardless of the selected sample, the correlation coefficient between the variable on DAs and the ratio of equity compensation and cash compensation is positive and statistically

Table 2: Measurement index of corporate governance

Criteria	Recommendation	Variables	Scores
The composition of the board of directors	The board of directors must be between 6 and 15 members (9-12 is considered ideal)	Bd.Size: Size of the board measured by the number of directors	8 points if the number of directors is between 9 and 12 4 points if the number of directors is more than 12 2 points if the number of directors is between 6 and 8 0 if the number is less than or equal to 5
Separation of chairman and CEO	Control and management functions should be separated	Dual: Dummy variable equal to 1 if the manager is also chairman 0 otherwise	1 point if the functions are separated 0 point if the functions are not separated
Existence of independent directors The percentage of independent directors in the board of directors	The board of directors must be composed mostly of independent directors	Ind.Dir: Presence of independent directors measured by the percentage of independent directors on the board	1 point if there is at least one independent director 0 points if the board is not composed of independent directors 8 points if the percentage of independent directors is higher than or equal to 2/3 4 points if the percentage of independent directors is between 1/2 and 2/3 2 points if the percentage of independent directors is less than 1/2 0 point if the company does not have an independent director
The number of meetings of the board of directors	The board must meet at least once a year	Board.Meet: The meeting of board of directors measured by the number of meetings	2 points if the board of directors meets at least once a year 0 point if the board of directors is not convened
Detailed biography of the board members	The members of the board of directors must be identified by giving their levels and their professional careers and positions they preoccupied		1 point if the directors biography is published 0 otherwise
Presence of director shareholding Shareholding of directors	The members of the board of directors must be shareholders in firms	Owner.Dir: Percentage of shares held by the director	1 point if the directors hold shares 0 points if the directors do not hold shares in the firm 6 points if the directors hold more than 2/3 of the total common shares 3 points if directors hold between 1/3 and 2/3 of the total common shares 2 points if the directors own <1/3 of the total common shares 0 points if the directors are not shareholders
Presence of women on the board	The board must have at least one woman director	Wom.Dir: The percentage of women in the board of directors	2 points if at least 2/3 of board members are women 1 point if the percentage of women is less than 2/3 0 points if there are no women in the board
Presence of compensation committee	The firms must have a compensation committee	RC: Dummy variable equal to 1 if the company has a compensation committee and 0 otherwise	1 if the firm has compensation committee 0 points if the company does not have a compensation committee

(Contd...)

Table 2: (*Continued*)

Criteria	Recommendation	Variables	Scores
The size of the compensation committee	The compensation committee should include more than six directors	RC.Size: Size compensation committee measured by the number of directors	3 points if the number of directors is higher than 6 2 points if the number of directors is between 3 and 5 0 points if the number of directors is less than or equal to 2
Presence of independent directors in the compensation committee	The compensation committee is fully independent	Indep.RC: Percentage of independent directors	4 points if the compensation committee is composed fully of independent directors 2 points if the compensation committee is composed of at least one independent director 0 points if the compensation committee is not composed of independent directors
Meeting of the compensation committee	The compensation committee shall meet at least once a year	RC.Meet: Meeting of compensation committee measured by a dummy variable equal to 1 if the committee meets at least once and 0 otherwise	2 points if the committee meets at least once a year 0 points otherwise
Managerial ownership	The manager must have a high percentage of shares of company	Manag.Owner: The percentage of shares held by the manager	4 points if the manager owns more than 1/2 of the capital 2 points if the manager has between 1/2 and 1/3 of the capital 1 point if the manager has less than 1/3 of the capital 0 points if the manager has less than 1/3 of the capital
Ownership concentration	The capital of the firm should not be dispersed	Owner.Concen: The percentage of shares held by the three largest shareholders	4 points if the first three shareholders hold more than 2/3 of the capital 2 points if the first three shareholders hold between 1/3 and 2/3 of the capital 1 point if the first three shareholders hold less than 1/3 of the capital 0 points if the first three shareholders hold less than 1/3 of the capital
Institutional investors	Institutional investors must have a large percentage of the capital of the firm	Owner.Institu: The percentage of shares held by institutional investors	4 points if institutional investors hold more than 1/2 of the capital 2 points if the institutional investors hold between 1/2 and 2/5 of the capital 1 point if investors hold <2/5 of the capital 0 point if institutional investors hold <2/5 of the capital Total score: 52 points

The corporate governance score of each firm in year t is the sum of points obtained (The items and their measurements are deducted from globe and mail corporate governance rating) and the definition of variables used in the final regression (Table 8)

significant at 1%. In addition, we observe a negative and statistically significant correlation between DAs and governance score.

5.2. Multivariate Analyses

In this study the dependent variable is represented by the absolute value of DAs, so it has a value >0 and therefore it is a censored variable, as the application of linear models may give more biased results than the most adequate method that considers this finding, the Tobit regression (Amemiya, 1985).

5.2.1. Earnings management/equity-based compensation/economic conjuncture

Table 6 presents the results of the regression model testing the relationship between earnings management and equity-based compensation. As we mentioned our sample is composed of two sub-samples. We then present the results for the pooled model and for the French and American cases separately. In addition, to take into account the specificity of French and American companies in the pooled model, we introduce a dummy variable (US indicator) which is 1 if the firm is American and 0 otherwise.

Table 3: Descriptive statistics of variables used

Variables	N	Mean	Min	Max	SD	Difference FR-US
|DA|						
FR	1272	0.0510	8.51e-06	0.7638	0.0731	0.0208***
US	1624	0.0302	6.43e-06	0.9838	0.0593	
Equity comp/cash						
FR	1272	0.4650	0	30.1194	1.4219	−1.2503***
US	1624	1.7153	0	48.6354	2.5000	
Size						
FR	1272	7.3125	1.8615	11.8756	2.0708	−1.8941***
US	1624	9.2066	5.2080	12.6198	1.1468	
Lev						
FR	1272	0.2394	0	1.6692	0.1714	−0.0554***
US	1624	0.2948	0	1.440	0.1323	
MTB						
FR	1272	2.5562	1.4755	7.3042	0.399	0.4407***
US	1624	2.1154	0.6438	11.2406	1.2234	
CFO						
FR	1272	0.0769	−0.7703	1.3099	0.0985	−0.0480***
US	1624	0.1249	0.0779	−0.1063	0.8661	
Score.Gov						
FR	1272	24.1352	9	44	6.2231	−10.4485***
US	1624	34.5837	17	43	4.3189	

***Significant at 1%. Size: The logarithm of total assets, Lev: Ratio of total debt to total assets, MTB: Market to book measured by the ratio of market capitalization at end of period (share price*number of shares outstanding) by the book value of equity, CFO: The ratio of cash flow relative to total assets, Score.Gov: The score of corporate governance (Table 2). DA: Discretionary accrual, SD: Standard deviation

Table 4: Correlation matrix of Pearson (FR firms)

	Variables	1	2	3	4	5	6	7
1	|DA|	1						
2	Equity Comp/ Cash Comp	0.0486*	1					
3	Size	−0.1900***	0.0577**	1				
4	Lev	0.0044	0.0137	0.2006***	1			
5	MTB	0.0197	0.1060***	−0.1797***	−0.0109	1		
6	CFO	−0.0869***	0.0325	−0.0216	−0.0201	0.1538***	1	
7	Score.Gov	−0.1136***	0.0048	0.2948***	0.0913***	−0.1449***	−0.0442	1

***Significant at 1%, **Significant at 5%, *Significant at 10%. This table shows the correlation coefficients between the variables used for a sample of 159 French companies for the period 2003-2010. DA: Discretionary accrual

Table 5: Correlation matrix of Pearson (US firms)

	Variables	1	2	3	4	5	6	7
1	|DA|	1						
2	Equity Comp/ Cash Comp	0.1257***	1					
3	Size	−0.0762***	0.0839***	1				
4	Lev	−0.0226	−0.0021	0.0043	1			
5	MTB	0.0459*	0.1062***	−0.4080***	−0.0215	1		
6	CFO	−0.0076	0.0434*	−0.1391***	−0.0022	0.4792***	1	
7	Score.Gov	−0.0323***	−0.0662***	0.1944***	0.0098*	−0.0756***	−0.0245	1

***Significant at 1%, *significant at 10%. This table shows the correlation coefficients between the variables used for a sample of 203 US companies for the period 2003-2010. DA: Discretionary accrual

For the whole period (2003-2010), regardless of the sample used and even the pooled model (columns 1-3) model, the results show that the award of stock options and restricted stocks measured by the ratio value of equity-based compensation to cash compensation (Equity.Comp/Cash.Comp) is positive and statistically significant with earnings management (|DA|). In fact, the manager is more likely to engage in earnings management when he has an important equity-based compensation compared with cash compensation. This result is consistent with some studies such as Bergstresser and Philippon (2006), Meek et al. (2007), Zhang et al. (2008) and Alves (2012). Thus, a separation between management and ownership as mentioned by Jensen and Meckling (1976) can induce an asymmetry of information. Therefore, the manager can take advantage of this (announcement of bad news or change in the method of calculating depreciation or provisions during the allocation of equity-based compensation) to maximize his wealth.

Another observation can be noted in the US market, where empirical studies have focused on the case. As we have already mentioned, our study period is between 2003 and 2010, the period after the enactment of the Act (SOX) in 2002, which is

Table 6: Results of the regression of the relationship between earnings management and equity compensation

Variables	Period (2003-2010)			Period (2002-2007)			Period (2008-2010)		
	Pooled	FR	US	Pooled	FR	US	Pooled	FR	US
Constant	0.1028***	0.1085***	0.0582***	0.0998***	0.1053***	0.0588**	0.0857***	0.0908***	0.0452***
	(12.71)	(9.63)	(3.58)	(8.86)	(7.14)	(2.45)	(10.69)	(6.87)	(5.09)
US indicator	−0.0073*			−0.0111**			−0.0082**		
	(−1.86)			(−2.04)			(−2.20)		
Equity Comp/ Cash Comp	0.0014**	0.0028**	0.0026***	0.0026***	0.00418**	0.0061***	−8.72e-05	−0.0013	6.78e-05
	(2.33)	(1.98)	(4.37)	(2.74)	(2.35)	(5.57)	(−0.20)	(−0.62)	(0.26)
Size	−0.0064***	−0.0074***	−0.0034**	−0.0055***	−0.0054***	−0.0031	−0.0054***	−0.0070***	−0.0025***
	(−6.42)	(−5.12)	(−2.12)	(−3.98)	(−2.87)	(−1.32)	(−5.52)	(−4.28)	(−3.03)
Lev	−8.22e-04	0.0207	−8.97e-04	−1.21e-04	−0.0103	1.35e-04	4.77e-04	−0.0384**	−4.4e-05
	(−0.70)	(1.43)	(−0.82)	(−0.68)	(−0.48)	(−0.78)	(−0.55)	(−2.57)	(−0.82)
MTB	−1.79e-04	−2.29e-03	0.0013	2.80e-04	5.52e-04	1.69e-04	0.0024***	0.0024***	7.42e-04
	(−0.41)	(−0.47)	(0.79)	(0.35)	(0.63)	(−0.07)	(8.00)	(6.24)	(0.66)
CFO	−0.0633***	−0.0830***	−0.0319	−0.0766***	−0.0833***	−0.0502	0.0167	−0.0069	0.0358***
	(−3.99)	(−3.73)	(−1.37)	(−3.40)	(−2.78)	(−1.43)	(1.07)	(−0.29)	(2.77)
Sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	3863.4161	1594.8516	2306.0233	2109.5843	894.2846	1236.7584	2149.1254	805.3025	1547.9174
N	2896	1272	1624	1810	795	1015	1086	477	609

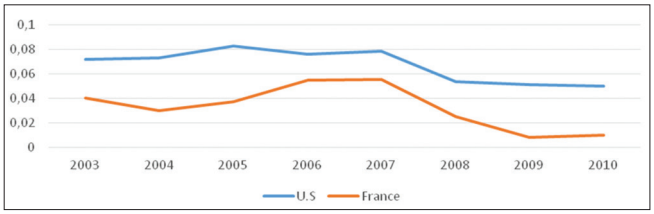
***Significant at 1%, **significant at 5%, *significant at 10%. The table presents regression results of the relationship between equity compensation and earnings management for the period 2003-2010 and particularly for the two sub-periods (economic growth vs. financial crisis and economic recession) for pooled, French and American cases

an important reform for the protection of investors in the United States. In fact, Jiang et al. (2010) test whether the granting of equity compensation increases the likelihood of CEOs to manage earnings in the company, but these authors have tested this relationship for two periods (pre-SOX and post-SOX). The results converge to the importance of that law in limiting managerial opportunistic behavior contrary to the result obtained in this study and the work of Arena and Braga-Alves (2013). Indeed, this difference in the results found is explained; on the one hand, by the difference in estimation method where Jiang et al. (2010) did not take into account the characteristic of the endogenous variable (absolute value of DAs) which is a censored variable. The authors estimated the model by OLS method, and therefore the coefficients found during the regression can be biased.

On the other hand, Jiang et al. (2010) took as a period corresponding to the post-SOX only in 2002 and 2006, contrary to our wider study period. Therefore, we can deduce that the law has had a limited effect over time. Indeed, the manager can develop new methods to overcome the constraints of control issued by the law to manipulate the outcome of the company and to maximize his wealth.

Table 6 (columns 4-9) shows the effect of economic conjuncture on the relationship between equity-based compensation and earnings management for the pooled case, French and American. We divide our sample into two periods, the first period from 2003 to 2007, which corresponds to economic growth and the second period from 2008 to 2010 characterized by the financial crisis that began in late 2007 but did not take effect on the accounting statements of companies until 2008. Indeed, based on the study of Babecký et al. (2012), where they consider that the developed countries, in particular France and the United States, are characterized by a period of economic growth before the crisis, but also a period of

Figure 1: The distribution by year of the return on assets measured by the ratio of net income divided total assets for all 159 French companies and 203 US companies for the period between 2003 and 2010



economic recession following the financial crisis that is measured by low company performance. In addition, Figure 1 shows the annual average ROA for the French and American cases, we observe an upward trend in 2003 and 2007 and then a remarkable decrease in the average ROA for the rest of the period. Then we integrate the year 2010 (economic recession) with the years 2008 and 2009 as a period of poor performance.

Independently of the selected sample, we note that during the period of economic growth (before the financial crisis and economic recession), the allocation of equity-based compensation is positively associated (not related) with the likelihood that the CEO manages earnings, which validates the hypothesis H_{1a} (H_{2b}).

In addition, to the arguments previously when developing the research hypotheses, the manager controls earnings so they decline during the period of economic growth (a period characterized by improved firm performance) to maximize the value of stock options and restricted stocks granted. In addition, during the financial crisis and economic recession, where firm performance is already degraded, then the manager does not manage earnings during the allocation of equity-based compensation.

We can explain the results obtained in another manner. In fact, contrary to the period of economic growth, Chia et al. (2007) and Hashim et al. (2012) assume that the financial crisis allows a more thorough monitoring of the activities of managers by stakeholders such as government and financial institutions. These stakeholders concluded that the reduced profits were declared as temporary and therefore acceptable as long as the company showed signs of potential improvement in the future. Faced with this pressure by the stakeholders on the CEO, the latter must report more credible revenue to reflect the firm's actual value by reducing the activities of earnings management.

On the dummy variable (US indicator), we observe that for the various estimates, there is a negative and statistically significant relationship. Therefore, we find that the French manager commits himself to more intensive earnings management compared with his US counterpart. This result is expected because at the level of descriptive statistics we observe an average governance score significantly higher in the American case than in the French case. Therefore faced with a lack of control (low governance score), the French manager has a great possibility of opportunism than his American counterpart.

For the control variables, the variable (size) measured the size of the firm where we found a negative and statistically significant relationship in the majority of estimates in accordance with the work of Meek et al. (2007) and Ghosh et al. (2010). For other variables, the results are inconclusive, they depend on the sample, and the period selected.

5.2.2. Earnings management/equity-based compensation/ corporate governance

Table 7 presents the results of the regression model (3), the effect of corporate governance in limiting earnings management when awarding equity compensation.

As we indicated earlier and independently of the selected sample, there is a positive and statistically significant relationship between Equity.Comp/Cash.Comp and |DA| variables. In addition, we observe a negative and statistically significant relationship at the 1% level for pooled model, 5% for the French case and 10% for the US case between Score.Gov and |DA| variables. Therefore, good corporate governance as measured by a score (Score.Gov) has a negative effect on the ability of the CEOs to manage earnings as shown in previous studies (Dechow et al., 1996; Gompers et al., 2003 and Cornett et al., 2009).

Lin and Hwang (2010) suggest that good corporate governance structure ensures that the manager properly uses the firm's resources in favor of shareholders, and that he relates reliably to its financial situation. The properly structured governance mechanisms should allow reducing earnings management because they provide effective control over the manager in the process of preparing financial statements.

Similarly, Bartov et al. (2001) found that the main role of corporate governance mechanisms is to solve the agency problem between the agent and the principal by monitoring the behavior of the latter, rather than to improve the performance of the firm.

The most important result we can extract from this table (Table 7), is for testing the relationships between the granting of equity compensation, the governance score (Equity.Comp/Cash.Comp*Score.Gov) and earnings management approximated by the absolute value of DAs. We observe that the relationship between equity compensation and earnings management becomes insignificant in the presence of a good corporate governance score. We conclude that these mechanisms are ways to limit the opportunistic behavior of the manager during allocation of stock options and restricted stocks.

We calculate a score for governance that includes several items. Therefore, further study of these mechanisms is of interest to identify the factors that can control the opportunistic behavior of the manager when granting equity compensation for the two samples separately (France and United States)[2].

Due to econometric constraints and because the variables representing the governance mechanisms are not of the same nature (quantitative and qualitative), then the estimates of the cross effect can be problematic on this point (multiplication of two variables of different types). Therefore, we choose to analyze each variable separately and see if it has an effect on the relationship between |DA| and Equity.Comp/Cash.Comp variables.

Table 8 presents the results of the impact of different mechanisms of corporate governance on the relationship between earnings management and equity-based compensation. For simplicity, we do not present the results of the control variables for each governance mechanism.

As for board characteristics, we find that regardless of the sample used, a large board limits the managerial opportunistic behavior (negative and statistically significant relationship between the board size and earnings management) and especially during the allocation of stock options and restricted stocks (a non-significant relationship between the variables |DA| and Bd.Size*Equity.Comp/Cash.Comp). Frias-Aceituno et al. (2012) assume that the complexity of the control over the manager is to ensure the reliability of financial information disclosed. This requires the presence of a large number of directors acquiring more skills to effectively perform these control functions.

As to the diligence of the of the board of directors, based on the assumptions of the agency theory and the results of previous studies such as Xie et al. (2003) and Alves (2012), it is assumed that a board meets more often to be able to devote more time to issues such as earnings management.

Therefore, meetings can help to improve the board's effectiveness in monitoring financial reporting. Our study confirms this finding, in particular in the case where the manager benefits from equity-based compensation (The passage of a positive and statistically significant relationship between the variables |DA| and Equity.Comp/Cash.Comp to a non-significant relationship

2 The definition and measurement of variables used as mechanisms of corporate governance are shown in Table 8.

Table 7: Results of the regression of the relationship between earnings management and equity-based compensation in the presence of corporate governance

Variables	Pooled	FR	US
Constant	0.1207*** (12.56)	0.1285*** (9.39)	0.0776*** (3.97)
US indicator	3.25e-04*** (4.93)		
Equity Comp/Cash Comp	0.00793*** (4.03)	0.0090* (1.71)	0.0054** (2.35)
Score.Gov	−9.33e-04*** (−3.29)	−0.0011** (−2.50)	−6.67e-04* (−1.71)
Score.Gov* Equity.Comp/Cash.Comp	−0.0026 (−0.56)	2.95e-04 (1.21)	9.61e-04 (0.60)
Size	−0.057*** (−5.59)	−0.0066*** (−4.49)	−0.0031* (−1.92)
Lev	8.41e-05 (−0.72)	0.0213 (1.49)	−9.12e-05 (−0.84)
MTB	1.96e-04 (−0.45)	−2.98e-04 (−0.61)	2.61e-04*** (3.61)
CFO	−0.0618***(−3.92)	−0.0824*** (−3.71)	−0.0298 (−1.28)
Sector	Yes	Yes	Yes
Year	Yes	Yes	Yes
Log likelihood	3878.10	1598.22	2312.67
N	2896	1272	1624

***Significant at 1%, **significant at 5%, *significant at 10%. The table presents regression results of the relationship between equity compensation and earnings management in the presence of corporate governance for the period from 2003 to 2010 in the pooled, French and American cases

Table 8: The principal results of the regression of the relationship between earnings management and equity-based compensation for the different governance mechanisms

Variables	FR			US		
Coef.Gov=	Equity.Comp/ Cash.Comp	Gov	Equity.Comp/ Cash.Comp*Gov	Equity.Comp/ Cash.Comp	Gov	Equity.Comp/ Cash.Comp*Gov
Characteristics related to board of directors						
Bd.Size	0.0060* (1.75)	−0.0018** (−2.02)	3.18e-04 (0.86)	0.0052** (2.08)	−0.0016* (−1.75)	−2.74e-04 (−1.09)
Board.Meet	0.0775*** (21.40)	−0.0600*** (−10.58)	0.0101 (1.03)	0.0718*** (3.81)	−0.0130* (−1.95)	0.0033 (1.07)
Dual=0	0.0063** (1.99)			9.21e-04 (1.32)		
Dual=1	0.0029* (1.95)			0.0029*** (4.32)		
Ind.Dir	0.0096** (2.56)	−0.0114 (−0.96)	0.0167** (1.97)	0.0096** (2.12)	−0.0919*** (−2.97)	0.0119** (2.08)
Owner.Dir	0.0045* (1.71)	0.0260** (2.42)	0.0043 (0.68)	0.0032*** (3.97)	0.0242*** (2.66)	0.0102 (0.40)
Wom.Dir	0.0026* (1.84)	−0.0221 (−1.00)	0.0050** (2.23)	0.0035*** (4.22)	−0.0129* (−1.86)	−0.0237 (−1.11)
Characteristics related to remuneration committee						
RC=0	0.0029 (1.37)			0.0463*** (8.61)		
RC=1	−0.0024 (−1.20)			6.54e-04 (−0.49)		
RC.Meet=0	0.0034* (1.87)			0.0026*** (4.28)		
RC.Meet=1	0.0016** (2.26)			−0.0018 (−1.15)		
RC.Size	0.0029* (1.67)	−0.0023 (−1.29)	0.0090*** (4.59)	0.0093*** (2.96)	−0.0162*** (−6.75)	−0.0012 (1.39)
Indep.RC	0.0127*** (9.83)	−0.0270 (−1.41)	0.0493*** (21.73)	0.0463*** (8.61)	−0.0379*** (−3.67)	−0.0012 (−0.04)
Characteristics related to the ownership structure						
Manag.Owner	0.0051** (2.37)	−0.0222* (−1.68)	0.0081*** (5.28)	0.0242** (2.58)	−0.0617*** (−3.81)	0.0128*** (3.81)
Owner.Concen	0.0118*** (3.41)	0.1017*** (7.54)	−0.0192** (−2.48)	0.0070*** (4.84)	0.0120 (0.86)	0.0196*** (3.33)
Owner.Institu	0.0203*** (3.38)	−0.1002*** (−6.23)	−0.022 (−1.23)	0.0088*** (2.84)	3.92e-04 (0.02)	0.0569*** (5.58)

***Significant at 1%, **significant at 5%, *significant at 10%. The table summarizes the main results for the regressions of the relationship between earnings management and equity-based compensation in the presence of different mechanisms of corporate governance

between the variables |DA| and Equity.Comp/Cash.Comp*board. Meet) for both samples.

Concerning the dummy variable measuring the dual functions of manager. In the American case, we find a positive and statistically significant relationship at the 1% level between Equity.Comp/ Cash.Comp and |DA| variables in the case of companies that are characterized by an accumulation of functions, but this relationship was not significant in the case where the variable dual = 0. Consequently, the manager takes advantage of his position where he accumulates the functions of management and control to manipulate the result in the granting of equity compensation.

The centralization of control and management functions in the firm can result in an excess of power exercised by the manager explained by a large influence on the board in setting the agenda, meeting management and controlling information circulated

among directors (Persons, 2006). Therefore, in this situation the manager prevents control of the board resulting in higher levels of earnings management (Cornett et al., 2009 and Hazarik et al., 2012).

On the French case, the results converge with the idea of some previous studies such as Xie et al. (2003), Bédard et al. (2004) and Gao et al. (2008) where they fail to find a significant relationship between the dual functions of manager and earnings management. In fact, in addition to the dual functions (Dual = 1), where the French manager has only the function of management, they are able to manage the earnings for equity compensation (a positive and statistically significant relationship at 10% between Equity. Comp/Cash.Comp and |DA| variables in the case of separation of functions [Dual = 0]). Therefore, in this case, when there is significant managerial power, the function of the board chairperson is an honorific title unlike the US case, where the manager must combine the control and management functions to reduce the control on him and manipulate the earnings following the allocation of equity compensation.

On independent directors for the American case, there is a negative and statistically significant relationship at the 10% level between the presence of independent directors and DAs in accordance with the results found in the Anglo-Saxon context such as Xie et al. (2003) and Dimitropoulos and Asteriou (2010). Indeed, from the perspective of agency theory, a board characterized by a large percentage of independent directors is vigilant to reduce agency problems, because these members are appointed primarily to monitor managerial behavior (Fama, 1980 and Bainbridge, 1993).

Contrary, in the French case, we did not find a significant relationship between earnings management and the presence of such directors. This difference in results is due to the legal context in which the definition of independent directors in the French case were regulated after 2008. In fact, before this date each firm determined the criteria of independent directors separately, leaving many questions about whether these members were really independent. In addition, during the allocation of equity compensation, there is a positive and statistically significant relationship at the 5% level between |DA| and Equity.Comp/Cash. Comp*Ind.Dir variables. While the presence of independent directors become a way to increase the probability of the manager to increase company earnings and not a governance mechanism to limit management earnings.

Indeed, given that the majority of independent directors are managers in other companies, so they have an interest in that managerial compensation generally be high. Indeed it can serve as a reference for these directors when negotiating their own compensation contracts.

For both samples, we find that there is a positive and statistically significant relationship at the 1% level for the French case and 10% for the US case between earnings management and the managerial ownership. This result converges with managerial entrenchment theory. According to Fama and Jensen (1983), a high percentage of shares held by directors weakens their independence and ability to monitor and take action in their own interests to the detriment of shareholders in accordance with the results found by Mangena and Pike (2005).

Contrarily the CEO manages earnings in an opportunistic manner to maximize his wealth by stock options and restricted stock. Those directors holding a high percentage of shares become involved as shareholders to limit the opportunistic behavior (non-significant relationship between the absolute value of accruals and Equity. Comp/Cash.Comp*Ind.Dir variables). Therefore, during the award of equity compensation, these directors should have interests aligned with shareholders in accordance with the agency theory assumption. Thus, it may have a strong incentive to monitor the manager (Karamanou and Vafea, 2005).

The last characteristic is related to the board's diversity. In the American case, there is a negative and statistically significant relationship at the 1% level between variables measuring the absolute value of DAs and equity-based compensation. The literature of economic psychology assumes that women have higher risk aversion than men. In addition, according to Bernardi and Arnold (1997), women directors may have better values than their male counterparts. Therefore, the increasing diversity on the board allows for a strengthening of corporate governance besides taking advantage of new skills. The presence of women directors is therefore to be useful in controlling the manager against opportunistic behavior and, in particular, at the time of the award of equity compensation (non-significant relationship between |DA| and Equity.Comp/Cash.Comp*Wom.Dir).

However, in the French context, we did not find a significant relationship between the diversity of the board and earnings management in accordance with the study of Peni and Vähämaa (2010). This difference in result between the two markets is due to the divergence of regulations for corporate governance where the AFEP MEDEF code on good governance practices of French companies published in 2010 forced these companies to ensure that their administration board consist of at least 20% women directors. Consequently, as our period lasts until 2010, then the importance of the female director in reducing earnings management could not be observed during our study.

An analysis of the different results on the characteristics of the remuneration committee (the existence of the committee, meeting, size, presence of independent directors), allows us to deduce the importance of this committee in limiting earnings management for the US case.

On qualitative variables (existence the compensation committee and its meeting), we observe a transition from a positive and statistically significant relationship at the 1% level between |DA| and Equity.Comp/Cash.Comp variables to a non-significant relationship. For quantitative variables (size of the committee and the presence of independent directors), we find a negative and statistically significant relationship at the 1% level between these variables and earnings management in accordance with the postulate of the agency theory. The compensation committee as a control mechanism of manager in fixing the remuneration

and limiting managerial opportunistic behavior (Dechow et al. 1996). Similarly, Huson et al. (2012) assume that the compensation committee reduces the likelihood of the wealth of manager coming from earnings management. Therefore, the rational manager anticipates the intervention of the committee then he is less probable to manage earnings. On the other hand, the relationship between |DA| and Equity.Comp/Cash.Comp become insignificant, demonstrating the role of this committee in limiting earnings management during the granting of equity compensation.

However, in the French case, we do not find a relationship between earnings management and the different committee characteristics in the same in the case of allocation of equity-based compensation. This result shows that the role of the remuneration committee in France is still relatively low when compared to the US case. Indeed, in justifying the code of good corporate governance in French companies published in 2013 by AEFP MEDEF, it advocates that the compensation committee is limited to preparing a draft of the manager's future compensation for the board to approve. However, in the United States, the committee not only has an advisory role but it even decides the amount of compensation and carries out a performance evaluation principally to control remuneration policy.

For both samples, according to the agency theory, managerial ownership is a mechanism to control the managerial opportunistic behavior. We find a negative and statistically significant relationship at the 10% level for the French case and 1% for the US case. This converges with previous studies such as Dempsey et al. (1993), and Huang et al. (2012).

For French companies, there is a positive relationship between ownership concentration and earnings management. This is contrary to the assumptions of agency theory, where Wang (2006) argues that ownership concentration improves the quality of earnings management. Indeed, blockholders, given the significant amount of investment, exert a greater control over the manager, which reduces the possibility of earnings management.

Our results converge to the postulate of the entrenchment theory, where it is assumed that shareholders holding a large percentage of shares are encouraged to engage in opportunistic earnings management in order to pursue their own interests against the interests of minority shareholders. In fact, this type of investor may exercise his power to reduce the quality of accounting information to cover expropriation activities generated by the latter. Contrarily, in the US case we find no significant relationship according to the study by Davidson et al. (2005) and Sánchez-Ballesta and García-Meca (2007).

In fact, the positive relationship between ownership concentration and the absolute value of DAs is mitigated in countries with strong protection of minority shareholders, such as the case of the United States. However, Gopalan and Jayaraman (2012) suggest that the positive relationship between the presence of blockholders and earnings management should be pronounced in countries with low regime of protection of minority shareholders such as France, because in this situation these investors have a specially high probability of receiving private benefits due to their large shareholdings.

In the situation of granting equity-based compensation, in the French case there is a negative and statistically significant relationship at the 5% level between |DA| and Equity.Comp/Cash.Comp*Owner.Concen. In case earnings management provides only the wealth maximization of the manager, then potential shareholders intervene to limit the opportunistic behavior of the manager. Therefore, in this situation, the concentration of ownership is a corporate governance mechanism to monitor the manager.

However, for the US case, we find that the concentration of ownership and the presence of institutional investors has no impact on controlling the manager against the risk of earnings management during allocation of equity compensation.

In the French case, we found a negative and statistically significant relationship at the 1% level between the presence of institutional investors and earnings management that converges with studies of Jiraporn and Gleason (2007) and Roodposhti and Chashmi (2011). According to Chava et al. (2010), the participation of institutional investors in the capital of the company, since they have more developed resources than other investors, means they can exercise control. The manager is more constrained against the possibility of managerial entrenchment. In addition, even during the awarding of equity-based compensation in favor of the manager, these institutional investors continue monitoring him against the possibility of earnings management.

The difference between French and American markets related to the characteristics of ownership structure is expected. Indeed, France is characterized by a hybrid system of governance where the control of the manager is primarily by blockholders and institutional investors. Contrarily, the US ownership structure is more dispersed so that the manager escapes from control exercised by the blockholders and institutional investors.

According to Sánchez-Ballesta and García-Meca (2007), there is a significant difference between the systems of corporate governance where the role of the board and ownership structure differ in limiting earnings management from one country to another. Therefore, based on the assumption of substitutability of governance mechanisms, the presence of blockholders and institutional investors (France) provides effective control, while there is a small resort to the board as a mechanism of shareholder protection in these countries. In the Anglo-American case (US), characterized by a dispersion of ownership and a weak presence of institutional investors, a board of good quality should be taken to strengthen the monitoring of the manager.

6. CONCLUSION

Theoretically, equity-based compensation is a manner to align the interests between the manager and shareholders. However,

previous studies show that these compensation plans create agency problems by encouraging the CEOs to manage earnings.

Based on a sample of 159 French firms and 203 US firms for the period 2003-2010, we note that for both cases the manager is encouraged to engage in earnings management when he has a high percentage of equity-based compensation.

We have shown that this positive relationship is enabled only during the period of economic growth, in which firms achieve high performance and the manager has an incentive to manage earnings to maximize his wealth with equity-based compensation. However, during the period of instability and economic recession, firms are characterized by greater control on the part of stakeholders. With a deteriorated firm performance, therefore, the manager is not motivated to manage earnings following a granting of equity-based compensation.

At the second search point, good corporate governance reduces the possibility of opportunistic behavior by the manager. A more detailed analysis of the components of corporate governance reveals, on the one hand, a governance mechanism effective in controlling earnings management does not mean that this persists when granting equity compensation. On the other hand, in the American case, the characteristics of the board of directors and particularly the compensation committee are critical in controlling equity compensation. In the French case, the ownership structure (ownership concentration and the presence of institutional investors) limit the opportunistic behavior of the manager during the allocation of equity compensation.

This study has several limitations that must be mentioned, mainly in the determination of corporate governance score that includes only the features of the board, the compensation committee and the ownership structure. Given the importance of the audit committee, it would be interesting to incorporate this feature in the governance score. In addition, this study is limited to the allocation of equity compensation. However, we can also test the assumptions already given following the exercise of stock options and the definitive attribution of restricted stocks.

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