Stock-Options and the Performance of CAC40 Listed Companies

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Abstract

This paper analyses two main issues: the determinants of the top-executives compensation of the CAC40s' listed firms and the impact of the equity-based compensation on the firm market and accounting performance. Our results show that stock-options grant for CAC40s' top-executives are uncorrelated with its determinants and have no impact on the firm performance over the period of analysis. These results support the theoretical approach of the managerial power and entrenchment.

Keywords: Stock-options, Executive compensation, Incentives, Firm performance

JEL Classification: J33, M52.

1. Introduction

The relationship between firm performance and executive pay has been one of the widely studied issues in the executive compensation literature (Note 1).

A substantial theoretical literature develops optimal executive compensation contracts that link pay to firm performance variations as a mean of aligning the incentives of managers (the agents) with the interests of shareholders (the principals). From an empirical view, prior research used a wide variety of methodologies. It provides mixed evidence on the relation between equity-based compensation and firm performance.

The stated objectives of almost company stock-options plans are to help the company attract, retain and motivate its executives and other employees. Options help companies attract executives who are higher skilled and relatively less risk-adverse. Options provide retention incentives through a combination of vesting provisions and long option terms. Also, options motivate executives by providing a direct link between company performance and executive wealth, thereby providing incentives for executives to take actions that increase share prices and avoid actions that decrease share prices. Finally, in addition to these stated objectives, conveying compensation in the form of stock-options rather than cash allows companies to conserve cash while reducing reported accounting expense (Note 2) and allows recipients to defer taxable income until exercise or even later.

Our paper presents empirical evidence on the relationship between executive compensation and firm performance of the CAC40 (Note 3) listed companies. It is exploratory that executive compensation is ultimately part of a simultaneous system that determines the corporation's value and the allocation of that value among various claimants. Our main results show that the compensation of the French top-executives is not correlated with its economic and financial determinants such as firm performance and firm size. We also find that executives' equity-based pay has no impact on their companies market and accounting performance.

The remaining of the paper is organized as follows. Section 2 of the paper presents a theoretical and empirical literature review about executive compensation and firm performance. Section 3 develops the hypothesis and the empirical methodology used in this paper. In section 4, we describe the data used in this paper and discuss endogenous and exogenous variables of the model. The empirical results and their interpretation are presented in section 5 while section 6 summarizes the key findings.

2. Literature review

Empirical studies on stock options can be divided into two broad categories. The first one focuses on the impact of stock options on financial and investment decisions. The second deals with the relationship between stock-options and performance. The next two subsections review the above-mentioned categories of empirical studies on stock options.

2.1 Stock-options and financial and investment decisions

The main works studying the stock-options and financial and investment decisions have assessed the impact of stock options on financial risk, investment choice and dividend policy, respectively.

The study of Agrawal and Mandelker (1987) focuses on 209 American companies that have made acquisitions between 1974 and 1982. The authors examine the relationship between shares and stock-options ownership and the

characteristics of financial and investment decisions. Their results show that the detention of stock-options by top-managers improve their financial and investment decisions. For example, for a first panel of companies where managers hold an average of 26.1% of the capital in the form of shares and options, the variance of return on assets rose by 12.61%. The latter variance amounts to 5.42% for a panel of companies where the executives hold only 6% of capital in the form of shares and options. The authors found a positive relationship between the holding of shares and options by management and debt levels. Following an acquisition, the panel of companies where top-executives hold an average of 19.69% of the capital knows a growth of debt significantly higher than that observed in a panel where the average equity participation is 4.53 %. They argue that stock-options play a significant role in risk-taking by the executives and so aligning their interests with those of shareholders.

Defusco et al. (1990) examine the long-term effects of stock options grant on the stock market performance (stocks abnormal returns), accounting performance (asset returns and variance), financial decisions (capital structure and dividend policy) and investment decisions (capital expenditures, R&D and advertising). Their study covered 562 companies listed on the New York Stock Exchange which grant stock-options to their executives between 1978 and 1982. The empirical results show negative cumulative abnormal stock returns in the period following the adoption of stock-option plans. Moreover, over the five years following the adoption of the plan, the average return on assets decreased from 12.45% (at the beginning of period) to 8.63% (at the end of period). Regarding financial decisions, results show a positive significant relationship between stock-options and debt ratio. This is consistent with the hypothesis that stock-options motivate executives to take risky financial decisions.

Gaver and Gaver (1995) test the relationship between managerial compensation and investment opportunities for a sample of 321 American companies in 1992. Their basic assumption is that the more the company is growing rapidly (high investment opportunities), the more the information asymmetry between shareholders and managers becomes important. Thus, firms with high investment opportunities are more likely to grant long-term incentive pay, such as stock-options, to their top-executives. The authors conclude that the incentive managerial package can reduce long-term costs associated with information asymmetries within companies of high growth opportunities.

Ofek and Yermack (2000) suggest that enabling top-executives to access capital through a stock or stock-options compensation is beneficial to shareholders. Indeed, they consider that the managerial ownership can solve agency problems by encouraging top-executives to make financial decisions and investments in the interest of shareholders. According to the authors, manager stock-options ownership emits positive signals about the ability of the company to reduce agency costs.

Fenn and Liang (2001) show that the detention of stocks and stock-options has a significant impact on the distribution of dividends. For a sample of 1100 American non-financial companies observed between 1993 and 1997 results show that a 100% increase in the level of stock-options granted led to a 38% decline in the dividend distribution rate. These results are consistent with those obtained by Lewellen et al. (1987) and Gaver and Gaver (1993).

2.2 Stock-options and firm performance

Jensen and Meckling (1976) suggest that there is a relationship between executive compensation and firm performance. The equity-based compensation (including stock-options) has been the subject of several studies trying to show whether there was a link between their grant and the firm performance.

Mehran (1995) shows that there is a significant and positive relationship between pay structure (as measured by the share of capital held by top-executives) and firm performance. He focused on 153 American companies in the industrial sector for the period 1979 to 1980. According to the author, performance which is measured by Tobin's Q and return on assets is linked in a positive and meaningful percentage to the stock and stock options top-executives ownership.

Some authors have used other measures of compensation such as fixed salary, bonus, stock-options market value and incentive value of stocks and options granted. Hall (1998) and Hall and Liebman (1998) detected significant and positive coefficient in the econometric relationship between stock-options grant and firm performance.

Murphy (1985), Hubbard and Palia (1995) and Morgan and Poulsen (2001) are among the main authors who tested the relationship between compensation and stock market performance. According to these authors, the best empirical test of the pay to performance relationship is the one directly linking compensation to market performance.

Yermack (1997) analyses the effect of 620 stock-options plans on stock prices performance for the period between 1992 and 1994. He finds that the stock market performance improves by 2% 50 days after the stock-options award. However, the stock market performance improvement does not result from the stock options grant, but from the disclosure of good news about the firm earnings.

Hanlon et al. (2003) examine the relationship between stock-options value granted to the 5 top-executives and performance. Their sample consists of 1965 non-financial companies in the United States over the period 1993 to 2000. The econometric estimates show that the stock-option value measured using the Black-Scholes formula is

associated positively to future earnings. Indeed, an increase of one dollar in the value of stock options results in an increase in earnings of 3.82 dollars.

Core et al. (1999) analyse the impact of top-executives stock-options ownership on the accounting and stock market performance for 205 large American companies. The accounting performance is measured by asset returns, while the stock market performance is measured by stock returns. As a first step, the authors consider the compensation level and the board composition of directors which enable them to judge the quality of corporate governance. Their main result suggests that poor governance system (high level of pay and poor director board composition) is usually associated with bad accounting and stock market performance.

3. Hypothesis and empirical methodology

From a theoretical view, the present paper is based on a comparison between two conflicting approaches in the field of managerial compensation: the optimal contract approach (OCA) and the managerial power approach (MPA) (Note 4).

The first approach (OCA) assumes that managerial compensation is set in an optimal way. It is a confirmation of the agency theory assumptions which assert that top-executives must be paid in an optimal way in order to align their interests with those of shareholders. Empirically, many authors consider that their results validate the agency theory hypotheses. For example, Demsetz and Lehn (1985), Core and Guay (1999) and Himmelberg et al. (1999) state that pay contracts are optimal. Thus, the level of capital and stock-options ownership by top-managers is value-maximizing for their companies.

On the contrary, the managerial power approach considers that there is no significant relationship between pay and performance. According to this approach, executive compensation is not the result of an optimal incentive contract but rather from a managerial power. Indeed, with a decision-making authority and an important informational advantage, top-executives are beyond the control of shareholders. They dominate the board of directors and its committees. This fact justifies a high level of compensation which is unrelated to the performance of their companies. Jenter (2001), Meulbroek (2001), Hall and Murphy (2002), Lambert and Larcker (2004) and Bebchuk and Fried (2003) are among the authors who consider stock-options as inefficient.

In empirical terms, we aim to test these two approaches on the CAC 40 top-executives. We consider the null hypothesis that no relationship between performance and option grants. This means that under the null hypothesis compensation is the result of managerial power. The alternative hypothesis states that this managerial compensation is motivated by an optimal incentive contract.

Before explaining our hypothesis, we present our empirical methodology. Following Mehran (1995), Core et al. (1999) and Hanlon et al. (2003), the empirical methodology used in this paper is conducted in two stages. In the first stage, we regress compensation variables on different determinants of executives pay considered by the theoretical and empirical literature.

The model to be tested in the first step has the following general form:

$Compensation = f(performance, size, governance\ quality, growth\ opportunity, financial\ risk)$

where f is a known function.

During the second stage, we regress performance measures on compensation and control variables. The second stage model is of the following form:

Performance = f(compensation, control variables)

The null hypothesis is true if compensation and performance are uncorrelated or negatively correlated whereas the alternative is supported in the opposite case i.e if the performance is positive and significant.

We use panel data to estimate the two models in order to strengthen the power of our tests. This choice is justified by the small size of our sample. We do not use firms fixed effects although they allow companies to control unobserved heterogeneity. Indeed, Zhou (2001) suggests that controlling companies fixed effects reduces considerably the power of tests to detect compensation impact on performance. Zhou (2001) argues that compensation varies considerably from one company to another (cross-section changes) but remains low in the same company.

4. Data description and variables discussion

4.1 Data description

Our data concerns 34 companies listed on the French stock-exchange major index CAC 40 for the period from 1998 to 2005. The small size of the sample is justified by the availability of stock-options data concerning companies of the CAC40 index. Two sources were used to collect our data: companies' annual reports and Datastream database. Based on the annual reports, we manually collected data on top-executives and employees compensation. This data concern the fixed and variable compensations as well as options grants. Annual reports were used also to get data on turnover and number of stock-options' recipients. The price to book ratio, the debt level, the stock price return, the asset returns, the equity returns and the dividend distribution rate were collected from Datastream. However, six

companies have been excluded from the CAC40 listed companies because of the lack of information on their executive compensation. The final sample is composed of 34 companies.

Descriptive statistics are summarized in Table 1. The three stock-options variables are expressed in percentage of issued capital. They concern the number of stock-options granted to the chief executive officers (CEOs) (variable: OGC), the first 10 top-executives (variable: OGE) and finally to all employees of the company (variable: OGA). Regarding the fixed compensation (FIX) and the variable compensation (VAR), the two variables were measured in terms of growth rates. Performance variables namely stock market return (RSM), return on assets (ROA) and return on equity (ROE) and the dividend distribution variable (DIV) are expressed as a percentage. In order to control some determinants of pay and performance, we use some control variables as the logarithm of sales (controlling the size, SIZE), debt (controlling the financial risk, DEBT), price to book ratio (controlling the growth opportunities of the company, PBV) and the logarithm of the total number of stock-options recipients (controlling the quality of governance within the company, REC).

<Insert Table 1>

4.2 Variables' discussion

The purpose of this section is to present the different variables to be used and justify their choice relative to the earlier literature.

4.2.1 Compensation variables

Several variables are used to measure executive compensation. They can be splitted into two categories. The first one concerns stock-options grant. Three measures, expressed as a percentage of the issued capital, are used. The stock-options granted to the CEO is our basic variable. Indeed, decisions made by corporate CEO are the most important within a company. This variable is used to measure the relationship between their decisions and the firm performance. The variable measuring the options granted to the first ten top-executives is included to reflect the fact that the CEO is not the only part to make strategic decisions in the company. Finally, the total options granted to all employees reflect the company general policy of granting stock-options plans.

The second category concerns the fixed (salary and bonus) and variable (but not linked to the stock-price) compensations of the CEO set annually by the compensation committee of the board of directors. They are expressed as a growth rate. The fixed compensation is composed of the net salary and bonuses paid to the CEO. The pay variable depends on some goals which are often measures of financial performance or personal goals. In the recent literature, this classic remuneration (fixed and variable) is not taken into account in the models since several authors have concluded that it has no relationship with firm performance. Our choice to include these variables is due to the fact that in France this compensation is still an important part of CEO executive pay.

4.2.2 Performance variables

In this study, we use the performance measures widely adopted by the literature: stock market return, asset return and equity return. The stock market return is the performance's measure the most associated to managerial "equity-based" compensation, including stock-options (see Joskow and Rose, 1994, Hall and Liebman, 1998 and Hall, 1998 for more details). However, some authors suggest that accounting performance measures are so important in determining the managerial compensation level. Paul (1992), for example, considers that accounting returns provide the board of directors with information on shareholder value created by top-executives. In order to be consistent with the previous literature, we consider two measures of accounting performance namely the asset returns (operating income / total economic assets) and the equity returns (net income / total equity). Finally, we introduce a variable measuring the growth rate of dividend distribution. We introduce this variable in our model to assess whether the granting of stock options has an effect on dividend distribution policy within the company (see Lambert et al., 1989 and Fenn and Liang, 2001). We hypothesize inverse relationship between stock options and dividend payments. We assume that the payment of a dividend will result in a decrease in the stock price. Since executive stock option plans generally are not "dividend protected" and there is a very high probability that the option will finish in the money, the payment of dividends will result in a decrease in the value of the executive's stock options. This suggests that managers have an incentive to reduce dividends in order to increase the expected value of their stock options.

4.2.3 Control variables

Some variables are included in our model to control for the firm size, the growth opportunities, the financial risk and the corporate governance quality. They are assumed to control potential effects on performance and compensation.

The size of the firm is measured by the logarithm of sales. The role of firm size in affecting managerial compensation is widely studied in the literature (see, for example, Baker and Hall, 1998). It is often seen as a major determinant of executive pay and can affect performance in two different ways (see Short and Keasey, 1999). First, big companies will have greater opportunities to generate internal funds and access to external financing sources allowing them to undertake more projects and therefore generating profits. Second, the economies of scale allow big companies to set entry barriers and benefit from higher performance.

In order to measure the firm growth opportunities and as many authors suggest, we use the variable price to book value (as measured by the ratio: stock price / book value of shares). Note that this variable is also used as a measure of performance (Mehran, 1995 and Core and Guay, 1999). However, following the work of Berdot et al. (2006), we consider the price to book ratio as a growth indicator.

The variable debt (measured by the ratio: debt / total assets) is included to control several factors. First, to measure the creditors' influence on company management and performance (Stiglitz, 1985). Then, as Grossman and Hart (1982) and Jensen (1986) suggest, the debt can be used by managers in order to report their commitment to generate cash flows that allow to refund these debts. Thus, the debt becomes a source of resolving conflicts of interest between managers and shareholders by reducing managerial discretion.

In order to control the quality of corporate governance, we use a variable measuring the number of stock options' recipients in the company. The previous literature has often used the number of independent or external directors in the board as controlling governance efficiency (see Core et al., 1999). However, recent financial scandals have shown that these independent or external directors can not guarantee a good corporate governance quality. To overcome this disadvantage, we use a direct measure that reflects a notion of fairness within a company when granting stock options. We assume that the greater is the number of stock options' recipients, the most important the company's board of directors is seen as "fair" which reflects a good quality of governance (Note 5).

5. Empirical results

In this section we present the main outputs of our models and their respective interpretations.

5.1 Compensation determinants

Table 2 presents the results of regressing compensation on different determinants. This regression has the following form:

$$ComOpt_{it} = \alpha_{it} + \beta_1 SIZE_{it} + \beta_2 PBV_{it} + \beta_3 SEBT_{it} + \beta_4 REC_{it} + \beta_5 RSM_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$$

where i and t, denote firm and time, respectively. α is an intercept. The variables $SIZE_{it}$ PBV_{it}, $DEBT_{it}$, REC_{it}, RSM_{it} and ROA_{it} are as described previously. β_k, are the coefficients to be estimated and ε_{it} is an error term. $ComOpt_{it}$ are the three dependent variables used, sparately, in three different regressions.

<Insert Table 2>

Table 2 reports estimation results. The *t*-statistics are reported between brackets.

The first regression results regarding CEO compensation show that the variable OGC has no statistically significant relationship with stock market and asset returns, respectively. The coefficient related to governance is negative and statistically significant. The relationship between CEO compensation and firm size is negative, which is unexpected regarding our assumption (Note 6). There is also a positive significant relationship between the percentage of stock options granted to the CEO and the financial risk as well as growth opportunities. The conclusion of these results is that stock-options granted to CEO are negatively correlated with the firm performance and the firm size which supports the null hypothesis of a significant relationship based on the managerial power approach assumptions.

The same conclusion holds for the 10 top-executives recipients of stock-options (OGE variable). These managers have an important decision-making power. But their stock options appear to be motivated by considerations other than firm performance. In addition, the sign of control variable coefficients are opposite to those suggested by the literature except in the case of financial risk. The sign of the coefficient of the variable measuring the impact of the governance quality is negative. This suggests that a poor governance system within the company is synonymous of more options attributed to key executives. This conclusion is in line with the hypothesis of managerial power.

Finally, when the dependent variable is the stock-options granted to all employees, the results show a positive and meaningful relationship with the stock market returns. This result is unexpected to the extent that employees do not have an important influence on market price. However, by testing the relationship between stock-options granted to employees and firm performance, Core and Guay (2001) conclude that a significant and positive relationship can be detected. It should be noted that the coefficient of the variable LNOB is positive and statistically significant. This result is interesting. It means that when the company governance system is good, it assigns more stock-options to all employees.

In light of the results in Table 2, we conclude that stock-options granting to the CAC40 top-executives, do not result from the performance or other determinants of the managerial compensation. In addition, it shows that poor corporate governance leads to more stock-options granting to the top-executives. Our results suggest that stock options granted to the CAC40 top-managers result from a power exerced by the latters on the board of directors.

The absence of a relationship between pay and its determinants is not probably synonymous to managerial power within the company. Joskow and Rose (1994) and Hall (1998) consider that current compensation is more dependent on its past determinants. We test their finding by considering the following regression :

$$ComOpt_{it} = \alpha_{it-1} + \beta_1 SIZE_{it-1} + \beta_2 PBV_{2t-1} + \beta_3 DEBT_{it-1} + \beta_4 REC_{it-1} + \beta_5 RSM_{it-1} + \beta_6 ROA_{it-1} + \varepsilon_{it}$$

Table 3 groups the results of these regressions. T-statistics show that five over six coefficients related to the performance variables in the three regressions are not significant. Considering the other determinants of compensation, almost all coefficients are either negative or non significant. This result shows that the current stock-options granting to the CEOs is motivated by considerations other than those suggested by the optimal contract approach. This is true for the CEOs, the 10 top-executives, as well as for all employees. The results show that a poor quality of corporate governance allows more stock-options granting for top-executives (the coefficients are negative and statistically significant). The stock market and the economic performance effects are not significant.

<Insert Table 3>

In order to conduct a comparative analysis between stock-options and salary (fixed and variable pay), we consider further dependent variables: the fixed salary growth and the variable salary growth. The two regressions have the following form:

$$ComFV_{it} = \alpha_{it} + \beta_1 SIZE_{it} + \beta_2 PBV_{it} + \beta_3 DEBT_{it} + \beta_4 REC_{it} + \beta_5 RSM_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$$

with $ComFV_{it}$ denotes the two forms of compensation : fixed, FIX_{it} and variable, VAR_{it}.

Results of the regressions are presented in Table 4. They show a total independence between fixed and variable compensation on the one hand and control variables on the other hand. Excluding coefficient of the stock market returns in the second regression, all the other factors are not statistically significant.

<Insert Table 4>

As we did in the case of stock-option grants, we regress fixed and variable pay on lagged determinant variables. The regression is as follows:

$$ComFV_{it} = \alpha_{it} + \beta_1 SIZE_{it-1} + \beta_2 PBV_{it-1} + \beta_3 DEBT_{it-1} + \beta_4 REC_{it-1} + \beta_5 RSM_{it-1} + \beta_6 ROA_{it-1} + \varepsilon_{it}$$

Table 5 shows the results of the two regressions. The fixed pay of one year is statistically independent from the compensation determinants of the previous year. Concerning the pay variable, the coefficients are statistically significant except for the asset return variable. However, in the case of the size, growth opportunities and financial risk series, the coefficients have an unusual signs from the point of view of the OCA. The stock market return and the governance quality have a positive impact on the variable pay.

<Insert Table 5>

To conclude, the overall results for the fixed and variable pay confirm what has been found in the case of stock-option grants. The CAC40 CEOs and top-executives compensation seems to be unrelated to the performance of their companies. Thus, managerial power seems to be the source of the CAC40 top management compensation.

5.2 Firm performance

Table 6 presents the results of the compensation effect on various measures of performance. We use the following regression :

$$PerfDiv_{it} = \alpha_{it} + \beta_1 SIZE_{it} + \beta_2 PBV_{it} + \beta_3 DEBT_{it} + \beta_4 REC_{it} + \beta_5 OGC_{it} + \beta_6 OGE_{it} + \beta_7 OGA_{it}$$
$$+ \beta_8 FIX_{it} + \beta_9 VAR_{it} + \varepsilon_{it}$$

with $PerfDiv_{it}$ are variables measuring, respectively, the performance and the dividend distributions. RSM_{it} denotes firm market performance, ROA_{it} asset returns, ROE_{it} return on equity and DIV_{it} the dividend growth rate.

Results show that firm performance is independent of executive compensation. Indeed, the majority of the coefficients are statistically not significant or of an unexpected sign. Moreover, fixed and variable salaries are independent of the different performance measures and the dividend distribution. Regarding stock-options, we find that for CEOs and the 10 key executives, the coefficients are not significant or have a negative sign.

<Insert Table 6>

The most relevant conclusion can be drawn from the last regression of dividend distribution. Results show that stock-options granted to the CEOs and the 10 top-executives have a positive and statistically significant relationship with the distributed dividend growth rate. This result is in contrast with the finding of Lambert et al. (1989) who suggest that stock options grant reduces the level of dividend distributed to shareholder relative to the expected level of dividend without options grant. This can be explained by the fact that stock options grant may not affect the manager's choice of corporate dividend policy immediately. It seems important to look for these changes over a relatively long period of time.

In table 7, we report the results of the regression including lagged independent variables. The regression is of the following form:

$$PerfDiv_{it} = \alpha_{it} + \beta_1 SIZE_{it-1} + \beta_2 PBV_{it-1} + \beta_3 DEBT_{it-1} + \beta_4 REC_{it-1} + \beta_5 OGC_{it-1} + \beta_6 OGE_{it-1} +$$
$$\beta_7 OGA_{it-1} + \beta_8 FIX_{it-1} + \beta_9 VAR_{it-1} + \varepsilon_{it}$$

This regression does not present further evidence. The stock-options granted to top-managers and to all employees have no effect on the company future performance. This is also the case for fixed and variable pay. The majority of the other variables do not have a statistically significant relationship with performance measures and with dividends distribution.

<Insert Table 7>

Our results show that the granting of stock-options to the top-managers of the CAC 40 is in line with the managerial power approach rather than with the optimal contract one.

6. Conclusion

In this paper we tested the relationship between stock options grant and firm performance. Regarding the causality relationship between pay and performance, the empirical study was conducted in two stages. In the first stage, we regress the stock-options compensation on its determinants namely performance, opportunity growth, size, financial risk and governance. In the second stage, we tested the hypothesis that the stock-options granted to top-executives will improve the stock market and accounting performance.

Our empirical results show that executive compensation on the CAC 40 is not justified from the point of view of the agency theory. We do not find any empirical support for the optimal incentive contract approach. However, our results were consistent with the assumptions of the managerial power approach. We show that the top-executives compensation of the major French companies listed on the CAC 40 is not the result of its usual determinants, particularly the performance. Additionally, stock-options granted to top-executives are not synonymous of shareholder value creation. The result seems to be surprising from the agency theory point of view. One possible explanation for the lack of a relationship between pay and performance as part of a system of governance is the existence of a high degree of managerial entrenchment and power. This area is left for further research.

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Notes

Note 1. See Rosen (1992) for an overview of both theoretical and empirical literature on this subject..

Note 2. For the period of our analysis, French companies were allowed to do not expense stock options when granted.

Note 3. CAC 40 is the acronym of the major French Index "Cotation Assistée en Continue 40". It is composed by the fourty major French companies listed on the Paris's stock exchange.

Note 4. The previous empirical literature often makes the difference between the plans based on fixed values of options and those based on fixed number of options. In France, the practice rather belongs to the second category. During a shareholders meeting, shareholders adopt a resolution which consists in fixing a certain number of options to be distributed to the employees during the next years in the context of many stock options plans. Fixing the number of stock options by plan and by employee's categories (manager, staff and others…) is decided by the board

of directors.

In order to benefit from a high number of stock-options it is more attractive to the managers that the number of beneficiaries being as low as possible.

Note 5. Abowd and Kaplan (1999), Core and al. (2001) and Bebchuk and al. (2002).

Note 6. See paragraph 2 of sub-section 4.2.3.

Table 1. Descriptive Statistics

Variables	Mean	Std-dev	Median	Max	Min
Compensation (%)					
OGC	0.12	0.25	0.06	2.63	0
OGE	0.14	0.27	0.09	3.40	0
OGA	1.33	3.80	0.77	6.08	0
FIX	92.03	87.88	3.24	905.14	-53.60
VAR	26.00	69.99	10.48	418.66	-100
Performance (%)					
DIV	15.74	40.15	10.90	262.85	-100
RSM	9.13	37.35	7.93	235.48	-75.89
ROA	-19.73	104.18	3.29	479.38	-475.67
ROE	11.60	31.01	07.84	396.97	-73.98
Control					
SIZE	9.71	0.85	9.64	11.87	7.35
PBV	2.98	2.73	2.27	24.33	-1.27
DEBT (%)	27.56	17.29	25.15	69.69	0
REC	1214.18	2521.43	639	31493	0

Table 2. Regression of the stock-options compensation on current determinants

$ComOpt_{it} = \alpha_{it} + \beta_1 SIZE_{it} + \beta_2 PBV_{it} + \beta_3 DEBT_{it} + \beta_4 REC_{it} + \beta_5 RSM_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$			
	Dependent variables		
	OGC_t	OGE_t	OGA_t
	Estimates		
Independent variables	(t-student)		
α	0.275	0.546	3.384
	(5.615)***	(12.224)***	(7.362)***
β_1	-0.011	-0.034	-0.326
	(-3.307)***	(-6.993)***	(-7.730)***
β_2	5.74E-03	-0.014	-0.034
	(1.802)*	(-5.374)***	(-1.551)
β_3	0.174	0.075	-1.038
	(8.679)***	(2.774)***	(-5.005)***
β_4	-0.020	-0.010	0.178
	(-5.171)***	(-2.529)**	(5.246)***
β_5	-6.83E-03	-0.015	0.117
	(-0.807)	(-1.121)	(2.077)**
β_6	-3.35E-03	-0.014	-0.067
	(-0.631)	(-2.913)***	(-1.934)*
adjusted R² (%)	94.24	83.65	80.31
Obs number	113	100	126
Fischer	306.696***	79.32***	80.929***
***, **, * denote significance at the significance levels 1 %, 5 %, and 10 %, respectively			

Table 3. Regressions of the stock-options compensation on lagged determinants

$$ComOpt_{it} = \alpha_{it-1} + \beta_1 SIZE_{it-1} + \beta_2 PBV_{it-1} + \beta_3 DEBT_{it-1} + \beta_4 REC_{it-1} + \beta_5 RSM_{it-1} + \beta_6 ROA_{it-1} + \varepsilon_{it}$$

	Dependent variables		
	OGC_t	OGE_t	OGA_t
	Coefficients		
Independent variables	(t-student)		
	0.238	0.419	3.567
α	(4.124)***	(5.801)***	(7.740)***
β_1	-0.010	-0.023	-0.231
	(-1.922)**	(-3.497)***	(-5.141)***
β_2	1.64E-03	-9.03E-03	-0.041
	(0.585)	(-2.942)	(-3.133)***
β_3	0.124	0.021	-1.013
	(4.315)***	(0.730)	(-6.032)***
β_4	-0.015	-9.72E-03	-2.23E-03
	(-4.069)***	(-2.528)**	(-0.068)
β_5	4.30E-03	4.74E-03	9.34E-03
	(0.361)	(0.424)	(0.150)
β_6	-4.50E-03	-0.014	-0.050
	(-0.926)	(-2.381)**	(-1.518)
R² adjusted(%)	8.33	82.55	91.74
Obs number	105	97	110
Stat Fischer	2.576**	76.7***	202.898***

Table 4. Regressions of the fixed and variable compensation

$$ComFV_{it} = \alpha_{it} + \beta_1 SIZE_{it} + \beta_2 PBV_{it} + \beta_3 DEBT_{it} + \beta_4 REC_{it} + \beta_5 RSM_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$$

	Dependent variables			
	FIX_t		VAR_t	
Independent variables	Coefficients	(t-student)	Coefficients	(t-student)
α	-114.598	(-0.613)	-9.416	(-0.279)
β_1	11.721	(0.759)	0.692	(0.213)
β_2	6.721	(1.208)	2.607	(1.368)
β_3	2.324	(0.075)	26.076	(1.227)
β_4	-0.792	(-0.104)	-0.328	(-0.094)
β_5	-45.723	(-1.762)	41.004	(2.726)***
β_6	4.203	4.203	0.639	(0.192)
R² adjusted(%)	-4.77		11.72	
Obs number	70		70	
Stat Fischer	0.476		2.527**	
***, ** the coefficients are significatifs respectively to the levels of 1 %, 5 %.				

Table 5. Regressions of the fixed and variable compensation

$$ComFV_{it} = \alpha_{it-1} + \beta_1 SIZE_{it-1} + \beta_2 PBV_{it-1} + \beta_3 DEBT_{it-1} + \beta_4 REC_{it-1} + \beta_5 RSM_{it-1} + \beta_6 ROA_{it-1} + \varepsilon_{it}$$

	Dependent variables			
	FIX_t		VAR_t	
Independent variables	Coefficients	(t-student)	Coefficients	(t student)
α	-90.934	(-0.386)	115.133	(2.715)***
β_1	5.775	(0.286)	-17.952	(-5.274)***
β_2	1.847	(0.323)	-3.912	(-2.973)***
β_3	-36.425	(-0.636)	-49.074	(-2.834)***
β_4	7.335	(0.587)	15.371	(5.789)***
β_5	25.474	(0.692)	51.988	(3.672)***
β_6	3.226	(0.353)	-0.139	(-0.045)
R² adjusted(%)	-10.38		66.37	
Obs number	71		71	
Stat Fischer	-----------		24.03***	

Table 6. Regressions of the performance and dividends on current determinants

Independent variables	RSM_t	ROA_t	ROE_t	DIV_t
	Coefficients			
	(t-student)			
α	0.623	-1.559	0.674	-0.799
	(1.855)*	(-1.794)*	(7.372)***	(-2.698)***
β_1	-0.004	0.139	-0.016	0.045
	(-0.127)	(1.800)*	(-2.024)**	(1.884)*
β_2	-0.009	0.040	0.009	0.013
	-0.530	(1.036)	(1.640)	(1.234)
β_3	0.163	0.799	-0.044	-0.311
	1.012	(2.445)**	(-0.892)	(-2.527)**
β_4	-0.071	0.024	-0.052	0.061
	(-2.520)**	(0.413)	(-5.060)***	(2.253)**
β_5	20.451	-435.635	-14.261	46.863
	(0.630)	(-4.872)***	-1.610	(2.681)***
β_6	-52.118	551.954	-27.976	61.049
	(-1.543)	(3.108)***	(-2.369)**	(1.930)*
β_7	-2.268	-86.053	2.188	-4.110
	(-0.474)	(-3.542)***	(4.813)***	(-1.002)
β_8	-0.001	-0.0003	-7.31E-05	-0.0002
	(-0.654)	(-0.049)	0.791	(-0.139)
β_9	-0.021	-0.241	-0.018	-0.010
	(-0.464)	(-2.464)**	-1.521	(-0.199)
R2 adjusted (%)	61.66	77.48	49.11	83.47
Obs Number	60	42	54	60
Stat Fischer	11.543***	16.676***	6.683***	34.112***
***, **, * the coefficients are significatifs respectively to the levels of 1 %, 5 %, and 10 %.				

Table 7. Regressions of performance and dividends on lagged determinants

Independant variables	RSM_t	ROA_t	ROE_t	DIV_t
	Coefficients			
	(t student)			
α	0.149	-3.543	0.321	0.520
	(0.382)	(-1.986)*	(1.752)*	(1.686)
β_1	0.009	0.220	0.010	-0.008
	(0.252)	(1.414)	(0.666)	(-0.343)
β_2	-0.024	-0.033	0.025	-0.004
	(-1.726)*	(-0.548)	(4.134)***	(-0.464)
β_3	0.260	0.231	0.104	-0.091
	(1.808)*	(0.430)	(1.390)	(-0.570)
β_4	-0.007	0.293	-0.057	-0.033
	(-0.203)	(3.405)***	(-4.264)***	(-1.077)
β_5	11.404	-146.249	-3.898	-1.713
	(0.374)	(-1.491)	(-0.262)	(-0.069)
β_6	1.822	93.162	2.862	15.722
	(0.078)	(0.606)	(0.142)	(0.388)
β_7	-11.623	-90.228	-0.576	-1.182
	(-2.930)***	(-4.863)***	(-0.496)	(-0.213)
β_8	-0.002	-0.009	-0.0002	-0.0002
	(-1.238)	(-1.405)	(-1.247)	(0.042)
β_9	-0.105	-0.056	-0.054	0.057
	(-3.230)***	(-0.529)	(-3.278)***	(1.039)
R² adjusted(%)	61.66	77.48	49.11	83.47
Obs number	60	42	54	60
Stat Fischer	11.543***	16.676***	6.683***	34.112***
***, **, * the coefficients are significatifs respectively to the levels of 1 %, 5 %, and 10 %.				