

1. Introduction

Over the years, the literature has given more and more attention to studying the existence of a relationship between earnings management and CEO compensation in the United State companies. That is due to the level of executive pay that is incessantly increased from 1993 to 2000, even if that was not necessarily justified by an increment of performance.

It is therefore clear that the seeking to match the pay with performance is still one of the biggest problems that afflict the CEO labour market. That originates from the conflict of interest, which is the basis of the intercourse between managers and shareholders. Indeed such a rapport can be described as an agency relationship in which, the shareholders take on the role of the principals and the CEOs those of the agents. Like in every agency relationship, also in this case the agents tend to follow their own interests rather than the principals' ones. All that is accentuated by the procedure of decision of CEO payment, whereby Boards of Directors should contract with CEOs on the compensation of the latter. There would be no particular problems if Boards succeeded to bargain at arm's length with CEOs, but there exist factors that will be depth described in my study, thanks to which CEOs succeed to manipulate the balance sheet data in order to obtain an higher compensation.

It is therefore clear that the relation that is the basis of my thesis breaks down in a *moral hazard* issue. The latter is due to a problem of *hidden action*: the managers succeed to follow their own interest, inasmuch they are confident that their actions cannot be controlled by shareholders.

Those are the reasons why I have chosen such a relation as subject of my thesis.

2. The Relationship Between Shareholders and Mangers

The rapport between shareholders and mangers can be seen as a agency relationship, in which shareholders are the principals, while the managers are the agents.

In the mentioned relationship the parties' interests are different. Indeed shareholders' interest is represented by an increase of firm value with a consequent growth of shares value and rise of their dividends, whereas the mangers-agents' one can be identify with the maximizing their compensation, in detriment of the shareholders' earnings.

Regarding the sources, it is possible to divided them in 4 categories:

- a. Moral Hazard
- b. Earnings retention agency
- c. Time horizon agency conflicts
- d. Managerial risk aversion agency conflicts

The first is the situation in which the parties of the contract have the same piece of information *ex ante*, so when they enter in the contract. however, when the contract is concluded the party (*the agent*), who has to behave in according to it, is able to carry some actions out that are not perfectly observable by the other party (*the principal*). This situation is called "*hidden action*". A second case of moral hazard, known as "*hidden information*" is that in which the agent, who must act according to the contract, gets, after the conclusion of the latter, a piece of information that the principal does not know. An example of that is represented by the relationship between the shareholders and the CFO, who takes decisions on the base of

evaluation about the patrimonial and income situation of the firm, which is not known by the stockholders.

Earnings retention agency conflicts arises inasmuch the interest of shareholders is represented by the profit sharing, whereas the managers have more than one reason to practice earnings retention, because of the biggest size, the highest is the compensation.

Moving on the category sub c, shareholders have interest in all future cash flows of the company into the indefinite future, as these are reflected in the current share price. Instead, management tends to create value in the short-term to detriment of long-term positive-NPV investments.

Regarding the managerial risk aversion agency conflicts, they arise because manager concerned with systematic risk and with unsystematic risk as well, instead, shareholders are concerned only with the systemic one.

Moving on the effect of agency problem, they are of three types:

- a. Monitoring Costs
- b. Bonding Costs
- c. Residual Loss

The first are the costs born by shareholders to control the activities of the managers. The second are those born by managers to inform the shareholders that their behaviour is aligned with the shareholders' interests. The third is the difference between the maximal earnings obtainable in case of perfect contract and that achieved practicing the contract with the best monitoring and bonding possible.

3. The CEO Compensation

In spite of a substantial heterogeneity in pay practice across the firms, most CEOs' remuneration plan consists of four basic components: Base Salary, Annual Bonus Plans, Stock Option, and, the last but not the least, Long-Time Incentive Plans (LTIPs).

Base Salary is the "fixed component" in executive contract: CEOs receive this part of remuneration, regardless of the creation or destruction of shareholder value. That makes the base salaries the most "non-equity based" among the forms of pay. Base salaries for CEOs are generally determinate with operation of benchmarking, based on the surveys about the general industry salaries.

Typically every for-profit company offer an annual bonus plan, based on the performance of a single year, to executives. Executive bonus plans are generally composed by three basic components: performance measure, performance standards, and the structure of the pay-performance relation. Under the typical plan, the bonuses are paid just when a performance threshold is reached and they are paid properly for the achieving of this threshold. The latter is usually expressed as a percentage of the performance standard. At the reaching of the threshold, the CEO receives a "minimum bonus", which is instead expressed as a percentage of the target bonus. When the bonuses paid achieve a certain level the firm does not pay out them longer. It represents the bonus "cap".

Stock options are contracts, which give the holder the right to buy a certain amount of company shares at a fixed price indicated in the contract. Executive options become usually vested over time: for example 20% every year for five

years. Unlike the contracts of Annual Bonus, where the discretion of board of directors has a limited role, in the Stock Options, the board of directors can decide the parameters of the contract

Finally, I am going to focus on the “Long-Term Incentive Plans” (LTIPs), a kind of compensation introduced to link the most possible the remuneration of executives to the performance. They are schemes that reward executives in case in which some specially set long-term performance targets are reached and they have the same structure of the Annual Bonus Plans. So, the biggest difference between the plans at issue and the latter consists in the longer time that the CEOs are allowed to use to achieve the bonus target.

4. The Earnings Management

The terms “Earnings Management”, generally refers to the use of accounting techniques to produce financial reports, which may paint an overly positive picture of a company's business activities and financial position. That takes advantage of how accounting rules can be applied and are legitimately flexible when companies can incur expenses and recognize revenue.

This technic is made possible because of the fact that the accountability is based on principles, what give a wide discretionality to managers who edit the budget. The latter document, indeed, is characterized by a series of subjective valuations that can change with the interests of the different subject involved.

Regarding the techniques of earnings management, , they can be classified in three categories, in reason of how they are implemented:

- a. Through operation on assets
- b. Through accounting operations, which are lawful under IFRS and US GAAP principles
- c. Through accounting operation, which are not lawful under IFRS and US GAAP principles.

In the first category all typical decisions are present. To make an example, it is possible to mention reduction of costs, earnings retention, and goods sales. The latter can present a certain ambiguousness, when they are actuated by the manager just to reach a short-term aim, and so to get a personal profit at the expense of shareholders' interests.

As regard of second category, in it is possible to collocate all the potentially manipulative operations on accounting items, in line with the accounting standards. Just think about the well-known "*special purpose entities*", or the derivative instruments, they allow to the managers to use discretion in evaluating the relative accounting items. Moreover, regarding the previous, problem, which is due to accounting loopholes, is these vehicles became a way for CFOs to hide debt. Essentially, it looks like the company doesn't have a liability when they really do and the results can be devastating.

Finally In the third category all the action that are not allowed under the law are inserted. They are simply identifiable in as much, they are represented by an accounting fraud.

5. The Empirical Analysis

To complete as best I can my study on executive compensation and earnings management, I have accomplished an empirical analysis about the relation between CEO pay and EM.

In brief, I have used as sample of firms the 100 companies listed in S&P 100 stock market index. The period of time, to which my analysis refers, is that from 2007 to 2012. Regarding the compensation measures I have used the Bonuses, Equity Pay, and the last but maybe more importantly, Total Pay.

Regarding the earnings management measures I opted for two different measures in order to best verify the CEOS' efforts, in spite of that is quite impossible.

As first measure, I have chosen the discretionary accruals so as calculated in Healy's study, since they seem to be the most appropriate measure to use, according to the fact that earnings management could occur every time. Thus,

$$DAC_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}}$$

where $DAC_{i,t}$ is the component of *discretionary accruals* for the firm i in the time t ; $TA_{i,t}$ are the *total accruals* for the firm i in the time t and $A_{i,t-1}$ are the total assets for the firm i in the time $t-1$.

Regarding the second earnings management measure I opted for the abnormal working capital accruals, calculated with the DeFond and Park formula. I have made this choice since many authors reputed that is the best way to estimate the earnings management although it is quite impossible to find the perfect measure

of earnings management. Thus,

$$AWCA_t = WC_t - \left[\left(\frac{WC_{t-1}}{S_{t-1}} \right) - S_t \right]$$

Where $AWCA_t$ is the abnormal working capital accrual in the time t ; WC_t is the working capital at the time t , calculated as difference between net current assets and net current liabilities and S_t is the turnover volume.

To conduct, as best I can, a study to verify a relationship, it is needful to create an econometric specification that explains the relation at issue.

Consider an individual CEO denoted by the subscript i . I assume that the the i 's compensation ($Comp_i$) is a function of performance over the time t ($Perform_{it}$), Earnings Management ($EM_{i,t}$) and the size of the firm (FS) like in a multiple linear regression. Thus:

$$Comp_i = \beta + \beta_1 Perform_{i,t} + \beta_2 EM_{i,t} + \beta_3 FS_i + \varepsilon$$

Regarding the measure of performance, I have chosen both an accounting measures and a market ones.

Firstly, I have opted for the ROE as accounting measures since the return realized by firm's shareholder seems the most appropriate measure to use, according to the consolidated agency theory. In my opinion return on equity gives suitable information about the efforts of the agents (CEOs) made towards principals (shareholders). Unlike Lambert and Larcker 1987, that understood the

ROE as the firm's earning before extraordinary items and discontinued operations divided by the average common shareholders' equity, in my study ROE is seen as the firm's net asset divided by the equity.

Thus,

$$ROE = \frac{Net\ Asset}{Equity}$$

Secondly, I've chosen the share return calculated as:

$$R_{i,t} = \frac{P_{i,t} + D_{i,t}}{P_{i,t-1}} - 1$$

Where: $R_{i,t}$ is the share return for the firm i at the time $t-1$; P_t is the share price of the firm i at the time t ; $P_{i,t-1}$ is the share price of the firm i at the time $t-1$ and $D_{i,t}$ are the dividend yields of the firm i at the time t

Regarding the measure of firm size, instead, I have chosen the logarithm of Total Assets

So, the MODEL 1 is:

$$Comp_{i,t} = \beta + \beta_1(DA_{i,t}) + \beta_2(ROE_{i,t}) + \beta_3(R_{i,t}) + \beta_4(LogA_{i,t}) + \varepsilon$$

Instead, the MODEL 2 is:

$$Comp_{i,t} = \beta + \beta_1(AWCA_{i,t}) + \beta_2(ROE_{i,t}) + \beta_3(R_{i,t}) + \beta_4(LogA_{i,t}) + \varepsilon$$

Moving on the results, it is possible to understand that it is true that exist a *positive* correlation between the two variables, but it also true that it is very *weak*.

The first observation is justified by the positive slope coefficient of DAC, β , of the trend lines in every of the table below. Indeed, in the table regarding the Salary the b equals to 498399,10; in the second one it equals to 1605080; in that one about the Equity it is 2386055; an in the last one it takes the value of 5139251.

Regarding the second observation, a foreword is necessary. The regression linear is a method to study how a dependent variable changes with the change of an independent variable. Being the regression a valuation of parameters, it necessary to understand how such an evaluation of futures values is trustworthy. Therefore, it is needful to calculate the coefficient of determination, R^2 . It provides a measure of how well observed outcomes are replicated by the model, as the proportion of total variation of outcomes explained by the latter.

It is calculated by squaring the value of Pearson correlation coefficient, ρ . Thus,

$$R^2 = \left(\frac{\sigma_{XY}}{\sigma_X \sigma_Y} \right)^2 \quad (6)$$

R^2 can assume values between 0 and 1: when it equals to 1 then all values of variables are points of the same straight line, in the contrary if it equals to 0 the model does not explain the data at all.

Moving from theoretical to practical, in each of plotter diagrams above the coefficient of determination is tending to zero. Indeed, it assumes value

included between 0,0066 of Table 4 and 0,0623 of the Table 3.

That being said, and given such small numbers for coefficient R^2 , I would say with some confidence that there is a correlation between earnings management and CEO Compensation, but we cannot speak about a *linear* correlation between the two variables.

Moving on the relationship between CEO compensation and earnings management as measured by abnormal working capital accruals, it is clear that about the table 8 it is possible to make considerations similar to those just made. Instead, regarding the other results, we can see that there is a *negative* correlation between CEO compensation and AWCA, but it is possible to deem it as null, being that the negative slope coefficients of AWCA, β , are tending to zero. Indeed it assumes values included between -0,0021478 and -0,0009026. Regarding the R squared, is possible to make the same consideration of before.

4. Conclusion

As I touched on in the previous Paragraph, the main conclusions of my thesis are that earnings management, as measured by discretionary is positive related to managerial compensation regarding my sample, whereas it, measured as abnormal working capital accruals, is not related with compensation and however in a negative way.

Nonetheless, regarding the MODEL 1, given that my sample contains the listed companies with more capitalization belonging to different industries it is perhaps possible to make a broader consideration. Hypothesizing that the results of empirical analysis are equal to those obtained if I had taken into account all

US firms and such a conclusion comes as no surprise to authors of the literature in the field, who with empirical analysis have demonstrated the correlation between CEO Pay and earnings management.

Instead, if we consider MODEL 2, the situation is the opposite one. In fact, if it was possible to burden the observations made about the sample to all the US companies, the manipulation activity actuated by managers would be ineffective and however directed to get a lower compensation.