

FIRM PERFORMANCE AND EXECUTIVE COMPENSATION IN FRANCE

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ABSTRACT: *As part of this research paper, we wanted to focus on a line of research rarely exploited in the French context, namely the relationship between executive compensation and corporate performance. In this context, the main objective of our study was to determine the impact of total compensation and the indexed performance on the future performance of the company. To investigate the relationship between executive compensation and corporate performance, we used multiple regressions panel data over a period from 2007 to 2010. After empirical study on a sample of 92 French companies, we can draw the following conclusions: The distribution of stock options to executives positively affects the accounting and financial performance of the company.*

KEYWORDS: Executive compensation, performance, stock options, French context.

INTRODUCTION

In recent years, the statement of the level of executive compensation has raised controversy. The literature on the subject of remuneration of English and American business leaders is opulent. Indeed, the publication of various compensation is usual. In this Anglo-Saxon center, an undeniable number of studies have highlighted a positive link between executive compensation and performance of their business. That executive compensation is also observed, firmly close to the structure of corporate governance strongly differs from that of France. Generally, very little information was disclosed deliberately different remuneration of executives French.

The relationship that links executive compensation to company performance has attracted the interest of many researchers (Matolcsy and Wright (2011), Gong *et al.*, (2011), Donghua *et al.*, (2012), Pinto and Widdicks (2014)). Regarding the effect of compensation on performance, previous studies using very different methodologies, highlight mixed results particularly on the impact of stock options on the value of the company. The perceived executive compensation plans in line with the interests of executives with those of shareholders efficiency is discussed too given the controversies that affect the relationship between company performance and executive compensation levels (Stapledon and Fickling ,2001).

Case studies showed a positive relation to the introduction of compensation plans based on stock options, suggesting their roles in reducing the costs of agency (Bhagat *et al* (1985). Yermack (1997)). However, recent studies persuade that the market responds negatively to largely illusory compensation plans (Martin and Thomas (2005)). Other studies have found support for the managerial remuneration and economic performance of the business relationship (Abowd (1990), Thorley Hill and Stevens (2001), Hanlon *et al*, (2003).). To identify the impact of compensation on firm performance, we will try to present in the first section reviews the

literature on the relationship between company performance and executive compensation especially in the French context.

A second section is devoted to the study of concepts and measures of performance and executive compensation. A final section will explain the sample and measures the variables used for the development of our econometric models used to understand the relationship between executive compensation and company performance.

LITERATURE / THEORETICAL UNDERPINNING

Most studies have investigated the relationship between the total compensation, including stock options form a constituent, and business performance. Thus, we begin this section by outlining the principal interested in total compensation. Then we look at those who are particularly focused on the relationship between stock options and performance of the company. The existing literature has traveled the issue of executive compensation with respect to a variety of contexts and has drawn different results (Weiss (2011)). Studying the dependence between executive compensation and company performance is a privileged theme in the economic literature. Numerous studies are conducted in order to test the hypothesis that executive compensation would affect performance. These studies support or oppose come the conclusion reached by Jensen and Meckling (1976). They they argue that compensation is considered an effective governance mechanism for aligning the interests of executives with those of shareholders.

Relationship between executive compensation and performance

Discussion on executive compensation is instantly linked to the theory developed by Jensen and Meckling (1976) agency. According to the founders, an agency relationship is a contract by which a person recruits another person to perform a task on behalf of assuming a delegation of some control decision to the agent.

The agency relationship is marked by the possibility of landing on two main facts: the divergence of interests and asymmetry of information between the two parties. The divergence of interests between shareholder and officer may direct the agent to behave opportunistically by promoting the pursuit of its own interests at the expense of other contracting parties. On information asymmetry is the result of the delegation of the management of the company. Indeed, the information possessed by the leader is greater than that provided by the shareholders. Also, the manager can steal conceal certain information.

This theory interprets the divergence of interests between managers and shareholders who do not control the majority of the steps taken by the leader and who does not know the same level of information on projects practicable by the company. Subsequently, the room for maneuver granted to the executive causing concern shareholders who fear that the leader does not diligently make decisions that create value for shareholders but rather decisions that seem more sensible him a point of view subjective although they can be sources of value destruction.

The shareholder must therefore use an indirect way, ie remuneration, the alignment of interests of the officer on his own. The latter includes salary, bonuses, stock options, but also the

potential to be dismissed in the case of poor performance, and this is therefore to push the manager to take the most creative and consistent value decisions shareholder expectations.

Jensen and Murphy (1976) and encourage them to quantify the impact of each component of remuneration with the aim of creating value for the company. They show specifically that the majority of leaders are housed in their contracts in the event of termination by the mechanism of golden parachutes which greatly reduces their fear of poor performance. This will ease against the agency theory when it does not encourage managers to comply with the requirements of shareholders as if they are unhappy with their leader, they can fire, but it will receive a rather large sum of money to oust the financial penalty of dismissal. In addition, executive compensation would prove relatively correlated to the good performance of the company, in effect a wage increase, a distribution of stock options and much less in a bad performance.

Consequently, the impact of poor performance and therefore potential errors choice of projects from the leader is minor on compensation and thus the performance incentive is not absolutely centered as well as up down, which has the result of reducing determination of the executive to create more value. Nevertheless, the political constraint is an important principle that goes against a perfect performance incentives from the leaders. Accordingly, compensation strongly correlated to the performance does not seem possible because it would jeopardize a financial commitment from the leader often too large in the case of poor performance and in this regard, the financial resources of the leader is a first block. In addition, it would seem equally difficult to allocate a strongly correlated with the results of the company because it finally rejoin the idea of selling the business to his leader if very approvable results that shareholders are not compensation willing to allow. In practice, leaders thus have a small part of their business units. Although the arrangement of empirical magnitude of the relationship between pay and performance remains highly controversial, most research in the last two decades have produced a significant amount of evidence to support the hypothesis that the performance of companies positively impacts executive compensation, for example, Murphy (1985, 1986), Jensen and Murphy (1990), Abowd (1990), Kaplan (1994) and Elston and Goldberg (2003).

A related issue is the nature of the measures of business performance. The researchers examined the relationship between executive compensation and firm performance using accounting-based measures, such as profit, return on equity and return on assets, as well as measures of performance based on the market such as share price and total return to shareholders.

At the same time, these researchers have recognized that each of these measures has drawbacks of its own. Compared to the vision of the shareholder return is generated from the evolution of stock prices and is not defined in accounting terms. In theory, market-based measures are *ex ante* because they reflect decisions that induce future profitability. In contrast, measures based on accounting are *ex-post*, historical performance measures, and are therefore conceptually less relevant from the perspective of the shareholder.

In practice, however, stock prices are a noisy signal as they are often subject to significant fluctuations in the overall market that reflect the determinants of economic conditions and fiscal and monetary policy, and therefore reflects not only the leadership performance (Bertrand and Mullainathan (2001)). On the other hand, Carpenter and Sanders (2002), among others, are strong links between performance measures and executive compensation. For the most part, research on executive compensation has been limited to cash compensation as an indicator of total compensation, for example, Abowd (1990), Jensen and Murphy (1990) and Murphy

(1985) among others. Cash compensation includes salary and bonus but does not include other forms of remuneration, such as long-term incentive payments and share options.

In previous studies using the cash compensation was largely justified on the basis of available data and of the relative importance of the cash component of total compensation. However, the changes that have taken place over the last decade in the composition of compensation contracts, such as the huge expansion of the non-cash compensation, and significant proliferation in the number of companies that offer stock options their officers and employees, as well as the Securities and Exchange Commission (SEC), in charge of stock options regarding disclosure issued to directors, led to greater attention to the relevance of the variable elements of remuneration on performance, including Bertrand and Mullainathan (2001), Core *et al.*, (2003), and Veliyath Cordeiro (2003).

It is noteworthy that according Canarella and Nourayi (2008), the asymmetry effects of performance involves a non-linear relationship between executive compensation and corporate performance. Consequently, failure to account for this non-linearity can lead to errors in model specification and empirical analyzes, preventing a full assessment of the effects of performance on executive compensation. However, a striking feature of most of the empirical work to date is that few systematic attempts have been made to evaluate the presence of asymmetric effects of performance measures companies on executive compensation. There is not much empirical evidence to date on the vision that good performance is rewarded, while poor performance is ignored, or that compensation contracts are much more sensitive to positive and negative performance achievements .

Theoretical developments and empirical precedents show that successful companies tend to be more generous than their inefficient counterparts. This leads us to formulate our first hypothesis:

Hypothesis 1: There is a positive correlation between total compensation and firm performance.

Relationship between stock options and performance

The issue of executive compensation has been raised by several authors in various contexts and drawn different results (Weiss (2011)). Consequently, the question whether the incentives of managers, in particular stock options, are effective remains a problem for researchers (Chen and Long (2004), Frydman and Saks (2010)).Hall and Liebman (1998) report that there remains a strong correlation between executive compensation and the company's performance taking into account stock options, as indispensable tools for performance incentives willing to solve problems conflict of interest with shareholders. They also defend the idea that executive compensation levels have increased since the 1980s as well as the sensitivity of pay to performance of the company, undoubtedly due to the rise of stock-options.

Low holding stock options by executives to cover their absence in the calculation of remuneration is spread on the one hand, by the financial constraints faced by leaders and secondly, by the inefficiency of participation capital due to the risk aversion of leaders from a certain threshold (Jensen and Murphy (1990)). In addition, given the amounts of market capitalization of large companies, value movements are often very important. And despite the low participation of leaders, the impact is very adherent to the upside or the downside. In this case of divergence of interests and information asymmetry, shareholders accommodate two

types of possible actions to reduce agency costs and enhance the value of the company namely the establishment of control mechanisms to reduce information asymmetry and make the costly opportunistic behavior for the leader and the use of an incentive system for the latter (Jensen and Meckling (1976), Fama (1980)).

Executive compensation is therefore the primary mechanism of incentive system. This instrument is captured by the tendency to attach compensation to accounting and financial results of the company and the equity to align the interests of executives and shareholders. In this optical alignment of interests, the allocation of stock options appears as the most appropriate tool because it transforms the leader himself shareholder and thus pushes to make the most creative decisions of shareholder value. Thus, it allows an increase in the stock prices and therefore its own compensation. Stock options also reinforce the involvement of managers insofar as it is, apart from his fixed salary and bonus, financially interested in the stock market performance of the company.

The Aras and Kurt (2012) study attempts to assess whether the compensation in the form of stock options affect the financial performance measured by both profitability ratios ROA and ROI. The results obtained on a sample of U.S. companies shows that when managers are paid with incentives, such as stock options this could have a negative impact and a decrease in the performance of the company.

Jensen and Murphy (1990) were interested in a period preceding the adoption of stock options, and they argue that the low share ownership by managers is the only argument to justify their choice to exclude, in its calculation of total compensation. This argument is challenged by Hall and Liebman (1998) argue that the change in share price may have an impact on member executive compensation despite the low participation of the latter in the capital of the company. They also add that the leaders in the ownership of their own business remained unchanged. The study Hamouda (2009) for its part, applies to the French case and examines the impact of allocation of stock options to executives on accounting and stock market performance of listed companies. The results of this study reveal a positive relationship between the powers of stock options to executives and corporate performance.

Firth *et al.* (2007) studied the relationship between the structure of executive compensation, ownership structure and corporate performance. This research differs from previous studies in two ways. First, it focuses on the structure of remuneration and not to his level. Then it examines executive compensation and considering the ownership structure of the company and the composition of its board of directors. The authors found a positive relationship between performance and the share of capital held by senior management and the proportion of their compensation based on the capital. This research concludes that the allocations of stock options have a motivating impact on the behavior of leaders and thus a positive influence on business performance.

Gong (2011) uses a number of tests and concluded that the contracts of executive compensation are effective. His study contributes to the literature by examining a long-term horizon as a way to solve the problem between executive compensation and company performance. His key proposal is that the remuneration performance relationship should be evaluated on a sufficiently

long time horizon for the actions of the executive to become profitable. In fact, the study documents a positive association between market performance and compensation.

The results discerned in the earlier literature attest to most predictions of agency theory and incentive to consider the allocation of stock options as a way to align the interests of executives with those of shareholders. Based on these ranges, we will test our second hypothesis stated as follows:

Hypothesis 2: There is a positive relationship between the allocation of stock options and performance of the company.

METHODOLOGY

This section describes first the selection procedure of the sample of companies selected, followed by the method of collecting our data.

Procedure of sample selection

The study was based initially on all the companies included in the SBF 120 index because it is determined from over 40 shares of CAC40 and 80 values of the first and second listed the most liquid market in Paris among the top 200 market capitalization French. This index represents the market as a whole. Our study was conducted over a period of four years from 2007 to 2010. Our choice of this specific population is justified by the fact that this sample may reflect the actual characteristics of the French market. However, this sample has undergone several restrictions: Indeed, we have eliminated from our sample all financial institutions (banks, insurance companies, credit institutions, savings banks and investment and securities investment companies), given their specific financial characteristics. This is also explained by the fact that these financial firms do not have a comparable accounting to other companies (due to their specific accounting for the presentation and preparation of financial statements), and are therefore subject to specific regulations. In addition, we excluded some companies for which and because of the lack of data on the allocation of stock options, we recorded a lack of data. All these restrictions have thus reduced our final sample to 92 companies.

Data collection

For data collection, consultation website of the AMF, has allowed us to download all the annual reports and documents published by companies involved reports.

However, in case of unavailability of these annual reports to the AMF, the data collection was completed through consultation of the official sites of companies. As regards the accounting data and financial data we used databases Worldscope data.

Definition and measurement of variables

In what follows, we will discuss the characteristics of all the necessary variables in our study. These include independent variables, dependent variables (endogenous) (exogenous) and finally the control variables.

The performance of the firms

In our study, we propose to use two completely different metrics but can complement (Matolcsy and Wright (2011)): first financial criterion to measure the financial performance ratio Marris (MTOB), and a second accounting standard that strengthens the assessment of business performance by return on assets (ROA). Regarding Tobin's Q, it is widely used in the literature

on corporate governance to assess the financial performance of the firm (Haat et al., (2008)). However, the calculation of this variable is very complicated and poses a methodological problem. Therefore, we will estimate the financial performance ratio marris (MTOB) defined by the ratio of market capitalization and book value of equity.

Other authors as Cornet et al. (2007) retained the return on assets. This measure indicates how effectively the company employs its assets. This is the ratio between the net income and total assets of the company.

We have taken into account for the calculation of the performance of the company's performance at time $t + 1$ to explain by slack variables at time t .

We assume in fact that executive compensation at the moment of impact on your business performance at time $t + 1$.

The independent variables

Variables relating to remuneration

- Total compensation: This is the sum of four components:
- A fixed remuneration
- An annual bonus
- Stock options and / or bonus shares
- And a set of elements such as benefits in kind, fees, ...

In this work, we consider the total compensation paid to the executive under the year n . This compensation includes all four components aroused. We transformed this variable using the natural logarithm to reduce the dispersion in the distribution of compensation paid to executives. (Crocchi et al., (2012)).

-Stock options compensation

Stock options is estimated at 25% of the exercise price as predicted by the most sophisticated option pricing models (Core et al. (1999)). In other words, the estimated stock options granted during the year value is 25% of the exercise price multiplied by the total number of options granted during the year.

Control variables

Executive compensation is not the only determinant of business performance. Previous research suggests other exogenous parameters additional integrated as control variables in the regression equations to control the effect of some factors that may influence the performance and improve the validity of results. We include: the size of the business, financial leverage, ownership structure, past performance, risk and overlapping of functions between the CEO and the Chairman of the Board of Directors.

The size of the firms: The size is a major determinant of business performance Gillan et al (2003).. Several authors lead to a positive relationship between firm size and performance. We cite this as Kaserer et al. (2008)who show that large firms, benefit from economies of scale allowing them to create barriers to entry and to have a higher performance.

In contrast, other empirical studies affirm the negative effect of firm size on performance. This result is confirmed by the majority of authors to know Morck et al., (1988), Agrawal and Knoeber (1996), Bhagat et al., (2002), and Haat et al. (2008).

These authors argue that operational inefficiencies and problems of agencies, due to asymmetric information and conflicts of interest between contractors are more important when it comes to large companies (Vera and Ugedo (2007)). The relationship between performance and the size of the enterprise remains ambiguous, we did not anticipate the direction of the relationship. We measure firm size by the natural logarithm of total assets.

Financial leverage: The traditional role of debt is manifested as a disciplinary mechanism excellence insofar as it limits the opportunistic behavior of the manager by reducing excess liquidity placed at his discretion (Jensen (1986)). Into debt, the company has an obligation to pay a fixed maturity interest and principal on the debt. This constraint repayment contributes both to reduce managerial discretion which guarantees the transparency of disclosures and other disciplining managers on the use of free cash flows.

In this regard, and Knoeber Agrawal (1996) and Haat and (2008) s. Show that debt plays an important role in improving the performance. Indeed, the company has a more efficient and consistent with the interests of shareholders and management of tax savings from the deduction of financial expenses. However, further progress by Chen and Leng (2004) and Vera and Ugedo (2007) empirical studies agree that performance is negatively correlated with the debt, the fact that cash for the repayment of debt deprive sometimes leaders to invest in profitable projects for the company. The relationship between the level of debt and performance has led discussions, we do not anticipate the direction of the relationship between these two variables. The debt ratio is measured by the ratio of the value of total debt by the value of total assets.

Past performance: A review of previous studies seem to show that the stock options are granted on the basis of the financial performance of the company. In this sense, Murphy (1985) conducted an analysis of compensation on a large sample of U.S. companies. His hypothesis was that financial performance is positively related to compensation dirigeants. la compensation was measured by six different ways: base salary, annual bonus, deferred compensation, the total compensation and the ex ante value of grants of stock options. Performance was measured by market profitability. With respect to stock options, the author observed a negative relationship between the ex ante value of options and financial performance of the firm.

This suggests that the higher the cost, the lower officers are granted stock options and vice versa. Therefore, we conclude that the stock market performance is a determinant of the granting of stock options.

Ownership structure : According Schleifer and Vishny (1989) and Agrawal and Mondelker (1990), the concentration of capital is an effective way to exercise control over the management leaders. Indeed, shareholders have an incentive to invest more in control of their agents when they have an important stake in the company by cons when dispersed ownership, a single shareholder has no incentive to commit resources to control the action of the leader. The authors, Kang and Shivdasani (1995) reveal that firms are characterized by the existence of large shareholders are aptent to replace leaders because of their poor performance. By cons, Fama and Jensen (1983) argue that the concentration of corporate capital crown limited effectiveness and profits weakened. The major problems of the first concentration start when the interests of major shareholders do not correspond with those of other stakeholders, and then,

when the concentration can generate substantial costs that the majority shareholders can accommodate a significant share additional profits.

In the same frame of mind, Shleifer and Vishny (1997) argue that the main agency problem is not the conflict between shareholders and managers, but rather the risk of expropriation of private benefits by shareholders that dominate the control ie the majority shareholders. We measure the ownership structure by the Herfindahl index of Demsetz and Lehn (1985).

Risk: The agency theory predicts the existence of an exchange between risk and reward. The sensitivity of compensation to performance should drop when the risk increases (Holmstrom and Milgrom (1987)). The influence of compensation on the performance of the company transfer risk from well-diversified shareholders to non-diverse leaders. Therefore, in the high-risk ventures, contingent compensation could cause a fall in the value of shareholders. So we should expect a negative relationship between risk and reward. However, empirical results are inconclusive, while Lambert and *al.* (1993) find evidence consistent with the hypothesis of an exchange between risk and reward, Yermack (1995) reported no significant relationship. If the risk of business and complexity are the main reasons for the positive relationship between executive compensation, we expect a positive impact on business performance. Risk is measured by the beta coefficient.

Duality: Cumulative functions between the CEO and the Chairman of the Board is considered a potential source of conflict of interest from the point of view of agency theory. Therefore, given that this is the board appoint, remunerate and dismiss the officer, then the fact that he is chairman of the board is likely to give an important and influential role in officer, impede the proper functioning of the Board and submit its independence into question (Jensen (1993), Fama and Jensen (1983)).

Therefore, this concentration of power in the hands of a single individual defends a suitable climate for the development of an inefficient and opportunistic behavior on the part of the leader, taking claims suites on shareholder wealth. The authors Rechner and Dalton (1991) support the hypothesis that combine the functions of Chairman of the Board of Directors and the CEO has a negative effect on business performance. These are higher for companies that have a dual structure compared to those with a unitary accounting returns. This result is consistent with that found by Weir et *al.*, (2002) in Great Britain.

In a French context, Godard and Schatt (2000) conducted an empirical study that s ' over a period of 5 years. They also claim that the unitary in the board has a positive effect on business performance. They conclude that firms have adopted for combining the functions between the CEO and the Chairman of the Board of Directors are more profitable in the long term, ensuring the vital role played by the leadership for the creation of value.

Proponents of agency theory argue that combining the functions generates a divergence between the private interests of the executive and the interests of shareholders of the company which is manifested by an accentuation of agency costs and abuse of power . Therefore, we expect a negative relationship between the Duality of functions and performance of the company.

Table 1. Definitions and measures of the study variables

<i>Variables</i>	<i>Definitions variable</i>	<i>Measurement variables</i>
Dependent variables		
ROA	Return on assets	The ratio Earnings before interest and taxes and Total Assets
MTOB	Growth opportunities	The relationship between market capitalization and book value of equity.
Independent variables		
SO	Stock options	Number of stock options granted to key management / social capital in terms of the number of shares
Duality	Combine the functions	Binary variable coded 1 if the CEO is also chairman of the board and 0 otherwise.
SIZE	The size of the company	The natural logarithm of total assets.
REMTOT	Total executive compensation	The sum of salaries, bonuses, benefits in kind and fees.
Herfindhal	Concentration index	The square of the shares held in the capital with all shareholders.
ENDETT	Financial leverage	The ratio between total debt and total assets.
RISK	Market risk	Measured by the beta coefficient.

Methodologically, our equations expressing our research hypotheses operably are based on panel data regressions. Indeed, we study the effect of executive compensation paid during year t on the performance of the business conducted at the end of year $t + 1$.

Presentation of models

As part of our empirical approach, we adopted regression equations to test our hypotheses.

-The effect of executive compensation on future performance:

To better understand the effect of the total remuneration of executives on performance, we adopted the following multiple regression equations:

$$(Eq1) \text{ MTOB}_{t+1} = \beta_0 + \beta_1 \text{ RemTot}_t + \beta_2 \text{ Size}_t + \beta_3 \text{ Endett}_t + \beta_4 \text{ ROA}_t + \beta_5 \text{ Risk}_t + \beta_6 \text{ Duality}_{it} + \beta_7 \text{ Herfindahl}_t + \varepsilon_t$$

$$(Eq 2): \text{ ROA}_{t+1} = \beta_0 + \beta_1 \text{ RemTot}_t + \beta_2 \text{ Size}_t + \beta_3 \text{ Endett}_t + \beta_4 \text{ ROA}_t + \beta_5 \text{ Risk}_t + \beta_6 \text{ Duality}_{it} + \beta_7 \text{ Herfindahl}_t + \varepsilon_t$$

We will now reproduce our two equations (Eq1) and (Eq 2) by introducing into each equation remuneration sub-form of stock options.

$$(Eq 3) \text{ MTOB}_{t+1} = \beta_0 + \beta_1 \text{ N}_t + \beta_2 \text{ Size}_t + \beta_3 \text{ Endett}_t + \beta_4 \text{ ROA}_t + \beta_5 \text{ Risk}_t + \beta_6 \text{ Duality}_{it} + \beta_7 \text{ Herfindahl}_t + \varepsilon_t$$

$$(Eq4): \text{ ROA}_{t+1} = \beta_0 + \beta_1 \text{ N}_t + \beta_2 \text{ Size}_t + \beta_3 \text{ Endett}_t + \beta_4 \text{ ROA}_t + \beta_5 \text{ Risk}_t + \beta_6 \text{ Duality}_{it} + \beta_7 \text{ Herfindahl}_t + \varepsilon_t$$

With:

t : the period for estimating the four years of 2007 and 2010.

$\beta_0, \beta_1, \beta_2, \dots, \beta_7$: represent the unknown parameters and equations should be estimated.

MTOB_{t+1} : the financial performance of the company for the year t +1.

ROA_{t+1} : economic profitability for the year t +1.

RemTot: The total compensation paid to executives in year t.

Size: size of the company: measured by the natural logarithm of total assets.

Endett: debt incurred by the company, as measured by financial leverage (total debt / total assets).

ROA: return on assets in year t.

Risk: systematic risk.

Duality: A binary variable equal to 1 if the leader combines the functions of CEO and board chairman.

Herfindahl: the concentration index.

ϵ_{it} : the error term.

Specification of econometric models

Our regression models are based on panel data, which have specificity to treat both a dimension for individuals (companies) and another dimension for time (year). It is often useful to identify the effect associated with each individual ie: common or specific effect. The latter can be fixed or random. We test the existence of specific effects via the Fischer homogeneity test.

Econometrically, this amounts to test the equality of the coefficients of the model studied in the individual dimension ($b_1 = b_2 = b_3 = \dots b_n$). If the probability of accepting the null hypothesis of equality constants β_i is less than 5%, we reject H_0 , in this case we have a specific effect.

According to the homogeneity test, we can see that the p-value of all the models tested are less than 5%, therefore, we reject the null hypothesis. We therefore affirm the existence of specific effects for all our models studied.

We must now choose between fixed effects and random effects most appropriate for estimating models through the test of the individual effects of Hausman (1978).

In the case of individual effects model, we use the Hausman test (1978) to detect the nature of the tested model that is to say, if fixed effects (Within estimator) or random (MCG estimator). This test determines if the coefficients of the two estimates (fixed and random) are statistically different.

According to the Hausman test, the null hypothesis states that the estimator is better than the MCG Within estimator. If the probability of acceptance of the null hypothesis is greater than 5%, in which case the estimate is made by estimation MCG. If the probability of acceptance of the null hypothesis is less than 5%, in this case, the estimate is made by estimation Within.

From the Hausman test, the probability of accepting the null hypothesis is greater than 5% in both models 1 and 3. In this case, all three models are characterized by a random effect, hence the estimation is done by estimating MCG.

For the second and fourth (total remuneration and related stock option accounting performance ROA), the probability of accepting the null hypothesis is less than 5%. In these cases the model are defined by a fixed effect and is therefore estimated by the estimator Within

RESULTS / FINDINGS

This section aims to present and analyze the empirical results obtained in our study. The first part will be devoted to a descriptive analysis of data.

Analyses uni-variate and bi-variate are also presented. This step will provide an overview of the characteristics of our sample. We present, in a second part, a multivariate analysis using OLS regressions.

Univariate analysis

Table 2 shows the characteristics of our sample to the years of study from 2007 to 2010. It appears that the financial performance (measured by the MTOB) has averaged 1.58 with a maximum value of 27.9 and a minimum of -6.81. Also, it appears that the standard deviation of this variable shows a value of 2.141, which leads us to conclude that the performance varies very little between the firms in our sample. As for the performance indicator of accounting, statistics show that the average value of the return on assets is 4.985 with very different values between a minimum value of -47.2 and a maximum value of 122.9. Thus, we find that the average accounting performance is very low compared to financial performance.

In light of the results of the descriptive analysis in Table 2, we note that the average value of stock options estimated on the basis of 25% of the exercise price is approximately 745,497. Compensation values are very disparate marked by very high standard deviations. These results lead us to believe that French companies vary in their executive compensation.

On variables related to firm characteristics, we observe that the percentage of debt held by companies is about 33.6% with a standard deviation of about 5.26.

In addition, the average level of the variable relative to the concentration of ownership shows a value of 2.64, confirming the hypothesis of a relatively concentrated ownership structure of French companies.

Table 2. Descriptive statistics

Variable	Average	Standard deviation	Min	Max
REMTOT	1549432	1075352	0	1.04e +07
SO	745497	805326.7	0	8717872
MTOB	1.586	2.141	-6.81	27.9
ROA	4.985	9.880	-47.2	122.9473
SIZE	8.706	1.607	4.545	13.1875
Duality	0.453	0.498	0	1
Herfindahl	0.264	0.960	0.006	17.64
Endett	0.336	0.526	0.00	6.208
RISK	1.024	0.238	0.18	1.77

Bivariate analysis

The correlation matrix

Before testing our equations, further analysis is necessary to ensure a reasonable degree of association between the different explanatory variables. Thus, it is appropriate to establish the correlation matrix with the aim of testing the presence of a problem of multi-collinearity

between the independent variables. Indeed, the absence of this problem in our sample is seen as a basic requirement in order to obtain a better estimate of our regression equations. The correlation matrix is shown in Table 3. It presents the meaning and significance of the correlation between the different explanatory variables. The main observations that can be drawn from the observation of this matrix are:

Firstly, it appears that the total executive compensation and compensation in the form of stock options are highly correlated, hence the idea of introducing these two variables in two different equations.

The correlation matrix also shows that some control variables are more pronounced degree correlated. We note that there is a significant correlation between size and financial leverage. All these results show the presence of the problem of multicollinearity. So we test for the VIF to check for this problem.

Table 3. The Pearson correlation matrix

This table shows the correlation matrix. Herfindhal: concentration index. Duality: a binary variable equal to 1 if the leader combines the functions of CEO and board chairman, 0 otherwise. RISK: is the market risk. SIZE: Logta: is the natural logarithm of total assets. ENDETT: is the ratio of debt measured by the ratio between total debt and total assets. REMTOT: the total compensation paid to executives in year t. SO: compensation in the form of stock options. ROA: return on assets in year t. MTOB the ratio of market capitalization and the book value of equity ** and * statistics are significant to the respective thresholds of 1% and 5%.

	RemT otale	SO	MTOB	ROA	Endett	Size	Duality	Herfindahl	Risk
RemTotale	1	0.900 ** 0,000	-0.021 0.676	0.082 0.107	-0.046 0,366	0.493 ** 0,000	-0.166 ** 0.001	-0.036 0.484	0.109 * 0.031
SO		1	-0.017 0.742	0.086 0.089	-0.039 0.445	0.392 ** 0,000	-0.145 ** 0.004	-0.020 0.696	0,061 0.230
MTOB			1	0.079 0.121	0.034 0.504	-0.062 0.230	0.032 0.532	0.034 0.505	0.073 0.156
ROA				1	0.004 0.938	-0.093 0.066	0,026 0.607	0.010 0.844	0,003 0,946
Endett					1	-0.096 0.058	-0.063 0.214	0,065 0.205	-0.027 0.601
Size						1	-0.145 ** 0.004	-0.017 0.744	0.216 ** 0,000
Duality							1	0,030 0,550	-0.139 ** 0.006
Herfindahl								1	0.251 ** 0,000
Risk									1

Given that the study of the correlation matrix does not, obviously, to reveal all the problems of multicollinearity between the explanatory variables, the VIF tests are attractive to refute or confirm our results. In effect and after this test, we find that the statistics of most variables are far below the critical value 10 values (Neter, Wasserman and Kunter (1989)). These results lead us to refute the hypothesis of the existence of a serious problem of multicollinearity between the explanatory variables.

DISCUSSION

Study of the effect of executive compensation on performance

By performing a multivariate analysis, we will focus on the empirical results presented in Tables (4 and 5) and we will provide interpretations and explanations of the different observed relationships.

Table 4 allows to analyze the impact of executive compensation on accounting performance of French firms. The table shows that there is a positive but not significant at conventional levels between total remuneration and accounting and financial performance of the business relationship. This result reverses our first hypothesis that high earnings in year t will have a significant and positive impact on future performance.

This finding is consistent with that found in the French market by Albouy (2004). This author is also interested in the relationship between company performance and executive compensation. He finds no relationship between the amount of remuneration and market performance. And by Donghua et al., (2012), in Chinese public firms who's focuses on the effect of relative performance evaluation (RPE) on top managers' compensation. Donghua et al., (2012) find no evidence of a relative performance effect or any asymmetry in firms' use of RPE.

In addition, we will try to shed light on the results the other explanatory variables. These control variables that affect business performance. Inspection of Table 4 reveals the following results: First, we see a negative and significant coefficient of regression at 1% between firm size, measured by the natural logarithm of total assets, and the Market To Book. This finding coincides with previous work and Bhagat al.(2002) and Haat and al. (2008) who suggest that large firms are perceived less efficient than small firms due to lack of control by the leaders on strategic activities.

Similarly, we observe a negative and significant relationship between debt and financial performance (measured by MTOB) the 10% threshold. Our result is similar to those found by Chen et al. (2004). These studies have established a negative relationship between debt and performance, as the debt may cause the problem of under-investment and the fact that most indebted company may use opportunistic practices wishing presenting a position financial more conducive to negotiate with lenders.

Finally, we find a negative and significant relationship at the 5% between the combined functions of CEO and chairman of the board of directors with accounting ROA performance. This result can be explained by the fact that the officer did not properly exploited his experience within the company and its perceptions of the very specific - it peuvant be useful for decision-making and increase thereafter performance . Common way of "Monale" structure, in other words the combination of features makes it difficult to identify the distinctive

responsibilities of the Chairman of the Board and the CEO in case of poor performance of the company.

Table 4. Total compensation and performance relationship

	MTOB _{t+1}	ROA _{t+1}
LOGREMTOT	0.008 (0.12)	0.180 (0.23)
MTOB _t	0.418 (21.06) ***	
Size	-0.087 (-2.72) ***	0.502 (1.46)
Endett	-0.139 (-1.75) *	-0.098 (-0.11)
Duality	-0.092 (-1.07)	2.107 (-2.28) **
Herfindahl	-0.010 (-0.24)	0.260 (0.55)
Risk	-0.251 (-1.38)	-1.044 (-0.55)
ROA _t		0.411 (8.86) ***
Constant	1.367 (1.49)	-2.563 (-0.26)
R ²	0.77	0.78

Table 5 examines the relationship between executive compensation in the form of stock options and the accounting and financial performance of the company. The results as they appear in this table show that the distribution of stock options to executives positively and significantly affects the accounting performance of the company.

This result is consistent with the agency theory, stating an indexed performance pay would align the interests of executives with those of shareholders. Indeed, the officer who receives compensation based on accounting performance of the company will act in the direction of increasing the performance as his remuneration depends (Jensen and Meckling (1976)).

This result is consistent with that found by Yermak (1996) and Mehran (1995). This result is also consistent with the study and Hillegeist Penalva (2004) which covers the period from 1996 to 1999 and whose purpose was to analyze the incentives created by stock options granted to executives and the performance of the company. The results of the study show that the performance of the company is associated positively and significantly with the level of incentive stock options.

The results in Table 5 also show that the distribution of stock options to executives significantly affect the threshold of 5% the future financial performance of the company. This result is consistent with the results generated in the previous literature by Brickley and *al.* (1985) who argues that firms recorded a positive market reaction to the announcement of stock options. In the same vein, and Defusco *al.* (1990) show a positive rate of around implementation plans stock options abnormal return. Similarly, De Fusco and *al.* (1991) state that the adoption of a stock option plan has a positive impact on the market value of short-term actions. The results found confirm the predictions of agency theory and incentives that treat stock options as a means of aligning the interests of management with those of shareholders and thereby affirm our second hypothesis.

Finally, the results obtained from the study of the relationship between compensation in the form of stock option accounting and financial performance show that the size of the company, the debt ratio, the concentration index and Duality, all act significantly and negatively on the performance of the company.

Table 5 . The stock-options and performance

	MTOB _{t+1}	ROA _{t+1}
Logso	0.0561 (1.98) **	0.433 (1.79) *
MTOB	0.419 (10.77) ***	
Size	-0.0916 (-3.20) ***	0.376 (0.69)
Endett	-0.122 (-2.64) ***	-0.140 (-0.29)
Duality	-0.0584 (-0.68)	-1.860 (-2.20) **
Herfindahl	-0.0180 (-1.66) *	0.222 (2.25) **
Risk	-0.229 (-1.28)	-1.009 (-0.30)
ROA		0.392 (2.10) **
Constant	0.716 (1.21)	-4.700 (-0.89)
R ²	0.587	0.165

Robustness Test

Before examining the relationship between executive pay and performance, we identified the presence of endogeneity problem by the Durbin-Wu-Hausman ¹ Davidson and Mckinnon (1993). The model of simultaneous equations is suitable in this case because executive compensation can be explained by the performance. At the same time, executive compensation can influence business performance. The dependent variable of the first equation of our model

is the total executive compensation. The simultaneous equation model to estimate therefore as follows:

$$\begin{aligned} \text{LOG(REMTOT)} = & \beta_1 \text{ROA} + \beta_2 \text{CONCENT} + \beta_3 \text{ADMIND} + \beta_4 \text{LOGTA} \\ & + \beta_5 \text{CREM} + \beta_6 \text{CUMUL} + \beta_7 \text{ENDETT} + u_2 \end{aligned} \quad (1)$$

$$\begin{aligned} \text{ROA} = & \alpha_1 \text{LOG(REMTOT)} + \alpha_2 \text{RISK} + \alpha_3 \text{CUMUL} + \alpha_4 \text{LOGTA} \\ & + \alpha_5 \text{ENDETT} + \alpha_6 \text{HERFINDHAL} + u_1 \end{aligned} \quad (2)$$

With:

LogRemtot: The natural logarithm of total executive compensation.

ROA: Return on assets.

Concent: The ownership concentration measured by the share of capital held by all shareholders.

Admind: The percentage of independent directors present at the board.

LOGTA: The size of the company.

CREM: The existence of a compensation committee.

Duality: The overlapping of functions between CEO and Chairman.

ENDETT: The debt ratio.

Herfindhal: concentration index measured by the square of the shares held in the capital with all shareholders.

We retain the three-stage least squares method (Three-Stage Least Squares (3SLS)). Unlike the method of least squares estimator based on a simple equation, the method of least squares triple considers the possibility of errors in the correlation between the different simultaneous equations. Indeed, in an over-identified model, the least squares method uses the triple variance-covariance matrix of residuals to improve the efficiency of model estimation (Beaver and *al.*, (1997)).

Table 6. The simultaneous relationship between executive compensation and performance

	LOGREMTOT		MTOB	
	Coef.	T	Coef.	t
LOGREMTOT			5.50	0.89
MTOB	0.049	0.41		
RISK			-1.071	-046
HERFINDHAL	0.016	0.36	0.337	0.55
INVINST	0.341	0.80		
ADMIND	0.288	1.18		
CREM	0.2055	0.94		
CUMUL	-0.120	-1.60	-0.416	0.30
LOGTA	0.248***	3.96	0.714	0.48
ENDETT	0.058	0.096	-0.532	-0.50
Constante	11.20***	9.39	77.34	1.03
R2	0.313		0.2008	
CHI2	0.000		0.6503	

Table 7. The simultaneous relationship between stock options and performance

	LOGSO		MTOB	
	Coef.	t	Coef.	t
LOGSO			2.38**	2.21
MTOB	0.407	1.17		
RISK			0.018	0.02
HERFINDHAL	0.045	0.62	0.110	0.57
INVINST	0.035	0.05		
ADMIND	-0.020	-0.09		
CREM	-0.012	-0.07		
CUMUL	0.028	0.18	0.072	0.20
LOGTA	0.093	1.14	0.220	0.92
ENDETT	-0.078	-0.57	-0.186	-0.60
Constante	13.068***	9.43	31.268***	2.41
R2	0.599		0.654	
CHI2	303.78		12.03	

The results in Table 6 indicate that there is no significant relationship between total compensation and financial performance in both directions. Table 7 shows that financial performance positively affects compensation in the form of stock options. However, this form of compensation does not affect the financial performance measured by MTOB. It follows that there is no simultaneous relationship between these two variables. This finding is consistent with that found previously in the regressions using panel data for which performance is an allocation of the variable remuneration in the form of stock options lever.

CONCLUSION

As part of this research paper, we wanted to focus on a line of research rarely exploited in the French context, namely the relationship between executive compensation and corporate performance. In this context, the main objective of our study was to determine the impact of total compensation and the indexed performance on the future performance of the company.

To investigate the relationship between executive compensation and corporate performance, we used multiple regressions panel data over a period from 2007 to 2010. After empirical study on a sample of 92 French companies, we can draw the following conclusions: The distribution of stock options to executives positively affects the accounting and financial performance of the company. This result is consistent with the agency theory, stating an indexed performance pay would align the interests of executives with those of shareholders. Our paper contribution is twofold. First, it contributes to the literature on executive compensation by finding a link between stock-option based compensation and future performance of French-listed companies.

Second, it examines a relationship in the French context where firms are mostly held by families.

FUTURE RESEARCH

At this level, we are entitled to ask whether the executive compensation is supposed to encourage the maximization of corporate value. Indeed, the leaders were able to limit the effectiveness of the incentive mechanism, engaging in manipulation of results to report a good performance, and therefore maximize their wealth. To do this, we will try to emphasize in our last chapter, a new line of research, namely the impact of executive compensation on earnings quality as measured by earnings management and informational power.

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