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Summary

This paper is devoted to one of the most popular topics in the financial literature, the subject of executive compensation. Differently to a number of published papers we didn't look for an optimal value or structure of executives' compensation plans. Instead of that we decided to test whether executive compensation can have any significant impact on a company's performance. Our calculations are based on the data about publicly traded American companies in the time period from 1992 till 2009. With the help of cross-section analysis with fixed effects we tried to find out whether and how the performance of the company represented by return on equity changes together with values of executive compensation or each of its elements. The same analysis we have made in the case of return on equity and structure of executive compensation, taking into account weights of each compensation element. As a result we have received some significant data. For example our research could show the importance of the value and weight of annual bonuses. The increase of each of the two element leads to creation of a company's value. Equity-based compensation at the same moment has a negative impact on the rate of return according to our results. However the explanatory power of our results is low and even if coefficients are highly significant the influence of executive compensation on performance of a company is negligible. And even though results may be distorted by data composition or form of regression, they still may be considered as one point of view and the starting point for further discussions.

Zusammenfassung

Diese Arbeit beschäftigt sich mit einem der populärsten Themen der Wirtschaftsliteratur, der Managementvergütung. Wir haben uns hierbei nicht mit der Struktur oder einem optimalen Wert von Managementvergütung auseinandergesetzt. Stattdessen haben wir uns dazu entschlossen zu testen, ob die Art und Höhe der Vergütung des Managements einen signifikanten Einfluss auf das Ergebnis einer Firma hat. Uns stand dabei ein Datensatz mit Kennzahlen aus den Jahren 1992 bis 2009 zur Verfügung, der offen an der Börse gehandelte amerikanische Unternehmen umfasst. Wir versuchten herauszufinden ob und wie das Ergebnis einer Firma (ROE; Eigenkapitalrendite) sich im Zusammenhang mit der Höhe, sowohl der gesamten Managementvergütung als auch ihrer einzelnen Bestandteile, verändert. Zusätzlich untersuchten wir den Zusammenhang der Eigenkapitalrendite eines Unternehmens mit der Struktur der Managementvergütung – wobei die Gewichte der einzelnen Komponenten der Vergütung mitberücksichtigt wurden. Es zeigten sich durchaus signifikante Ergebnisse. Die Ergebnisse der Analyse deuten beispielsweise auf die Wichtigkeit der Höhe und der Bewertung einer jährlichen Bonuszahlung innerhalb des gesamten Kompensationspakets hin. Ein Steigen beider genannter Werte zieht gleichzeitig ein Steigen des Unternehmenswerts nach sich. Auf Stock-Options aufgebaute Vergütungsmodelle haben nach unserer Analyse beispielsweise einen negativen Einfluss auf die Eigenkapitalrendite. Insgesamt scheint die Aussagekraft der Analyseergebnisse gering zu sein, und selbst wenn einige Koeffizienten hohe Signifikanz zeigen, kann davon ausgegangen werden, dass der Einfluss von Vergütungsmodellen für das Management eines Unternehmens gering ist. Die Ergebnisse können durch die Zusammensetzung der Daten oder auch die Form der Regressionsanalyse verzerrt sein, dennoch aber als ein Ausgangspunkt für weitere Forschungen gesehen werden.

Introduction

The topic executive compensation doesn't become less interesting for economists over the time. And even more, the last financial crisis made executive compensation one of the most popular topics of public discussion. Not only financial literature but also daily newspaper discussed high amounts of money received by top-managers of some large companies while firms presented very poor performance. Such examples lead to heavy critique of compensation practice. Some specialists even see the false incentives provided by executive compensation as one of the forces of the last financial crisis.

The problem with executive compensation isn't new. The search for the best way to motivate executives has lasted already for some decades. During this time the structure of it changed, but problems seems to stay the same. Thus non equity-based compensation is a significant part of executive compensation. The introduction of this new element had a goal to increase the low pay-for performance sensitivity and secure the direct link between reward and company's performance. The method how it was made looks however wrong. Equity-based compensation is even more criticized then a usual annual bonus. Because of that main questions now are how we could improve the situation, save and increase the incentive power. Even governments take part in this discussion trying to develop a new regulation to improve the transparency and control.

All this information lets us conclude that the subject doesn't lose its actuality and that the discussion about it is still open and maybe it became even more important at present. The case is exactly described by Fabrizio Ferri: "Executive compensation has become the symbolic issues for the way we want to create wealth in the future. It's not just about whether bad guys are making too much money but about figuring out a sustainable economy."¹ Exactly because of that we decided to devote this paper to executive compensation problems as well. So we have asked whether such an attention to the problem of executive compensation is reasonable. Therefore the main question of this paper is what kind of impact executive compensation has on the performance of a company. To find an answer on this question we used a sample of data for the period from 1992 till 2009. On the base of this data we will try to find out whether the value of compensation and its structure may really provide incentives for executives to increase company's value.

The paper consists of two main parts. In the fist part of this paper we presented the overview of discussion about executive compensation in the financial literature. Beginning

¹ see The Coming Battle over Executive Pay in Harvard Business Review (2009), page 97

from the usual structure of it we will pay attention to advantages as well as problems of each compensation element. The important points in the first part of this paper are the current situation around the executive compensation, main changes and their followings. To present the complete picture we decided to include some theories, which try to provide some explanations for the optimal as well for the real value and structure of executive compensation. Finally we decided to include some recommendations made by economists with the objective to improve the incentive power of compensation.

The second part is devoted to our research. We tried to answer whether the value and structure of executive compensation may really have an impact on the company's performance.

1. Theory

At the beginning we would like to present why the discussion about the executive compensation became so important during last decades. In this part we also describe the situation with executives' reward which we can observe nowadays, so the current widespread structure of compensation, advantages and disadvantages of its elements. However we would like to begin with one of the most popular theories related to the right choice of compensation policy in the company – agency theory.

1.1 Agency Theory

The problem of executive compensation is almost always associated in the economic literature with the classical model of agency theory. In the case of a company there are different types of agency problem. In our case we are talking about conflicts on the highest level in the company, where shareholders are principals and executives are their agents. As we know if a company is managed by its owner and therefore there is no separation between ownership and control, there are no interests' conflicts and no agency costs (costs of agent's consent to perform according to principal's objectives, for example monitoring costs) derived by these conflicts, because in this case the owner receives all gains and bears all risks connected with different investment opportunities and will invest only in projects which can improve his value. But one of the main characteristics of modern corporations is a differentiation between ownership and control. Especially publicly traded companies in the United States usually don't have a controlling shareholder. Dispersed shareholders are not able any more to manage the company and to monitor all inside processes themselves. Thus they are forced to hire persons who have to run the company in the interest of its owners. In such a situation a conflict of interest is almost guaranteed.

Hiring new employees the principal can make certain opinions about knowledge and abilities of future executives relying on their previous experiences and achievements, but has no idea about their preferences and interests. There are two possible situations. The first one is unselfish behavior of the agent and working intensively to achieve the owner's goals, whose main interest is usually the increase of their own wealth. That means the improvement of a company's value. However agents usually pay more attention to their own aims instead of working according to shareholders' objectives. So the situation when executives make a decision with the objective to increase their private benefit looks more probable. In this case the strategy suggested by executives can deviate from the best course from the shareholders'

point of view. Such a situation is known as agency problem and the possible losses of a company's value forced by executives' behavior are called agency costs.

The problem wouldn't be so severe if shareholders could prescribe executives exact steps of action which have to be taken in any possible situation, but there are again a couple of obstacles for that. Firstly the management has more information about the real actual situation, investment opportunities and its risks, but such information is not accessible for firm's owners in the same volume so they are not able to do the right choice themselves and the only opportunity for them is to rely upon decisions made by executives. At the same moment actions of executives are usually unobservable for shareholders and accordingly are not controllable by them.

In this situation managers have a very advantageous position for reaching their own private goals at shareholders' costs. Shareholders would like to use any investment opportunity with positive present value (when expected return exceeds expected costs of project), but there is a probability that executives will make their choice in this situation trying to maximize their private gains. Owning just a small fraction of the company's shares managers don't have to carry all costs connected with investment projects, but they can consume significantly high benefits from them. For example in the case of stock options it does not make a difference for executives how much stock price is lower than exercise price. Because in any case such a stock option loses value for its owner. But any increase of stock price above of exercise price increases the benefit of executive. According to this fact executives are motivated to take excessive risk increasing their own wealth. And on the contrary top-managers could have an interest to reject some investment projects which are attractive from the shareholders' point of view. It happens in the case when these projects aren't consistent with risk-preferences of executives.

The difference in risk-preferences between shareholders and executives is one of important factors to explain the agency problem in the company. There are however more aspects besides investment opportunities which can be affected by opportunistic behavior of executives. So not only the rejection of a profitable investment project but also the time and size of investment can destroy the company's value. The situation is even more complicated because not only monetary but even non-monetary incentives can be source of deviation from the best possible course. For example seeing themselves on the top of large corporations, executives may start empire building and make some acquisitions or invest in some prestige projects. In the long-term perspective however such decisions can lead to destroying of a company's value and shareholders suffer additional costs.

Because of all problems derived by splitting of ownership and control shareholders need to find a method to motivate their executives to take an effort for achievement of shareholders' goals instead of opportunistic behavior. This function has to be fulfilled by compensation plans. The compensation systems should achieve linkage between private interests of executives and objectives of shareholders in such way that improvement of shareholder wealth means the improvement in wealth of executives and for loss of shareholder value executives would be punished by loss of their own wealth. As we know there is no perfect compensation contract - so called first-best solution of the agency problem cannot be achieved in practice and thereby the second-best solution is usually looked for, which is known as optimal compensation contract which has some requirements.

The first requirement is connected with the risk preferences of an agent. Generally to see the simplest way to solve the agency problem would be to let executives feel all negative and positive consequences of their decision. We can suggest that in this case executives have to perform more accurately and avoid projects that are too risky. But such a shifting of the complete risk by shareholders to executives would be a false solution in our situation. Contrary to shareholders, executives are risk-averse and they don't agree to take an effort if they have to bear the whole risk. Taking a decision with such conditions they will reject investment projects that, from their point of view, bear a high risk even if they have a positive present value. For acceptance of such a project and undertaking of additional risk they expect to receive some risk premium. Because of that contracts usually limit the value of risk bearing by executives, while shareholders have to endure all consequences of false executives' decisions. Thereby the optimal compensation contract has to be designed under consideration of risk-preferences of executives.

It has to be able to attract executives to take some actions providing at the same moment some rewards for them and some protection against risk connected with consequences of these actions. However this task can be complicated by some factors. Executives have to fulfill a demanding job and they are forced to take decisions every day. However these decisions are not only linked to investment projects but also to many other aspects connected with the company's activities. While creating executive compensation schemes it is difficult to foresee all problems that executives could face doing their jobs. So it is almost impossible to provide incentives of the same power for any kind of situation. Compensation schemes must not only ensure that executives' behavior follows shareholders' interests instead of their own objectives. At the same moment compensation plans have to provide such incentives that the value of effort which an executive is willing to take getting his reward would be enough to reach goals set by shareholders. Thus the optimal

compensation must allow to achieve the balance between provided incentives and risk premium.

Another important characteristic of executive compensation contract is of course its cost for the company. As we already mentioned such contracts include the premium for executives for taking additional risks. Because of that from all possible compensation contracts which provide incentives of the same power shareholders have to choose one which has the lowest costs for the company.

We don't have to forget that one of the functions of an optimal compensation contract is to attract talented top-managers and after that to retain them in the company. For this task the offer made by the company must at least meet the opportunity costs of its executives, which are actually related to the risk-aversion of them. To fulfill its functions the contract has to be accepted by both parts, to be transparent, clear and understandable for the executives. There are different designs of executive compensation, but the main requirement for all of them is to be created carefully and deliberately with purpose to provide incentives for executives to make appropriate decisions.

The executive compensation strategy at the same moment gives us many topics for discussions as well as it asks for many questions to be answered. From one side executive compensation has to provide competitive opportunities for the company. Thus the company has to define what place it would like to have on the employees market. For example it is important to decide how it could attract talented personnel and which advantages new employees will have in the company. Whether the level of compensation or its structure makes the company an attractive employer? Or may be there are other elements which are seen by employees as reward for the performance even if they are not officially a part of compensation? From the other side it should be clear what results shareholders would like to see and thereby choose the structure of executive compensation. For example it is necessary to decide about weights of reward for short-term and long-term performance, the mixture of fixed and variable or current and deferred components of executive compensation. If we say that executive compensation has to be a reward for managers' performance another important decision is to be made – the performance measure. The question actually is that kind of executives' performance seems especially important for shareholders (for example individual, team work, business performance, etc.), how it should be measured (objectively or subjectively; on the absolute or comparative basis; financial or operations measures) and the time interval of the measure (over what periods).

1.2 Structure of the Executive Compensation

The structure and level of the executive compensation can vary for industries and companies of different size. For example K. Murphy (1998) showed that companies working in the field of electric utilities pay their executives a lower compensation compared with companies in other industries. He also found out the positive relationship between level of compensation and company's size. So we can say that firm's characteristics and its environment have a significant impact on design and value of executive compensation. In the same work K. Murphy noticed the role of the geographical factor as well showing for example that executives of American companies are usually paid better compared with their colleagues in other countries. Another example is provided by G. Brunello and C. Graziano (2001) who analyzed the executive compensation in Italy. They came to the conclusion that the differences between Anglo-Saxon and Italian capitalism rouse the main differences in compensation systems of these two regions. For example the dominance of family owned companies with the pyramidal structure decreases the agency problem and correspondingly the weight of bonus payment as well as stock options in the compensation sum. Another example is the using of monetary compensation mainly for short-term perspective while Italian managers prefer non-monetary incentives (in form of promotion) for the long-term period and as following the stock options are not such an important part of the compensation as in the United States of America. Brunello and Graziano have compared executive compensation in Italy with the executive compensation in Anglo-Saxon countries; surprisingly there are some differences between Anglo-Saxon countries themselves as well even though they use similar corporate governance systems. Even though the executive compensation in United Kingdom was not a subject of active discussion during a long period of time it caught much more attention recently. Last research presents substantial distinctions compared with the executive compensation in the United States that even permit to associate executives in these two countries with "prince" and "pauper"². The association talks for itself – values of executive compensation are considerably higher for the United States even by elimination of influence of such factors as size of the company and industry where the company acts. The substantial differences can be mentioned in the structure of the executive compensation in both countries as well, for example stock options have more weight in the earnings of American CEOs while stock grants are not popular among their colleges from UK.

² see Conyon, M. and Murphy, K. 2000. The prince and the pauper? CEO pay in the United States and United Kingdom. *The Economic Journal* 110 (467): 640-671

The main object of our interest is the executive compensation in the United States which stays one of the main topics in financial literature during some decades. The compensation plan of American executives usually includes fix components for risk reduction and variable components for providing incentives and consists of four main components (K. Murphy (1998)): base salary, annual bonus and stock options and long-term incentive plan.

1.2.1 Base Salary

Base salary is a fixed sum which is guaranteed to executives at the end of period. Its weight in the total compensation is decreasing but the base salary is still one of the key elements of the executive compensation. Although talking about incentives provided by different elements of compensation more attention is paid to other components where as base salary is still an important part of any reward contract. Being officially fixed, base salary can vary a little – it can be increased for agents performing very well and reduced as a form of punishment for negligent performance. Besides of that annual performance is often related to base salary and the increase of it not only guarantees a certain amount of money but also can lead to higher bonus premiums. Therefore the value of salary provides some limited incentives for acceptable action or at least for minimal action which has to be taken for keeping the position in the company. However the base salary helps shareholders to protect executives against some part of risk. It happens because base salary is a fixed amount of money which executives will receive at the end of the period independently on their performance. This fact and the risk-aversion of executives are probably the main reasons why base salary is still not excluded from compensation contracts.

The value of base salary is determined and derived by different factors such as situation in the industry, size of the company, position in the firm and knowledge and experience of the person. The company has two problems choosing the value of base salary for its executives. Firstly the company has to do a good offer comparing with its competitors to attract talented and competent managers. Actually since base salary lost its position of the main compensation component its value is not any more so important for a decision about taking a job as executive but it can still be an argument for risk-averse candidates. The second problem is more serious – it is necessary to decide whether every employee doing the same job has to be rewarded identically or differently. In the first case even minimal incentives provided by base salary can disappear, because agents see no differences performing well or

not. From the other side it is difficult to identify objectively who was better or worse from the group and differential value of base salary guarantees conflicts in the group.

1.2.2 Annual Bonus

The next important part of the compensation structure is the annual bonus premium which has a function to reward the current performance of executives. Annual bonus was the main mechanism for achievement of tradeoff between incentives and risk during a long period of time until stock options were suggested as part of executive compensation. The main parameters necessary for calculation of the annual bonus are performance measure and the relationship between performance and the value of paid bonus.

The choice of suitable performance measures is the key factor for the creation of a well functioning bonus system. The task looks not so easy because as it was mentioned earlier the action of executives is usually unobservable and it is necessary to find some variables that in any proportion could represent the performance of executives. There are different theories suggesting the optimal performance measure. At the same moment in the economic literature there are a lot of examples how the mistakes in the choice of performance measures can lead to failure incentives and to false executives' decisions. Steven Kerr (1975, p. 779) described such firm's behavior as "hoping for performance, rewarding attendance". And these mistakes together with their consequences are the best proof of the importance of correct choice. The agency theory says that the optimal performance measure has to be the measure of performance that is best observable by the principal – the better the performance is observable the lower is the risk premium which has to be paid, providing the same incentives – and reflect in the best way his objectives. Holmstrom (1979) had another opinion and claimed that the compensation of executives has to be determined on the base of the most informative measures. He claimed that even though such performance measures don't represent directly the aims of the principals, they allow submitting actions of the agent better than another one. In Holmstrom's theory the accessibility of data plays the main role for the choice of performance measure. The main contra argument of this theory is the distortion of the performance measure³. The better observable parameters are not always the best if they don't clearly reflect a company's purpose. Estimation of bonus payment on the basis of any performance measure gives executives incentives for improvement of value. Correspondingly if the performance measure doesn't reflect shareholders' goals, efforts of executives seeking

³ Distorted performance measure – then some efforts of the agent have another influence on the objectivity of the company as they effect the performance measure. See Baker, 2002 for more information about the role of distortion

to improve it are unreasonable from the standpoint of shareholders. The more performance measure is distorted the higher cost the company has. In the practice companies are looking for ways to reduce their costs increasing in the same moment the incentive power of the bonus plan. However the more popular performance measures are still widely criticized because of their short-term character accounting data such as revenues or net profit (using of them can provide false incentives and motivate executives to fraud with accounting values), the shareholder value (represented for example as earnings per share) or growth rates. Also non-financial performance measures for example customer satisfaction are often used (more likely by industrial companies then by financial institutions⁴). Another opportunity is using the relative performance measure. In this case the performance is evaluated related to some benchmark. Such a model can protect interests of managers because they don't have to carry the responsibility for decline if the whole industry (not just the company but its competitors as well) was concerned. Even though relative performance is not able to provide the same incentives as a firm performance measure does⁵. However according to Murphy (1998) less than 50% of US companies used at that time only a single performance measure, the main part however calculated their bonus premium on the base of two and more performance measures. Companies from the second group have usually three opportunities: the performance measures could be summarized (the impact of each performance to the total bonus is independent from others), multiplied (the results from one performance measure can influence not only bonus paid on it, but also bonuses paid on the other measures) or be used in the form of a matrix.

The bonus is usually paid for reaching certain results or goals. These goals can be determined in the annual budget, can be calculated on the base of results from previous years or compared with other companies acting in the industry. In the first case bonus is paid for achievement of certain figures specified in the budget. The goal can be defined as a single figure as well as combination of indexes (even non-financial objectives). The main disadvantage of this approach is the difficulty of making detailed and accurate forecasts of a company's performance. Thereby executives might have incentives for gaming to push up figures if results defined in the budget are not reachable till the end of period. If a company uses the performance of previous years as a base to estimate the annual bonus executives are motivated to improve the actual figures and deliver a substantial performance. This approach is also well understandable for employees. However in the long-term perspective such an approach can lead to destroying the company's value. Because of the connection of

⁴ see Murphy, K., 1998

⁵ see Jensen and Murphy, 1990

compensation with the difference between current and previous performance executives have no incentives to perform especially well in any single year. Otherwise they would penalize themselves in the next period. Another opportunity is to compare performance of the company with the average performance in the industry or of selected group of a company's competitors. Such an approach has two sides. From one side managers are protected from the processes outside their control, which would influence all companies on the market or in the industry. At the same moment the accurate determination of results is complicated because of lack of information about selected companies accessible to outsiders and thereby the comparison of these performances may have not enough information power to decide about executives' effort and reward for it.

The relationship between performance measure and paid bonus plays also a very important role. For example it is known that using of the pay-for-performance structure known as "80/120" can lead to false incentives – reaching the maximum possible bonus executives can reject potentially successful projects or shift them to the next period. At the same moment there is a chance, that they take some too risky projects if there is at least a low opportunity to increase their bonus at not effective periods.

There is another reason why conditions of bonus payment are so important – time preferences of executives about which shareholders have no notion. One of the main objectives of shareholders is success of the company in the long-term perspective. Executives however are willing to leave the company after some periods of time. In this situation executive compensation in general and bonus payment particularly have a function to retain employees in the company; the compensation payment has to be designed in such way that executives would incur some losses leaving the company. In the case of annual bonus the so called bonus bank can perform such a function. The idea of the bonus bank is that not the whole charged annual bonus is paid at the end of the period, but only one part of it while another part will be credited to an account in the bonus bank. At the same moment the actual bonus payment is increased on the fixed proportion from the amount in the bonus bank. In such way bonus bank doesn't have problems connected with the classical "80/120" structure – working for a long-term perspective, bonus bank leads to some balance between risk and risk preferences of executives. This balance is reached because executives are actually punished for false decisions by reduction of the amount on the bonus bank account, at the same moment in the periods of distress executives in spite of it receive their bonus paid from the bonus bank's resources.

1.2.3 Stock Options

A relative new component of executive compensation are stock options. Stock options are contracts that give the employee the right to buy a share of stock at a prespecified “exercise” price for a prespecified term.⁶ The stock options received by executives can be exercised over time till their expiring (usually in ten years), they cannot be traded and are usually forfeited if executives leave the company before vesting (“vested” are stock options that can be exercised). Compensation plans usually regulate the period of vesting. The most popular model used by companies is when different portions of executives’ stock options are vested after predefined terms. The idea behind such vesting schedule is long-term perspective of this compensation form. Executives have motivation to stay in the company if they keep unvested options and to take an action to increase the value of the company. Some companies use a different model when executives’ stock options are vested only after achievement of predefined performance, for example certain value of accounting measures, increase of stock price or profitability of the company. By exercising of stock options executives and company have two opportunities: either the company issues new shares and executives buy them paying the price determined in the stock option contract in cash, or they can use a “cashless exercise program”. According to the second suggested variant executives receive just a difference between exercise price and market price at the day of exercise: the difference can be compensated in cash or in form of company’s stock.

The history of stock options as a part of executive compensation began in the 80s and already in the middle of the 90s they became a main element of the executive compensation. K. Murphy (1998) sees two forces for such changes – political and economical⁷. According to his idea traditional compensation plans didn’t match the interests of the new economical situation; companies were looking for new ways to motivate their executives. This idea had to be realized by the introduction of stock option as a form of reward for companies’ top-managers. In the case of using stock options, the amount received by executives has a direct correlation with the shareholder value that has to provide extra incentives for executives to act in the interests of the company and its owners (shareholders). Another impulse for the rise of attention to stock options was given by some new regulations made by the Clinton Administration, which in 1993 deducted limitations on none-performance related pay and introduced tax advantages for companies which used performance-based compensation. Such companies received the opportunity of tax deductibility of executive compensation. The

⁶ see Hall and Murthy (2003), page 50

⁷ for more information see Murphy (1998), page 21

regulation had an objective to create some restrictions for executive compensation. Government tried to find a method to motivate companies to secure a stronger link between performance and executive compensation and try to prevent the unreasonable and endless increase of it. According to this regulation, stock option grants belong to performance related pay and their inclusion into executive compensation gave companies tax advantages. This fact made stock options extremely popular and their weight in the total compensation increased. So instead of achieving its aim this regulation led to shifting of incentive contract towards the direction of stock option.

The advantages of stock options as a form of reward can make them very attractive for both employer and employees. From one side the main advantage is of course the linkage between company performance and executives' benefits, which ought to intensify incentives provided by compensation. In the situation when the personal gain of executives depends on the market price of a company's stock they have private interests to improve it. Performing for improvement of stock price executives at the same moment apply an effort for achievement shareholders' objectives. In such a case providing powerful incentives, a company doesn't need excessive cash to motivate its top-management. This fact can make stock option especially attractive for companies having a cash deficit. The evidence is however mixed. From the other side companies can use stock options in the role of selection factor for their employees, because such a compensation form makes the company attractive for motivated, ambitious and entrepreneurial agents who are less risk-averse. For example so called new economy companies are usually interested in such employees and this fact could be one of possible explanations of intensive use of stock options by companies from this field.

Another advantage of stock option is the probability to increase the value of risk bearing by risk-averse executives. As we know already managers are usually risk-averse and might decline projects which have higher risk even if they are attractive from the shareholders' point of view. So DeFusco, Johnson and Zorn (1990) reported an average increase in variance about 15,96% for the sample which consists of 59 firms. This feature of stock options makes them especially attractive for shareholders although exactly this characteristic will become one of the main problems of this compensation form as we will see later. Stock options as well as some annual bonus structures can act as retention means for executives. Because of impossible immediate exercise of stock option and forfeit of it in the case of the executive leaving the firm before options' vesting the position in the company looks very attractive for executives especially when market prices are much higher then the exercise price of an option. However the use of stock options for such objectives can do a bad

turn to organization. In the situation of recession on stock markets seeing no chances to improve the stock price, top-managers can use an opportunity to change their employers.

Even if stock options can help shareholders to induce executives to take an action for the increase of a company's value there are some very important problems connected with stock options compared with cash compensation. For example Murphy (1998) suggested that "options are an expensive way to convey compensation because risk-averse managers will demand large premiums for accepting risky options rather than safer cash"⁸. In this case he is talking about opportunity costs of stock options used as a part of executive compensation. These opportunity costs can be determined in different ways. For example costs of stock option can be equal to the price which the outside investor is ready to pay under the same conditions that executives have. The differences between executives and outside investors play a very important role for the calculation of stock options costs. The main of them are the risk-aversion of executives and missing opportunity to hedge the risk. It means that outside investors can from one side hedge their risks by short selling of the underlying stock and from the other side use stock options for diversification their portfolios. These opportunities are not available for executives. Because of regulation of exercise of stock options executives have to keep bought shares during some period of time. Therefore top-managers have their own portfolio which contains shares of one company. Keeping shares executives have a risk that stock price falls without an opportunity to hedge it. Because of that we can expect that stock options have higher value for external investors than for executives, because executives' portfolio is more risky.

Hall and Murphy (2003) taking some assumptions "find that employees value options that have just been granted with the exercise price equal to the market price at only about half of their cost to the firm."⁹ That means that using stock options in the executive compensation instead of non-equity-based compensation companies suffer costs twice as high as they have using salary or annual bonus to provide a reward with the same value. They have also determined that this gap between cost and value of stock option is smaller for the cases when the vesting period of stock option is long or when the exercise price is higher than the market price. Such differences are explainable by executives' risk-preferences, being risk-averse they are not willing to accept compensation contracts which bring too much risk (the gains according to such contracts are variable and will be realized only in the future periods while executives have to take actions today). Because of that this risk is shifted to the company by payment of risk-premium to executives and it increases its costs compared to the value of

⁸ see Murphy, K. (1998), page 20

⁹ see Hall, B. and Murphy, K. (2003), page 56

stock option. However we have seen that stock options can be really costly for the company and there has to be another explanation why they are so popular among companies.

In spite of all advantages of stock options this kind of executive compensation gained many opponents. Because of that the discussion about stock options in financial literature nowadays is devoted to two main subjects. On one hand some economists mention the advantages of stock options while on the other hand problems derived from the use of executive stock options are becoming clearer with the time. The main disadvantage of stock options is of course the loss of incentive power if the current market price falls below the exercise price especially when it happens shortly before expiring when executives see no chance to influence the stock price to their advantageous. This problem begs the question of how the exercise price has to be chosen to provide maximum incentives to the top-management. Some companies consider that the exercise price has to be set above the current market price. However Hall and Murphy describe such an option as a “poor incentive device”¹⁰ and suggested that the optimal exercise price for stock options should be under market price at the day of grant. They explain that only such stock options can provide incentives for executives because both increase and decrease of stock prices are sensible for executives. In any case because of significant differences among companies it is difficult to imagine that only one possible solution exists which would be suitable for all possible situations. Even though there is no universal answer for the question about the perfect exercise price, some form of uniformity exists. From one side most companies use the same method for an estimation of the exercise price. From the other side once the decision about the exercise price was made the company uses the same value for all stock grants independently on the time before vesting.

There is another situation when options lose their incentive power or can work even counterproductively. Such events occur when executives keep stock options which will be vested at predetermined date but aren't exercisable at the moment. However if these options have already moved in-the-money executives are motivated to avoid any risk taking and would reject profitable investment projects which are too risky from their point of view. If shareholders expect from company's management the desired performance they are forced to issue new stock options to provide executives new incentives. Such issuing is quite expensive for the company because new options have to generate incentives for risk-taking and to be able to counteract the other ones kept by executives.

Shareholders could avoid additional costs if they allow their executives to exercise options earlier. Giving executives such an opportunity shareholders reduce the number of new

¹⁰ see Hall, B. and Murphy, K. (2003), page 59

options however they face another problem – what number of options permitted to be exercised earlier is optimal? A false decision would have regrettable consequences. If the number of early exercised option is too small, it doesn't change the behavior of executives and shareholders are still obliged to provide extra incentives for risk-taking. If executives receive a permission to exercise early too many options shareholders face again additional costs because they are forced to issue new options to retain executives in the company. One possible solution for this dilemma is the so called performance vesting. This kind of vesting is associated with a stronger link between performance and executive compensation. Shareholders who choose this kind of vesting set the performance which they expect to see from their executives. The stock price is usually used as performance measure and the stock options are not exercisable until the stock price doesn't climb over the minimum price level desired by shareholders. After that executives can exercise 100 per cent of their stock options.

However Brisley (2006) has the opinion that the introduction of “progressive” performance vesting might increase the efficiency of equity based compensation. This structure combines two known forms – stock options are vested partially when the stock price reaches given levels. Executives are willing to exercise more options with increasing stock price and now they have a choice to exercise their options or to wait for the next portion of options to be vested. When the risk becomes too high for top-managers and they have an opportunity to exercise already vested options thereby they receive new incentives to take an action for further increase of stock price. “It can be his (managers) own risk aversion that acts to remove those incentives that would otherwise stop him from taking risk”¹¹. Shareholders don't need to provide extra incentives for risk-taking any more and can thereby reduce compensation costs because executives don't ask a high risk premium now.

Another important problem of stock options is the fact that use of them might motivate executives to take additional risks. This feature we have mentioned already enumerating the main advantages of stock options. However in some situation decline of executives' risk-aversion can also have negative consequences. For example in the situation when stock options seem to expire worthless executives have strong incentives to take risky projects with high returns in the good state of the world but with the negative present value using their last chance to raise stock price. Executives rewarded by stock options could have conflicts with bondholders as well. Risky behavior of executives improves the value of shareholders but leads to destruction of bondholders' wealth. While risky investment projects increase the volatility of stock price one part of project costs is borne by bondholders. We can find evidence by DeFusco, Johnson and Zorn (1990). Their findings show that bond prices react

¹¹ see Brisley, N. (2006), page 2504

negatively on the announcement about introduction of stock option plans while stock returns increases around this time point. That means that bondholders see problematically for them the inclusion of stock options in executive compensation while shareholders find such news positive.

Also some economists have the opinion that large size-stock options grants don't provide incentives for required behavior for executives but instead of that can motivate them for some manipulation to increase the stock price. Even though the stock option were introduced with the idea to avoid gaming that was famous from the case of annual bonuses based on accounting data we come to the situation that independently from the form of compensation "incentives can sometimes have the problem of motivating too well, rather than too little"¹². One example of such manipulations is the case when a company is overvalued. The rewarding of executives in form of stock options can induce them to continue to invest even if it is unreasonable or manipulate earnings for confirmation of too high value of the company.

In the chapter devoted to annual bonus we said that the choice of performance measure is a very important part of compensation plan development. The stock market looks like being the most objective, observable and most independent on executives in sense of possible manipulations. However even by this form of compensation executives have an opportunity to use it in such a way that their personal benefit increases without caring about shareholders' value. So during the years executives gain even more experience with stock options and find out how they can control the stock price around the option grant day using their private information. If top-managers behave opportunistically and they are looking for any chance to increase their benefits they would like to receive stock options granted either after any significant stock price decrease or before foreseen increase of stock price. Because stock options are usually granted with the strike price set not far from the stock price at the day of grant such timing would increase the probability that at the moment of exercise these options will be in the money and not worthless. It is the reason why executives have incentives to keep the company undervalued and stock prices low at the moment when the stock option price is set, shifting the announcement of good news to later periods. Such methods can be rather used if the company grants options at the same period each year. In this case executives could use their relationships with the compensation committee and try to shift options grant to a time point most advantageous for them. However the weight of unscheduled awards increases during the time¹³.

¹² see Hall, B. and Murphy, K. (2003), page 61

¹³ see Erik Lie (2004)

Independently on the ways how executives manipulate the time of options grant the fact of this manipulation became obvious with results provided by Erik Lie. Analyzing periods around CEOs awards during 1992-2002 he found out that abnormal returns before the grant day were negative and declined even more when the day come nearer. From the other side returns began to rise immediately after the reward. This tendency is more evident by unscheduled awards and becoming stronger with the lapse of time. This data allows Lie to conclude that executives having an opportunity to influence timing of stock options grant use this chance even more effectively. Also owning the whole information about their companies and future perspectives executives are motivated to increase their gain catching the right moment for exercising of stock options putting them artificially in-the-money while these options are actually at-the-money.

Executives have an opportunity to use their private information not only to time stock options grants but also for timing of stock options exercise. Top-management owning the complete information about the financial state of a company, investment opportunities and market situation are able to form a clear picture of future perspectives of the company. The combination of access to data which is closed for outsiders and reward in form of stock options provides motivation to use this information opportunistically to increase personal benefits. So for example if executives foresee a decline of stock price in the near future they have an incentive to hold the unfavorable news until stock options are exercised. From the other side instead of data manipulations on the base of such news top-managers could prefer to exercise their options. As well as other stockholders of the company they would like to reduce their position facing negative prognoses about the future perspectives. Holding options they cannot sell, executives in such a situation have only one opportunity to ensure their reward – to require shares and to sell them till the information is accessible for outsiders and the stock price declines.

Sarbanes-Oxley Act of 2002 was introduced with the goal to improve the corporate governance and to complicate earnings manipulations for executives. The Act ought to increase transparency of the reporting in companies, internal control of the reporting and responsibility of managers for correct reporting. However it couldn't solve the problem completely even though helped to reduce it. At the same moment The Act became a reason for the problem being transformed. After new rules were introduced, manipulations of another nature increased. Now executives just prefer to take decisions in such a way that allows them to increase the short-term performance instead of value creation. For example they can shift certain transactions in a way favorable for them or invest in risky projects. In this situation there are no manipulations by reporting and Sarbanes-Oxley Act isn't able to counteract them.

If the guess about such opportunistic behavior of executives is true then we could expect that stock options exercise would be accompanied by abnormal positive stock return during the pre-exercise period and abnormal negative stock return at the time after it. The evidence however is mixed.

Carpenter and Remmers (2001) tried to find whether executives use their private information to time stock options exercise analyzing the data from 1984 to 1990 and from 1992 to 1995. The sample is divided in two parts because of changes introduced in May 1991. Till that moment it was prohibited to sell the stock options during a period of 6 months after exercise. This regulation was called off in 1991. Because of this requirement the behavior of top-managers during the first period differs from their decisions taking process after executives received the right to sell their stock options immediately after exercise. When top-managers are obliged to keep exercised stock options for some time they are less willing to exercise their options in the case of foreseen forthcoming decline of stock price even though they could do that pursuing the objective to derive at least some benefits from being in-the-money stock options.

Results showed that stock options exercises are preceded by increase of stock returns. The results are similar for both samples even though pre-exercise stock returns during the first period are significantly higher than they are after the year 1991. These results however can't be used as a proof that insiders take a decision about exercise of stock options on base of their private information. The analysis of stock returns during the post-exercise period allows to conclude that insiders had a tendency to use their advantages from access to information during that time when the sale of received shares was forbidden during 6 months after option exercise. This trend wasn't found in the post-1991 period. So in the first case it was noticed that stock return continued to rise during the following six months. For the second case we would expect to find abnormal negative returns but this expectation was not confirmed. At the same moment stock returns at pre-exercise date look to be higher in the cases of small companies as well as when trades are carried out by top-management and not by other insiders. This conclusion is logic because the opportunity to raise personal benefits from inside information depends on the size of this information and its availability for outsiders. Large companies are usually forced to publish their reports and the difference between amount of information accessible for insiders and outsiders is not as significant as in small companies. So the economists came to the conclusion that executives in small companies are used to time their stock options exercise according to their private information about the company's situation because abnormal negative returns showed up by analysis of the stock price performance for such a sample. However all in all the presented results show that now

executives have no interests to use the information asymmetry and exercise their stock options at the moment when they experience the deficit of liquid funds or have a wish to diversify their portfolio.

Another study for the same question was made by Bartov and Mohanram (2004), who as well tried to find out if top-managers use their private information to time stock options exercises and what kind of information they need for such behavior. Differently to the study mentioned above they focused only on large exercises and didn't include all exercises in the sample. The authors supposed that there can be different motivation for top-management to exercise their stock options – so abnormally large exercises can be induced by private information while small ones by other motives such as needs of liquid funds. The logic behind it is very simple. Opportunistic executives are looking for every chance to raise their personal benefits. So if the hypothesis about taking decisions on the base of inside information is true then top-managers would like to exercise immediately a significant amount of their stock options but not just a few of them when they regard a certain day as perfect moment to do so on the base of available inside information. Because of that we could suggest that if such activities take place abnormal negative returns have to occur only after large stock option exercises.

Paying attention only to abnormal large stock option exercises Bartov and Mohanram found the evidence of their hypothesis about extraction of advantages by executives from information-asymmetry. Their estimations made from a sample dating from 1992 till 2001 provided results which show abnormal positive returns at the pre-exercise period and abnormal negative returns during last two years following the exercise. These results are similar for companies independently on their size. The next question is whether top-managers prefer to manipulate the accounting data before exercise to raise the stock price or to exercise prior reporting of bad news. According to the findings executives as well as other shareholders choose the moment to exercise their stock options on the base of their company's earnings. Even if outsiders usually have access to some amount of information and have an opportunity to make an assumption about the company's performance prior to official reporting their expectations seem to be too optimistic and executives still have a chance to derive advantages from the information remaining inaccessible to outsiders. The next question is why outsiders don't recognize the future decline of a company's performance. It seems that executives are used to take maximum advantages from their position and use their power to manipulate the earnings value before exercise. According to the evidence without influence of top-managers stock price wouldn't vary significantly around the time point of exercise. That means that executives have an incentive to inflate earnings at the period prior to exercise if

their benefits from such manipulations are so considerable that they could compensate the decline of earnings and thus the decline of compensation at post-exercise period as well as low value of stock options granted at the time of abnormal stock returns with too high strike price. This study gives us the next proof of false incentives provided by executive compensation in form of stock options.

Bebchuk, Grinstein and Peyer (2010) analyzed this problem from another point of view. Differently to previous studies they decided to test opportunistic timing of stock options grants on the base of lucky grant events. As lucky grant events they call stock options grants which were made at the days with the lowest stock price. The study is based on the data about CEOs stock option grants during the 1996 – 2005 period. According to their estimations about 50% of CEOs' stock options granted at such days are due to opportunistically behavior. And this result doesn't vary significantly during the year. Thus executives don't necessary link their decision about timing of stock options grants to the quarterly announcement of earnings. The authors also estimated that gains for executives from such manipulations are a significant part of CEOs' compensation. Of course such timing could be due to usual practice of firms. However the hypothesis that companies use such lucky grants for executives intentionally with the objective to compensate in such a way low reward provided by other forms of compensation couldn't be confirmed. Even more the positive correlation between gains from lucky grants and reward received by executives in any other form was noticed. At the same moment the event of lucky grants is a product of intelligent decisions. They don't happen by chance and their number increases in months when the company's stock is more volatile and therefore the possible benefit from lucky grants is higher. These facts allow to conclude that lucky grants events might be a sign for substantial problems and weakness of corporate governance which are used by executives to derive gains from the situation and to increase their benefits.

Every form of compensation is introduced to somehow reward the management for good performance and has to motivate it to continue to perform in the interests of shareholders. In the case when stock option grants depend on changes in the absolute share price executives don't need to present any results to secure their compensation because stock price often depends on factors uncontrollable for executives¹⁴. This problem has two sides: on the one hand executives have to bear all risks connected with unfavorable changes on global markets or/and in industry and even assiduous managers can receive smaller benefits than they had originally been entitled to at the end of the year; on the other hand in the situation of

¹⁴ Bebchuk, Fried and Peyer (2010) in their article "Lucky CEOs and Lucky Directors" make reference to one American study which presents that just 30% of share price changes are induced by performance of the company while the rest reflects general market situation.

market rise their compensation increases without any effort and even poor performing executives can enjoy substantial amount of money. The second part of the problem is especially important for the shareholders who are looking for the cheapest way to provide incentives for their top-managers, however in such cases their expenditures for executive compensation are worthless because incentives provided by stock options are minimum.

The companies could change the design of stock option compensation in a way to exclude or reduce the influence of side effects that allows evaluating executives' performance more accurately. There are some methods which allow shareholders to do so. One of the popular ideas is the indexing of the option's exercise price – for example executives receive some option with the exercise price equal strike price multiplied by market or industry index (the indexes however can be different and have to be chosen for each company on the assumption of its concrete situation and its environment). Getting such kind of options executives are induced to contribute some effort for providing stock price increase higher than market rise and thereby shareholders are able to provide more powerful incentives for executives without raising costs even promising the greater amount of options. Another way to mark out executive contribution to stock price changes is the introduction of options which are exercisable only in the case when a company shows the appointed performance. To fulfill such tasks the performance can be compared with some benchmarks. Only if this performance exceeds a value of the benchmark executives can exercise their options. The structure is very similar to an indexed option but gains of executives deviate – in the second case the exercise price is usually equal to the market price at the granting day that means that for reaching a certain performance the manager will be rewarded with a higher amount of money per option as in the first way because the strike price in the first variant is set higher than in the second one; in the first case executives usually receive a higher number of options.

However just a small part of American public traded companies use this or similar methods to single out the executives' performance from changes of stock price. Such a situation looks strange especially after the discussion above about higher costs and lower incentives provided by option plans which are based only on the absolute share price changes. There are some possible explanations of this phenomenon in the financial literature. One suggestion is that such a modification of compensation plans requires substantially higher costs that couldn't be compensated with achievable savings. Other economists don't see any sense in this explanation and think that shareholders have an objection to induce executives to switch to another industry and in this case it is very important that the industry performance has some influence on the value of executive's compensation. There are also some alternative explanations such as tax savings or that indexed options wouldn't be accepted by risk-averse

executives because introduction of this kind of options decreases the probability of payment; indexed options can also induce executives to take too risky projects. In any case all versions have supporters and opponents and each can produce some arguments against and for one or another theory but there is still no general solution of this problem.

Now we can see that stock options still couldn't solve the problem of optimal executive compensation, creating in some cases false incentives for top-management. Murphy explains the popularity of stock options ("that are difficult to rationalize from an incentive standpoint") by tax advantages that they provide for the company. Hall and Murphy (2003) suggested that the one of possible explanations of increase in the intensity of stock options use is taking into account "perceived" costs instead of economical costs of stock options. They mean that calculating the value of new stock option grants shareholders take into account only incentives provided to executives and tax advantages associated with it rather than high opportunity costs of stock options. Costs estimated in such a way are lower than economical costs and stock options by mistake look as a cheap method to motivate executives for good performance.

1.2.4 Other Components of Executive Compensation

Many companies use other components of executive compensation as restricted stock, long-term incentive plans and retirement plans.

Restricted stock is another form of stock-based compensation that means that it has to provide similar incentives as stock options compensation tying together the gain of executives and the company's performance measured in stock price. Stock doesn't become the property of executives immediately after it is granted. Similar to stock options they have a vesting plan. Only after restricted stock is vested high level management is able to cash it out. Thus restricted stock as well as stock options fulfill a function to keep executives in the company. Because of the similar structure restricted stock has also some disadvantages which are typical for stock options grants. For example executives receive same opportunities for gaming which we mentioned while we were discussing problems with stock options. So they have incentives to manipulate the timing of restricted stock grants or the stock price around the day of grant to increase the value of this grant and therefore to maximize their private benefit.

Restricted stock has some advantages comparing to stock options: it doesn't suffer the loss of incentive power and motivates top-management to take appropriate action independently on current stock price. Inclusion of restricted stock into executive compensation can induce managers to bear more risk in spite of their risk-aversion and at the same moment help to avoid the adoption of too risky projects. Another positive effect of

restricted stock is motivation for executives to provide balanced dividend policy. Owning shares by themselves top-managers can take direct advantages from dividend payments while in the situation of stock option executives have incentives to reject dividend payment and to prefer share repurchases. Barron and Waddell (2006) provided some evidence to this effect, analyzing equity-based compensation for the period from 1992 till 2003; they found out that companies paying dividends use restricted stock more likely than stock options. Large companies have the same preferences.

Another usual component of executive compensation, which is often omitted in the discussion about executive compensation are pension plans. Generally the value of executive pension is related to either executive salary or sometimes to salary and target bonus and length of service of executive in the company. There are two typical approaches to calculate the pension value: defined-contribution and defined-benefit plan. As we know pension plans are also often used in compensation schemes for lower level management, but in the case of executives there are some principal differences. Being calculated on the base of annual compensation, the value of executive pension is substantially higher than the pension value of other employees. Therefore companies are forced to look for methods to estimate and to regulate this value which differ from usual qualified pension plans – supplemental executive retirements plans (SERPs). The design of SERPs is a concern of the company and the decision about it is very important because failures in its elaboration can have similar effects as a wrong design of bonus payment and therefore can be costly for the firm – for example instead of providing incentives for executives to stay in the company it can induce extra costs for their retention.

As it was mentioned above benefit received by executives in the form of pension plans are often disregarded by different studies about executive compensation. The main reason is that the consideration of pension plans is complicated by the complexity of information availability for outsiders. It happens because of the non-transparency of executive pay. According to American disclosure regulation¹⁵ companies aren't obliged to provide information about annual increase in the value of an executive's pension benefits if they decide for defined-benefit approach, which is especially popular among public companies and therefore this data is available only for a limited number of persons.

Independently of difficulties with access to information about values of pensions they are however high enough to take them into account. In their paper devoted to the subject of executive pension plans Bebchuk and Jackson (2005) provided some examples from practice

¹⁵ The regulation published by U.S. Securities and Exchange Commission. It provides rules for all public traded companies about disclosure with the objective to improve structure and transparency of the communication between companies and their investors

showing how substantial can be the value of executive pensions not only in relation to total compensation but even to company value. Also numbers received by them can confirm this idea: the mean ratio of pension to non-equity compensation throughout tenure of employment in the company of top-managers is about 0,6:1, that means that on average amount of CEO's pension compensation reaches approximately 60% of total non-equity compensation received by CEO during his entire career in the company; the ratio of pension to total compensation is lower but still substantial – 34,5% of total compensation as CEO or 30,2% of total compensation throughout the tenure at the firm. The results have however very high variance – for example the ratio of pension to total compensation in their sample varied from 1,1% till 114,7%. Besides the value also the structure of executive compensation looks quite different compared with the usual one taken into account – because of their nature pension benefits are more similar to base salary. Thereby their inclusion in the estimation increases significantly non-equity compensation ratio and the variance of it. Therefore it is obvious that without appreciation of pension values the picture of executive compensation isn't complete. Bebchuk and Jackson also considered that ignorance of the pensions value can even lead to some distortion by evaluation of executive compensation (undervalued compensation), determination of its importance and role as well as estimation of sensibility between compensation and performance of the company (overestimation). The exclusion of pensions can also prevent the correct conclusion by comparison of compensation for executives with different pension plans because of the divergence of SERPs among firms.

There is just little evidence about the function of pension plans in executive compensation. Being not related to performance of the company, pension plans cannot be used for providing incentives to executives. The interest for retirement plans from the shareholders' viewpoint also cannot be explained by tax benefits because companies actually prefer to use non-qualified defined-benefit plans, which don't lead to any tax reduction compared to qualified forms and even induce some shifting of executive tax expenses to the company. The possible conclusion can be that retirement plans together with salary perform the function of risk protection for executives, promising a certain amount of money independently of any action. The main contra argument produced by Bebchuk and Jackson is the fact that companies prefer to use un-qualified pension plans only for its executives rather than for lower management and other employees. They explain these preferences by lower efficiency of non-qualified retirement plans compared to qualified plan. The authors also reject the version that executive pension plans have a function to link executive compensation to debtholders' value. According to this version there are some similarities between pension plans and debt and therefore executives have to seek for a raise of debt value thereby refusing

riskier project and behaving more conservatively. However the usual known behavior of executives doesn't conform to this hypothesis and because of that Bebchuk and Jackson are not convinced of its explanatory power. Not finding any other appropriate explanation, why companies prefer to use pension plans instead of other more effective kinds of compensation they suggested that the role of SERPs can be seen in helping to reduce executive compensation visibility.

1.3 Pay-for-Performance Sensitivity

The relationship between executive compensation and performance of the company is a very important topic in the modern financial literature. Paying a high amount of money to their executives, owners of companies are willing to know whether they have done a good investment or not. They are looking for a well functioning compensation system which can guarantee them higher returns and lower risks. The question about compensation and performance sensitivity has two important aspects: if current compensation is related to current performance and if there is any relationship between future performance and current compensation. Both aspects could present the efficiency of one or another form of compensation. From one side compensation is a reward of executives for the current performance. From the other side executive compensation is designed in the way to fulfill some tasks such as shifting of executives' attention towards a long-term perspective and binding of employees in the company.

As it was mentioned at the beginning of the paper the main role of the executive compensation according to the agency theory is to tie private gains of executives with the value of the company. It means that changes of compensation levels have to correspond with the company's performance. Jensen and Murphy (1990) trying to determine the pay-performance sensitivity¹⁶ could prove the existence of relations between cash compensation and firm performance,¹⁷ but the economical significance of these results is actually not very high. Besides cash compensation they also run regressions included stock options and inside stock ownership. The results show that the incentives provided by stock option as well as by inside stock ownership are stronger compared with incentives generated by cash compensation. This they explained by tighter linkage between both compensation and performance. Altogether the main result of their study of executive compensation from the

¹⁶ Pay-performance sensitivity – dollar change in the CEOs wealth associated with a dollar change in the wealth of shareholders (see Jensen and Murphy (1990), page 227)

¹⁷ see Jensen and Murphy (1990) for more information

period from 1974 till 1986 is that total executive compensations increase about 3,3 cent for each \$1000 changes of shareholder wealth.

Later studies provide some evidence for increasing sensitivity between executive compensation and performance of the company. This trend can be explained by increase of the weight of stock option grants in the total executive compensation: during the last decades the structure of executive compensation changed considerably – while the using of stock option grants increased the portion of base salary and annual bonus payment decreased.

Our main question however is if the level and structure of the executive compensation can have some impact on the performance of the company. Evidence for such influence is provided by Mehran (1995), who found positive relationships between firm performance and the fraction of equity based compensation as well as between firm performance and the fraction of equity held by managers analyzing 153 firms for the period 1979-1980¹⁸.

All in all even if some positive correlations between executive compensation and performance of the company have been found the pay-for-performance sensitivity is still low. The introduction of equity-based compensation increases the link between performance of executives and their benefits. However at the same time executives still receive a significant part of their compensation in the form of non-equity-based compensation (such as annual bonuses and retirement plans) which reduces this relationship. Thus this fact could explain the quite low value of pay-for performance sensitivity. At the same moment we could make the conclusion about either poor or distorted incentives provided by nowadays widely used equity-based compensation.

1.4 Last Trends in Executive Compensation

Many economists noted the extreme increase of the executive compensation during last decades¹⁹ and tried to find a suitable explanation for such phenomena. Such changes were observed not only in the financial sector but in the manufacturing one as well. That means that changes occurred independently of the field in which company performs. One explanation could be that executive compensation increased together with the companies' growth and/or improvement of its performance. However changes in size and performance could explain just 40% of the total increase during the period from 1993 till 2003 and there is a necessity to

¹⁸ Another important result of this research is that not only value but also a form of compensation provides incentives to executives to increase a company's value. For more information see Mehren, H. (1995)

¹⁹ The base salaries and bonuses of Forbes 800 CEOs increased from an average of \$700000 in 1970 to over \$2,2 Millions in 2000 (see Murphy, K. (2002))

search for another explanation.²⁰ The intense growth of executive pay concurs with the expansion of stock options. This fact allows us to suggest that these two processes are closely linked to each other and if we can understand one of them we could possibly find an explanation of the second one as well.

1.4.1 The Managerial Power Approach

So far we tried to explain structures and values of executive compensation with the help of the agency theory although it is hard to imagine that such high compensations are necessary to provide incentives for appropriate performance and that they are consistent with the approach of an optimal compensation contract. However we have mentioned a number of problems connected with each form of executive compensation. The most important problem is mistaken incentives provided by executive compensation elements. Specialists doubt also that such extremely high values of compensation are necessary to motivate executives to appropriate performance. These inconsistencies were noticed by Bebchuk, Fried and Walker (2002) and they offered an alternative explanation - managerial power approach. According to this approach executives use the possibility to influence their compensation advantageously. So the authors were persuaded that executive compensation in America is consistent with this approach and it can provide answers on the before unsolved question and puzzles related to executive compensation. For example about value of executive compensation which seems too high for public or why equity-based compensation doesn't lose its position in the executive compensation independently on all critique. They also noticed that the structure of modern executive compensation shows no resemblance to the optimal compensation contract and tried to find an acceptable explanation for these phenomena. The authors agree that their suggestion cannot completely explain the actual use of executive compensation but provides some possible additional explanations why current executive compensation differs so often from the optimal model, extreme increased value of it and distorted incentives, provided by it. According to the managerial power approach the widely used structure of executive compensation isn't connected with the needs of incentives for managers to achieve shareholders' goals. Instead of that executives have in fact an opportunity to decide themselves about design and value of their compensation using their power and influence on board of directors. As a consequence top-managers' income can increase significantly but compensation structure loses its incentive power and doesn't relate to objectives of shareholders that can lead to destruction of the company's value. The problem that executives

²⁰ for more information see Bebchuk and Grinstein (2005)

can take advantages because of their position is even more important for the shareholders because costs connected with it can even exceed the excess rent received by executives according to Bebchuk, Fried and Walker.

The authors explained that they don't reject the theory about agency problems. Quite the contrary they depart from this theory in their reasoning. For example they also see the agency problem as a reason to search for an optimal compensation plan. Thus they agree that compensation plans were introduced to minimize agency costs. With the time the structure and the value of compensation was changed with the objective to improve the situation, to intensify the incentive power and to link together the benefits of top-managers and shareholders more tightly. Because of that "the design of compensation arrangements is also partly a product of this same agency problem"²¹.

At the same moment Bebchuk, Fried and Walker don't agree with the idea that the situation around executive compensation which takes place nowadays can be evoked by the incentives problem. They argue this point of view with the fact that there are some limitations when the executive compensation program can be successful, which can be seldom achieved in real life. There are just three possible mechanisms to realize the optimal compensation plan: either the board of directors can act independently of executives and decide for the form of compensation providing "right" incentives or executives have a certain pull in the board but they by turn accept the contract that is attractive for shareholders under the influence of certain market processes or else shareholders can act against the deviation from the optimal solution. In practice however the independence in decision taking by the board of directors irrespective of all regulations and including outside directors into the compensation committee cannot be guaranteed. CEOs can contribute for the appointment of independent directors expecting to receive some loyalty in return.

Directors can decide against reduction of executive compensation also without direct influence of the management. Because from one side they just don't want to conflict with executives reducing their compensation when they perform well even if the value of it is too high showing in such way their support for pursuing of strategy, from the other side they have no incentives to do so in any case because bonuses for strict control of executive compensation are seldom while criticizing CEO's action could threaten his future in the company and their reputation on the directors' market. After all even if directors are willing to apply all efforts for increasing the shareholders' value they can face a problem with the availability and the reliability of information that is necessary for correct decision making. Because this information lies in the hand of the CEO and the board of directors has to rely on

²¹ see Bebchuk and Fried (2003), page 71

the CEO's honesty. Talking about the impact of different markets such as the managerial labor market, the product market or the market for corporate control on executives' behavior Bebchuk and his colleagues suggest that the opportunity which executives get having a certain pull in the board of directors is too attractive and possible private benefits are too high so markets aren't powerful enough to induce executives to a fair performance. Shareholders themselves also have some chances to counteract the deviation from an optimal compensation contract but until recently they rarely use their right to block or decline an unreasonable annual compensation for CEO and other executives.

Because of all adduced arguments supporters of the managerial power approach come to conclusion about the necessity of an additional explanation for significant increases in executive compensation during the last decades because current values are widely different from the optimal one suggested by optimal contract approach. As the most probable theory they see the suggestion that top-managers just extract excess value using their power and influencing the board of directors force directors to compose the executive compensation in the way that allows executives to maximize their wealth. So according to this point of view executive compensation isn't any more "a potential instrument for addressing the agency problem but also a part of the agency problem"²².

The approach is based on one of characteristic of the executives' and especially the CEO's position. We mean the amount of power they hold; however this power can vary across companies because of differences in the ownership structure as well as in the composition of the board of directors; the portion of shares owned by executives, number of inside directors, classified board all these factors can increase the power of executives in the company. The managerial power approach foresees some correlation between the value of power and the size of rents extracted by executives. So for example the higher the total number of members in the composition of board or the more outside directors were appointed with the active participation of the CEO the more powerful he is and the higher compensation he gets. So in the first case a large board complicates the coordination between its members and the monitoring of top-managers activity while outside directors can feel themselves obliged to executives for their help and because of that sympathize with them. Also there is a positive correlation between the age of outside directors as well as the number of positions within the boards served by outside directors and the executive compensation. CEO share ownership increases his power while the concentrated institutional ownership and presence of a large shareholders decrease chances of executives to exploit their power because of stronger supervision that is reflected in the lower compensation.

²² see Bebchuk and Fried (2003), page 72

However the approach doesn't state that executives can extend their authority boundlessly because sooner or later such behavior would be noticed if compensation values deviate too strongly from the optimal one. The limitations are defined by the level of outrage in the compensation structure which directors are ready to accept. Because even in case of sympathy from the side of some directors to the CEO of the company they aren't willing to risk their reputation. That is especially true for outside directors, who use their position in the compensation committee to promote themselves and to receive some new opportunities in future. Also markets play a role for executive compensation as we have mentioned earlier. So if they have no power to force executives to stay in the bounds of optimal contracts they still can restrict extraction of rents. So for example obvious outrage in the field of executive compensation can be a sign for outsiders about the weakness of corporate governance in the company and increase the opportunity of hostile takeovers; this fact can motivate executives to refrain from extra high rents in order to avoid negative consequences. These are just a couple of examples how the gross violation made by executives to raise their benefits can create some problems which leads to extra costs for shareholders, directors and actually for executives themselves too. Because of these costs executives are motivated to look for ways to make rents extraction less noticeable for other participants and thereby they may prefer to use compensation structures which give them more chances to hide their outrageous behavior.

Proof for the managerial power approach was offered by Bebchuk and his colleges Grinstein and Peyer (2010). As we already have mentioned they analyzed the opportunistic behavior of CEOs due to timing of stock options grants during the 1996 – 2005 period. They concluded that such a behavior of CEOs take place in reality. At the same moment they had a question why outside directors don't take any steps to prevent exercise of their power by CEOs. To find an answer of this question authors decided to analyze not only CEOs' stock options grants but also these one that are received by outside directors. According to results about 30% of lucky grant events (we remember that lucky events are options granted at days with the lowest stock price in a month) are due to opportunistic timing.

Another important result is the fact that opportunistically timed stock options grant for independent directors doesn't happen by accident. At first the practice to provide compensation in form of a stock option grant isn't actually widely-spread in companies with the exception of executive compensation. Because of that stock options received by directors attract attention. Even more is interesting the fact that 29% of stock options grants in the sample received by directors concur with the time of stock options grant for one or more executives. At the same moment the probability that a CEO grant event will be lucky increases if in the same day directors' stock options are granted. The coincidence of grant

events for directors and executives raise also the possibility that directors' grant events are lucky. These facts are the first sign of correlation between compensation for outside directors and for executives. At the same moment it seems that the connection between lucky grant events doesn't depend on the coincidence of them. So even if a grant event for directors doesn't concur with a CEO grant event the probability that the first one is lucky increases by 65% if the CEO lucky grant event occurs during the same or previous year. All these facts prove that the form of compensation and the opportunistic timing of directors' stock options grants are not chosen by chance. On the contrary they seem to be intentional decisions made in the company.

The source of the problem with opportunistic timing of stock options is again the agency problem and the exploitation of executives' power. So the study indicated the positive correlation between managerial power measured by CEOs' tenure and the likelihood of lucky grants for both CEOs and directors. The tenure was used as a key factor because staying longer in the same firm executives have more contacts and therefore more influence on the board of directors. The situation has been already recognized and independent directors as well as compensation committees were introduced as a form of solution. So according to results of the study the majority of independent directors in the board and the participation of blockholders reduce the probability of lucky grants. However the problem of power exploitation isn't solved completely and the managerial power stays an important variable in the analysis.

The authors could also confirm the hypothesis that directors' lucky grant events are a kind of reward for directors for acceptance and no counteraction for manipulations around the executive compensation. So for example for the chosen sample results show that in the case when a director gets lucky grants then compensation of CEO is about 11% higher then in other circumstances. At the same moment in the case when independent directors receive lucky grants the negative correlation between independence of directors and likelihood of lucky grants for CEOs disappear. These results we can use as proof for the managerial power approach. Executives use their power to take decisions about their compensation to increase it. Independent directors by turn have a function to counteract such manipulation. However in the case when their private benefit increases they act more loyal by compensation restrictions.

As it has been already mentioned the managerial power approach cannot completely explain the executive compensation policy but it can provide some possible explanations for trends which cannot be understood using the optimal contracting approach. For example even if motivation of inclusion of stock options into compensation plans is obvious and related to the problem of providing incentives for the increase of shareholders' value, the rapid increase

of stock options weight in the total compensation and the problems derived by their use are still obscure. The managerial power approach makes some attempts to improve the situation and suggests that the key to all problems can be found in the details of stock option contracts, which are by-turn designed in the way that allows executives exploit them attracting little attention.

For example we have discussed already that the majority of American public traded companies usually reject indexed or performance-conditioned vesting options and possible explanations of this fact. The authors of the managerial power approach however don't agree with the theories offered earlier. They argue that none of mentioned effects can have such negative consequences that would overcome gains which shareholders could receive from switching from usual options and they believe that in some cases indexed options can improve the situation substantially. For example one of the ideas was that such options can induce executives for excess risk-taking and they would prefer high volatile investment projects that cannot be an objective of shareholders. On the contrary Bebchuk, Fried and Walker see that such effects are actually advantageous for shareholders because risk-averse executives often reject investment opportunities with positive present value but with higher volatility and they need some extra motivation to accept them. The managerial power approach can be another alternative explanation for this problem.

While indexed stock options are attractive from the stand point of shareholders they are not interesting for executives and this for several reasons. First conventional options have a higher expected value as indexed options, which also have higher probability to be forfeited as well as performance-conditioned vesting options. These two kinds of options have two possible effects for shareholders: either saving sources for providing the same amount of incentives as before or providing stronger incentives using the same amount of money as by conventional options. Executives however are in a disadvantageous situation in both cases: either their compensation is reduced or they are pushed to set more efforts to keep the same level of compensation. There are even more reasons why executives oppose the spread of such option designs and because of that we can suppose that executives are very interested to stick to usual compensation plan and can use their power to realize them.

There are even more situations for which the managerial power approach can be a possible explanation. For example the case when the strike price of stock options is equal to current market price at the vesting day. From the shareholders' point of view such an exercise price should be rejected because at-the-money options provide minimum incentives for executives. But they are attractive for executives who are searching for methods to increase their payment with the least possible outrage. At-the-money options give executives a good

chance to extract rent without attracting attention of shareholders and outsiders while use of in-the-money might make the abuse of their authority obvious. With the help of the managerial power approach we can also explain the payments of a great amount of money received by the CEO of an acquired company in the case of acquisition and some other questions about executive compensation such as significant differences between the compensation of American CEOs and their colleagues from other countries. The dispersed ownership characteristic for the majority of U.S. companies confers executives more power than top level management in other countries and thereby American CEOs have more opportunities to extract rents that can be one of the possible explanations of substantial higher compensation values and the larger share of stock options in the total compensation.

All in all the managerial power approach can provide the additional information to the general picture of executive compensation and answer some questions unsolved by the optimal contraction approach. The evidence presents that more powerful executives have higher compensation and thereby proofs that this theory has a right to receive some attention.

The main contra argument for this version is the fact, that the boards of directors are becoming more independent from the CEO of the company, compensation committees with one or two independent outside directors instead of insiders were created and it actually must be more difficult for executives to promote their compensation on the costs of shareholders. At the same moment K. Murphy and J. Zabochnik mentioned, that the difference in the compensation between internally and externally hired managers are disappearing²³ and this tendency is inconsistent with the theory of abuse of shareholders' sources by CEOs of the company because on the other way executives hired internally must have higher compensation using their contacts and connections in the company.

Criticizing one theory, K. Murphy and J. Zabochnik introduced their own explanation. They suggested that the increase in the value of executive compensation is a logic consequence of changes which have happened on the market for managers or exactly to say the increased interest of companies to external markets for managers and new requirements which companies have for their future executive directors. Their idea is confirmed by the fact that during the same period the weight of external hires in the total number of top-managers hires significantly rose. Earlier the companies preferred to hire their executives internally, because internal employers had more information about internal processes in the company and its financial situation and it was their main advantage compared to other competitors, who couldn't have access to this information. Now most companies are more open and the long-

²³ see Murphy, K. and Zabochnik, K. (2004) for more information

year experience in the company is not always an advantage any more. Working for the same company during a long period of time and focusing on that one certain company, product or market, managers can lose some general knowledge and abilities, which are very important for governing a modern company in our days. Because of that companies are searching even for leading employees on the external market more frequently. This behavior plays a very important role for the regulation of manager's prices. However Bebchuk and Grinstein have seen two sides of changes in demand and supply on the executive market – from the one side executives have more career opportunities now and as a consequence of that companies are forced to offer higher compensation in order to attract talented executives. From the other side companies looking on the external market have also more candidates for a certain position which creates a chance for bargaining. At the same moment they suggested that not only the changes on the executive market could lead to an increase in executives' wealth, but market booms give a rise to the demand for executives and to their price.

1.4.2 Compensation of banks' top-management and financial crisis 2008-2009

During the years of world wide economic crisis (starting 2008) the discussion about continuing substantial increases of executive compensation gained a special status. Some economists see the executive compensation as one of the causes (probably indirect) of the last financial crisis. Extremely high unwarranted payments to executives whose companies presented poor performance during the years of the financial crisis gave an occasion for such thinking. Together with evidence about low pay-for-performance sensitivity and criticism of compensation paid in form of stock option grants we can mention that such ideas have appeared not without reason. Earlier in this paper we were talking already about unwanted consequences evoked by mistakes in the executive compensation. In the case of the financial crisis not only failures in the structure of executive compensation but also too high levels of it are seen as possible causes of the situation of crisis.

The executive compensation is of course not the primary reason for the financial crisis. It was rather provoked by wrong policies adopted by large American banks and false decisions made by their top-management. But the question is why well-educated and experienced personnel can make mistakes which had such destructive consequences. It is easy to imagine that they can be induced by false incentives provided by compensation systems. There is some evidence to this idea: the banks which had especially high weight of stock options in the total executive compensation showed worse performance during the year 2008

together with the increase of CEOs' payments compared with their competitors which didn't use equity incentives so intensively.

The relationship between compensation policy of banks' top-executives and the last financial crisis is indirectly confirmed by the attention paid by politicians and lawmakers to this subject. Immediately in the United States some attempts to improve the situation with executive compensation were taken to increase the transparency of it. The government worked out some new regulations which have to serve for improvement of corporate governance, because many specialists see weak corporate governance as a source of incentive problems. The most important reforms are requirements to use restricted stock in executive compensation, "say-on-pay" votes and increase of independence of the compensation committee. So for example one of the functions of restricted stock in incentive compensation is the creation of stronger linkage between long-term results and personal gains of executives while the "say-on-pay" votes have a goal to tie benefits of executives closer to shareholders' interests.

Some theories exist that try to explain how executive compensation could provoke the recent crisis situation. The most popular of them is the concentration of executives on the short-term performance instead of the long-term one and provided compensation motivates them for such a behavior. A similar problem we have discussed already talking about annual bonuses. The situation with equity-based compensation looks however differently. When executives hold shares or stock options their wealth depends on the share price which by turn depends on future perspectives of a company. It is the main argument against this popular version because CEOs of main banks own usually a large fraction of the company's stock²⁴ and thereby it would be in their interests to improve the value of the bank in long-term perspective. The situation can be changed if the executives receive still a significant portion of compensation in forms insensible to the top-managers' performance such as cash compensation or pension plans. In this case they are interested to set all their power to improve current performance; being risk-averse they can prefer to secure their cash payment instead of to work hard for promised benefits in the future. The same motivation can be expected on the inefficient market. Seeing no perspective in the future executives have incentives to improve the current performance to increase the payment at the end of the period.

However the portion of non-equity compensation declined and annual bonuses would not be able to provoke such a situation alone. Independently on contra arguments the short-

²⁴ see Fahlenbach, R. and Stulz, R.(2011) The total compensation of American banks' CEOs at the year 2006 average only the eight part of shares and options value in their portfolio; In average CEO of American banks owns about 0.4% of all outstanding shares of the bank (without taking into account the value of vested but unexercised options)

term perspective of total executives' compensation was the main topic of discussions about reasons of financial crisis of 2008-2009. Many experts see the main failure of compensations received by CEOs in their orientation for short-term results. Such kind of compensation provided false incentives and motivated executives for excessive risk-taking. Originally equity-based compensation was introduced as a reward for long-term performance. Getting stock of the company either in the form of stock options or of restricted stock, executives become shareholders of their own company. In this case they automatically have to be interested in long-term increase of company's value. In the reality a great number of executives practice to sell received shares shortly after stock options vesting. In this case equity-based compensation loses its advantage as a reward for long-term performance. Taking a decision to trade their stock executives have an incentive to raise the results of the current period with the goal to maximize their profit selling shares with maximal price. Achieving their gains high level management can even destroy the company's value.

Another prevalent version is devoted to general critique of stock options as a form of executive compensation. Main problems connected with them were mentioned in the corresponding part. However the incentive power of this kind of compensation depends on many factors such as whether vested options in the executives' portfolio are in-the-money, the number of unvested options, portion of shares in the portfolio and etc. Every change of these factors could either lead to increase of incentives for excessive risk taking or to make top-managers' behavior more conservative. All in all many specialists don't completely reject the equity-based compensation but urge to revise the design of it.

Bebchuk and Spamann (2010) have also discussed the situation with incentives for executives of some important banks during the crisis years seeing that "top executives' incentives are a key to the behavior of banks as a whole"²⁵. Because of this point of view they accentuate on the role of executive compensation regulations for the company performance talking in that certain case about financial institutions, criticize the steps undertaken by the American government to improve the situation and suggest their way to solve this problem. The authors have taken the view that executive compensation could have some impact on the current financial situation but their opinion about causes of the crisis differs from the widespread one in the financial literature. They actually agree that the main problem connected with the popular executive compensation plan is providing incentives for excessive risk-taking²⁶ by top executives. This aspect has been already discussed above but in another context. Some forms of executive compensation provide benefits for the management

²⁵ see Bebchuk, L. and Spamann, H. (2010) , page 254

²⁶ Excessive risk-taking – "taking actions that may either increase or decrease the value of the bank's asset but whose expected effect on the bank's value is negative", see Bebchuk, L. and Spamann, H. (2010), page 255

according to results after short-term periods that motivate it to set its assets for improving the value at the end of this period using all possible sources to do it even taking decisions which can lead to destruction of it in the long-term perspective. This difference between time preferences of executives and shareholders is the main incentive for executives to take an excessive risk.

However the situation with banks has some differences from other companies, first of all because of their financial policy. Banks have a practice to use deposits for loans hence banks can be seen as highly leveraged. In this case taking of excessive risk executives actually perform in the interests of shareholders (factual owners of the bank) who have the objective to increase the asset volatility. The expected value of investment projects for shareholders and executives (who are rewarded by stock options) is higher than for other stakeholders because their loss is limited by the portion of equity invested in the project while shareholders as well as stock option keeping executives can capture the whole profit in the case of an assets increase. In such situation when theoretically depositors bear the main part of risk they ought to be willing to observe the executives' performance or try to motivate them to take into account interests from other stakeholders. In the real life deposits are usually guaranteed by the government and so depositors don't pay attention to decision made inside the company by its executives. Even if depositors would have interest to monitor inside processes in the bank they wouldn't have opportunities and sources to do it because in majority of situations they are too small to be able to counteract. This situation is a perfect environment for moral hazard.

The problem can be even more aggravated in two possible situations. From one side banks are allowed to derive their capital by long-term debt which by-turn reduces the possible loss for shareholders and decreases the expected value of investment project acceptable by common shareholders. From the other side nowadays most banks are usually held by other companies. This fact allows to conclude that top-management is even more motivated for excessive risk taking because there is additional level of leverage for the bank. In the case of leverage shareholders and executives as owner of stock and stock options of the bank don't bear the whole risk the main part of which is carried by bondholders. We can see that the nature of bank itself urge executives to invest in too risky projects. This portion of risk is „approved by shareholders of bank holding company”²⁷; because exactly in this situation equity based compensation its function as connection between shareholders' objectives and personal goal of company executives performs in a perfect way. Although here we meet the already mentioned problem derived by monetary compensation received in the form stock

²⁷ see Bebchuk, L. and Spamann, H. (2010)

options – top-management might accept a value of risk higher than the reasonable value according to shareholders' point of view.

Summarizing all arguments, we can see that high leverage in the capital structure of banks combined with the effect from provided executive compensation can be one of possible explanations of a bank's policy before and during financial crisis. Fahlenbrach and Stulz (2011) received results consistent with this theory. They didn't support any of discussed versions at the beginning of their research and had a main objective just to determine whether the executive compensation received before crisis relates to banks' performance in the year 2008. According to their findings used compensation has enough incentive power to link performance of top-managers and especially CEOs and interests of shareholders. Another important result is the fact that banks where compensation was stronger linked to shareholders' interests showed poorer performance during 2008. This information allows us to conclude that it is quite possible that excessive risk was taken by CEOs pursuing shareholders' objectives. This conclusion is consistent with the version that neither distorted incentives nor the orientation for short-term perspectives induce CEOs to make decisions which could lead to such a dramatic outcome. Thus Fahlenbrach and Stulz (2011) concluded that behavior of CEOs doesn't look opportunistic and having the goal to increase shareholders' wealth, executives didn't foresee dramatic consequences that occurred after 2006. Another finding was a high value of vested unexercised stock options kept by CEOs during the financial crisis. It could be a proof that executives had no malicious intent making their decisions within the analyzed period. The argumentation is very simple. If top-managers take an effort with the objective to raise their own benefit and they made conscious decisions to accept some too risky projects foreseeing all possible negative consequences we would expect the increase of stock option exercises from one side and a higher amount of shares sold by executives within the period before crisis from another side. The evidence points however into another direction – CEOs suffered substantial losses of portfolio values during the crisis²⁸ instead of securing their private wealth.

Theoretically bondholders could improve the situation trying to monitor the decisions' making or to block the executive compensation encouraging top-management to pursue their own objectives. Bondholders however have often neither opportunities nor motivation to do so because they are indirectly protected by the governments as well – in the crisis situation governments usually provide support to the main banks in the country.

All these problems became especially visible during the financial crisis 2008-2009, which couldn't change the situation however; just the opposite happened – it worsened it. To

²⁸ see Fahlenbach, R. and Stulz, R.(2011) The average loss of CEOs made up at least \$30 million

the end of 2009 banks suffered significant losses of their value, stock price declined and leverage increased. Thereby the situation prompted shareholders for excessive risk-taking. Executives of large banks endured their own financial crisis – the major portion of held stock options was almost worthless. Talking about stock options we mentioned already that the usual practice is to issue stock options with strike price close to current stock price and because of that at the end of 2009 executives held large amount of stock options that were out-of-money²⁹. In such situations executives can derive all sources to increase the stock price and ensure their own profits while till their stock options stay out-of-money they have no risk to increase their losses. Besides excessive risk-taking top-management can decide against issuing new equity even in the case when banks are in the need of capital. The raising of additional capital improves the position of other stakeholders while with the issuing of new shares the weight and value of existing shares decrease.

So in the post crisis period, when shareholders were willing to take even more risk without respect to other stakeholders, government was looking for exits from such a situation. In case of banks governments play the role of guarantors for bank's depositors and thereby they bear the large portion of risk. During the financial crisis governments in different countries kept up their main banks providing financial resources to them with the objective to strengthen the position of banks and ensure their survival.

We have mentioned already the main steps made by governances to improve the banks situation. Bebchuk and Spamann (2010) however don't believe that new regulations are reasonable in that situation with financial institutions. Reforms are directed to eliminate the distortion between objectives of shareholders and gains of executives. The discussion above pointed out another problem – in case of banks excessive risk-taking can be in the interests of shareholders. So even if the top-management performed according to shareholders' goals they would accept too risky investment projects. So for example use of restricted stock in the compensation can shift some attention from the side of executives to long-term perspective, but the problem with excessive risk-taking appears even in the one-period example independently on its length. Introduction of "say-for-pay" votes doesn't bring any significant changes in the case of banks. Common shareholders take most of their decisions according to their objectives ignoring interests of other stakeholders. Thereby they can reject any compensation plan which provides incentives to avoid excessive risk-taking. Thus restricted stock as well as "say-on-pay" votes cannot improve the situation but on the contrary they could intensify the problem.

²⁹ Executives of Bank of America found themselves in such situation. They held stock options granted with the strike price \$42.70 and \$53.85 while the stock price in September 2009 was only \$16.60 (see Bebchuk, L. and Spamann, H. (2010) , page 271-272)

According to ideas of Bebchuk and Spamann (2009) governments all over the world have to recognize the peculiarity of the banks situation and the necessity to develop new ways to solve the problem of moral hazard. New reforms focused on the closer connection between shareholders' interests and executive compensation might have some power to improve the corporate governance system of many public traded companies but not of banks. Our discussion about executive compensation was based on the fact that all transformations of the compensation have been made during the search for a perfect way to induce executives to perform according to shareholders' objectives. In the case of banks executive compensation which meets this criterion perfectly leads to excessive risk-taking and thereby as long as the executive compensation stays equity based the discussed problem can occur. Even though governments are used to regulate and to monitor banks' business they are not used to analyze executive compensation from the side of provided incentives of excessive risk-taking for executives. On the base of such data governments would have an opportunity to block compensation plans, which motivate executive to take excessive risk. From the other side executive compensation can be transformed in such a way that executives would be urged to take interests of other stakeholders into account when making decisions. This effect could be reached if for example by determination of compensation value not only value of common shares but also one of restricted stock or bonds is taken into account.

1.5 Ways to Increase the Incentive Power of Executive Compensation

A concrete suggestion how to improve the compensation of high level executives was made by L. Bebchuk and J. Fried (2010). In his paper the economists come back to the discussion about orientation of compensation on short term results and agree that tighter connection of compensation with long-term performance of the company can increase the efficiency of provided incentives. Even when after the crisis of 2008-2009 equity-based compensation was regarded to be one of the main reasons of the financial disaster companies are not willing to reject this form of compensation totally. Equity-based compensation stays the best way to tie compensation and performance of executives together. Because of that fact the modification of executives' compensation should be derived from the transformation of equity-based compensation. Changes however should be made accurately with the attention to details. Bebchuk and Fried developed 8 main principles for tying equity compensation to long-term performance³⁰.

³⁰ see Bebchuk, L., Fried, J. (2010)

Discussing the advantages and disadvantages of stock options we have already spoken about one or another possible way to eliminate the negative effects and improve the incentives provided by them. The principles of Bebchuk and Fried generalize them. The first principle is aimed at reducing the short-term character of equity-based compensation. As we have already mentioned equity-based compensation loses its power to motivate executives for long-term increase of a company's value when stock options are vested and executives are going to sell received shares at the end of period. In this case shareholders face extra costs. From one side they are forced to provide their high level management with the new portion of equity-based compensation. From another side some costs can occur while executives make their decisions with the objective to increase the short-term performance. Because of that the first suggestion was to separate the vesting and the ability of executives to cash out their stock. According to this idea stock options as well as restricted stock should belong to executives after vesting and they could keep it even leaving the company. Executives ought to get the right to sell received stock after a certain period of time after vesting. However if there are some taxes to pay by executives at the point of vesting they ought to be able to cash out a certain number of shares necessary to cover payable taxes immediately after vesting. Such changes would reduce the number of stock options that shareholders are forced to provide in order to keep the incentive power on the same level and would move the focus of executives' activity from short-term to long-term perspective.

Some companies have practised already the separation between vesting and the ability of executives to sell stock. In these companies the ability of executives to cash out their stock is tied to their retirement date. Holding a major amount of shares during his life in the company high level management has an incentive to focus on the long-term performance of the company and costs of executive compensation decline. Such politics could unfortunately provide some false incentives as well. Collecting a large amount of stock without opportunity to unwind them thus opportunity to secure their reward executives could have an incentive to retire earlier. Additionally CEOs have private information about the company's perspective and the incentive to leave the position or the company becomes even stronger if they have a negative forecast. In this way companies could lose especially talented managers. Being successful such executives received higher reward and thus they have stronger incentives to be able finally to unwind their equity. Such a behavior can derive again extra costs for shareholders to keep a CEO in the company. Because of that the second principle suggests to avoid the binding of executives' ability to sell equity to the time point of retirement.

The alternative idea is "fixed-date" approach. According to this rule executives are able to unwind their equity in some limited portions at predefined dates. The first portion of

equity of a certain vested grant could be also sold only after some period of time, for example a couple of years. Some big companies as Procter&Gamble, GE and Exxon Mobil have already introduced such an approach in different forms. The regulation has some clear advantages compared with the “retirement” approach. Executives have no incentives to retire earlier because it would not speed up the date of unwinding. The executives’ ability to cash out their equity actually doesn’t depend on retirement at all and sometimes even leaving the company executives are required to hold their shares during some years. The “fixed-date” approach also eliminates the short-term character of equity-based compensation. Using this approach executives have no interests to focus on the short-term perspective even if taking a decision to retire. Otherwise executives are motivated to improve the performance of the company around the retirement date.

Introduction of limitations described above could already improve the position of equity-based compensation but they are not enough to avoid false incentives provided by this form of compensation. So in the case of executives being employed in the company for a long period of time we need another solution. Staying on the same position long enough executives have an opportunity to collect a huge amount of shares which they are allowed to unwind. Thus they are motivated to improve the short-term performance to sell their stock beneficially for them. Therefore the next principle suggests to regulate the portion of equity which can be unwound each year. The idea isn’t new and some companies have an experience with such a regulation. In such companies executives are usually required to hold a certain portion of equity. The portion as a rule is calculated relatively to the base salary and therefore very low or seldom on the base of total compensation. However calculated in such way they have not enough power to prevent executives against false decisions. Because of that Bebchuk and Fried advised to allow executives to sell each year just a portion (for example 10%) of the total amount of shares that executives own at the beginning of the year. In the case of retirement some simplifications of the rules are provided even though they don’t disappear completely to avoid incentives for executives for premature retirement and therefore for focusing on the short-term performance.

The modification of equity-based compensation is also aimed to remove the opportunity of executives for gaming which exists by the widespread structure of equity-based compensation. So as we know owning inside information executives could be willing to manipulate the timing of stock options grants. For example they can speed up the granting if there is information about a possible increase of stock option price within a short period of time. Companies choosing the granting at a predefined day each year instead of a floating date could eliminate this problem. At the same moment they face another one – executives are

motivated now to manipulate the stock price with the same goal as before. Holding back positive news or spreading of pessimistic information can decline the stock price and thereby increase the value of options or restricted stock grants. To prevent such a behavior companies could stop to set exercise price equal to a stock price at the day of granting and to look for another determination of the price instead of that.

A similar situation can occur after vesting. If executives are allowed to decide themselves when and what amount of shares they are going to sell they have again incentives to time sales on the base of their private information or to manipulate the stock price around the date of sale using even illegal methods. According to Bebchuk and Fried companies have an opportunity to change the situation if executives have an interest to sell their equity back. To take from executives a chance to use inside information to time exercise of stock options and incentives to manipulate the accounting data companies can choose one of the following options. The first changes have to do with the stock price. Usually the payoff of executives is a difference between strike price and current stock price. However if instead of that the payoff would be calculated on the base of average price for some period of time it complicates the manipulation. In this case executives could be paid the current stock price for the whole amount of shares they would like to sell and the sum is corrected (extra amount is paid or executives have to pay back a certain amount of money) on the base of stock price changes during the prespecified period. Another option is to force executives to sell equal portions of shares each month during a certain period. Thereby the price is newly calculated at the end of each month. Alternatively executives could be restricted in their free timing of equity's sale. So they could be required to inform shareholders in advance about their decisions or companies introduce schedules for executives and thereby determine the time of an options' sale. In the second case executives have no chance to use inside information while in the first case using the inside information to time exercise of stock option executives would punish themselves. It happens because outsiders might understand the announcement about future exercise of significant amount of stock options as a sign that a company is overvalued and the stock price declines. Accepting such limitations a company can reduce benefits of executives compared with usual practice.

All suggestions made before have the goal to tie equity-based compensation to long-term performance of the company and prevent gaming. The limitations however can stay senseless if executives have an opportunity to hedge or to diversify their risks. Being able to enter any transaction connected with hedging and diversification, executives are motivated to take decisions on the base of inside information and thereby secure their benefits. In this case equity-based compensation loses its incentive power for the increase of a company's value

and provides the same cash incentives as cash compensation. For example the CEO receives one option grant which consists of n shares with the strike price x . If the company has accepted already new restrictions and the CEO has to wait for an opportunity to sell his stock he is interested to secure his reward. One of the possible methods would be to sell short the whole amount of shares at price x and to wait till the transaction is allowed to be fulfilled. Thus the benefit of the CEO doesn't depend any more on stock price changes and there are no incentives any more to improve the company's performance. Such a situation isn't favorable from the shareholder's point of view. As we know equity-based compensation is relatively expensive for shareholders compared with other forms but they accept it willing to provide powerful incentives for executives. However all suggested restrictions would actually motivate executives even more to derive all possible methods to hedge their risks. To avoid such situations companies ought to implement extra regulations which forbid executives in certain situations to enter into any transaction for hedging or diversification which would have negative consequences for stock price and which can destroy incentives provided from shareholders to their executives.

2. Research

In the first part we have discussed the situation with the executive compensation in the U.S. We have mentioned the last trends as well as problems, mistakes and their consequences connected with this subject. But the main point is the role of executive compensation for the financial statement of any company and even for national economies. For outsiders values of bonus payments received by executive directors and announced in media look overrated and senseless. Insiders see compensation plans as an incentive program for their managers. The discussion about the right way to provide incentives and about the value of compensation continues till today. As we have discussed before the evidence as well as opinions are different about the best structure of executive compensation and its impact on a company's performance. Because of that we decided to add a new prospective to the discussion about the role of executive compensation.

One of the main questions is if the executives' compensation deserves so much attention from economists, experts and analysts. According to the agency theory the main purpose of a compensation plan is to induce management to take decisions in the interest of owners/shareholders. The high value of compensation is often explained by this fact. Therefore we could expect a positive correlation between the values of executive

compensation and a company's performance. As we know some economists have already tested this hypothesis from another point of view. Numbers of papers are devoted to the subject of pay-for performance sensitivity. The authors were motivated by the logic conclusion that compensation of executives is a reward provided for them by the company for a well done job. The efficiency of managers' performance reflects in annual results of the company. Thus we expect a higher value of annual compensation in companies that present good performance.

However the question in this paper is different even though we use the same figures for our analysis. Differently to research mentioned above we would like to find out whether executive compensation has an incentive power with which this compensation is associated. We notice that this problem isn't less important than the first one. With the help of this research we want to understand if there is any relationship between compensation and company performance. At the same point we are going to test if the value of executive compensation can motivate executives to perform more efficiently and which elements of compensation have the highest incentive potential. Another important question of our analysis is if the pay-performance sensitivity changes during the crisis period. The idea is to find out if compensation structures could counteract the negative consequences of markets' decline or on the contrary just increases firms' losses.

2.1 Data

The base for our analysis is the data about executive compensation provided by COMPUSTAT for the period from 1992 till 2009. The whole data is about American companies. It combines companies of different size and acting in different industries. The relatively long period of time could allow us to find out changes in the value and composition of executive compensation. Also we would like to test the pay-performance sensitivity during this period of time. The COMPUSTAT provided not the complete information about executives, structure and value of executive compensation but also financial data which is necessary for our analysis.

The data used by us includes information about the value of salary, bonus payment and value of equity-based compensation. However the value of options and stock granted till the year 2005 is calculated by COMPUSTAT on the base of the Black-Scholes formula. For the period after the year 2005 COMPUSTAR provides the value of stock options and restricted stock grants evaluated according to requirement of FASB Statement No. 123 introduced in the year 2004 which regulates the accounting of share-based payment for

employees. Because of differences in the presentation we have to run our analysis for two periods in the case when we want to use values of stock options and restricted stock grants. Even though we have already discussed the importance of pension plans we have to exclude them from our analysis because of missing information for a long period of time.

In the table we can see the descriptive statistic such as the average value, standard deviation, minimum and maximum values. We can see that numbers are very variable. The values of total compensation and each of its elements have a large interval to change. For example while the average value of paid bonus is about 280 thousand dollars its value can reach the level of more than 121 millions of dollar. There are some explanations for this fact. From one side the used data covers a long period of time and because of that values change. At the same moment we don't take into account differences of companies characteristics. However the value of executive compensation may vary among companies of different size or on the base of industry.

Variable	Mean	Std. Dev.	Min	Max
Executive Compensation				
Total Compensation (10 ³ \$)	2121.057	5364.083	-5172.146	655448
Salary (10 ³ \$)	361.3685	262.881	0	8319.737
Bonus (10 ³ \$)	278.0517	941.2063	-16.498	121271.3
Restricted Stock Grant (10 ³ \$) (till year 2006)	181.9455	2111.04	-4.53	650812.1
Option Granted (10 ³ \$) (till year 2006)	912.3064	4339.98	0	600347.3
Restricted Stock Grant (10 ³ \$) (since year 2006)	689.3864	1779.014	-7230.189	73496.34
Option Granted (10 ³ \$) (since year 2006)	526.9834	1434.576	-3330.972	69698.51
CEO Compensation				
Total Compensation (10 ³ \$)	4578.657	10095.02	0	655448
Salary (10 ³ \$)	647.0263	364.5265	0	8100
Bonus (10 ³ \$)	603.9244	1674.856	0	102015.2
Restricted Stock Grant (10 ³ \$) (till year 2006)	470.4837	4779.865	-4.53	650812.1
Option Granted (10 ³ \$) (till year 2006)	2179.753	8673.456	0	600347.3
Restricted Stock Grant (10 ³ \$) (since year 2006)	1566.32	3051.486	-7230.189	66780.1
Option Granted (10 ³ \$) (since year 2006)	1227.133	2488.144	-725.279	50730.09
Financial Data				
ROE, %	-.7754547	693.0998	-79060.82	57927.64
ROA, %	2.233783	55.52641	-10300	3551.351

Table 1 Descriptive Statistics

From the other side it can be a sign that the optimal structure of executive compensation hasn't been determined yet. This conclusion can be made if we look at the great difference between minimum and maximum values of total compensation and elements of it. Thus it is possible to suppose that companies provide completely different policies in the case

of executive compensation and there are no universal rules. So for example even though we know that the weight of equity-based compensation is increasing the presented figures show that for many companies bonus payment stays a significant part of compensation plans.

In the second part of the table we can find descriptive statistics describing the compensation of CEO only. It is easy to notice that CEO compensation shows the same tendencies as a compensation of executives in general. So for example values of any kind of compensation may change significantly. This fact doesn't allow to make any conclusion about preferences of companies for composition of compensation plans. However it was to expect that values in case of CEOs are significantly higher than average compensation of executives in general. So for example while the average annual reward of executives is little more than 2 million dollars, generally CEOs receive the double amount. Such differences are especially noticeable when talking about equity-based compensation. Thus we can conclude that such a form of compensation is especially popular among CEOs. It is interesting to mention that maximum value in the part of the table showing the executive compensation sometimes exceeds respective values in the second part of the table. That means that the highest values don't have to be associated with CEO compensation.

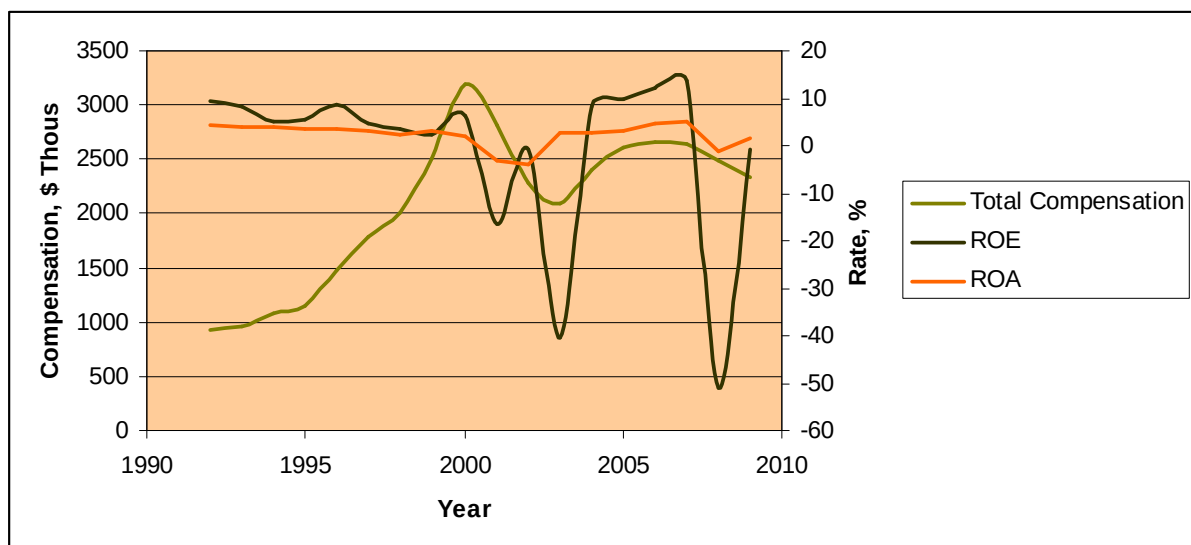


Figure 1

Figure 1 presents changes of average total executive compensation, average return on equity and return on assets. We can see that our data at least in one point differs from information provided by economists. In the previous part we discussed the last trends and told that compensation of top-managers increased rapidly during the last years. Contrary to this discussion the data for our sample shows the intensive growth only during 90s. Compensation reached its maximum value in the year 2000 and after the decline of economy in the same year the value was reduced and its minimum within the last decade was reached in the year 2003. After that point even though showing slight increases the average level of executive

compensation stayed relatively stable and we don't see any significant changes except a slight decline at the end of the period which can be explained by the beginning of the financial crisis. According to this figure there is a positive correlation between the value of executive compensation and a company's performance. Indeed we can notice that the decline of a company's performance induces decline in the value of total executive compensation in the following period except for year 2003 when we see the simultaneous decrease of both. But still executive compensation doesn't reflect the financial situation completely.

Figure 3 in appendix 1 looks similar to the first one and shows the changes of total compensation compared with the changes of performance but only concerning CEOs. Because the similarity of the two figures we don't include it in the main text. We can call both pictures almost identical. There is only one difference because of compensation levels. So we can see the same behavior of the compensation trend. At the same moment we could expect a tighter relationship between compensation of CEOs and performance of the company. As we have already mentioned above equity-based compensation is more often included in the compensation plans of CEOs as in plans for executives in general. This fact should induce a faster reaction of compensations' level on rates of return flotation.

The changes of the compensation structure for all executives as well as for CEOs in particular are presented in figure 2 and 3. The stock and option sectors describe the value of grants received by executives each year.

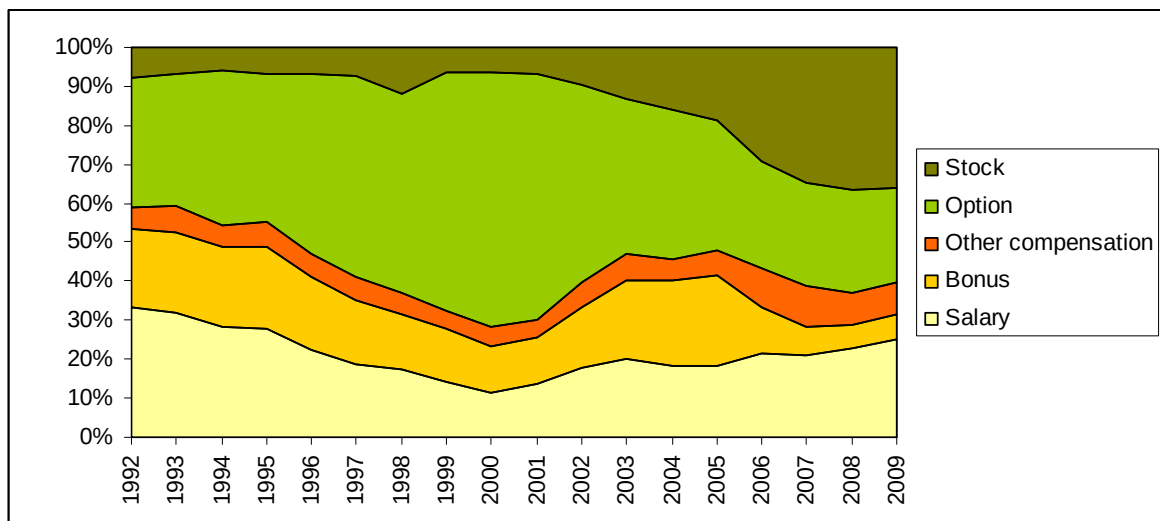


Figure 2

As we can see the structure of executive compensation changed significantly within our sample. The results correspond with the discussion in the first part of our work and the mentioned trend in the case of executive compensation became obvious with the help of this visual description. We can see that salary stays a significant part in the composition of compensation during the whole period of time. We can see that its weight declines however

during the improvement of economic situation and reaches its minimum value in the year 2000. After financial results have changed for the worse the weight of this kind of compensation increased again. Thus non-equity-based compensation became again a substantial part of executive compensation. On the base of only this data it is difficult to say what exactly could induce such an effect. From one side the decline of economy of course leads to reduction of equity-based compensation values. But from the other side this fact is also reflected in the value of total compensation. At the same moment as we know managers are usually risk-averse and may prefer to get guaranteed fixed sums even in times of economic difficulty.

Looking at the equity-based compensation we can notice that in this field there are some changes. So restricted stock grants is supplanting stock option grant. We have already discussed the increase of popularity of restricted stock. It can be connected with the even more clear problems associated with stock option practice and the advantages for companies from using of restricted stock.

If we will take a look at the same graph describing the situation with compensation of CEOs we notice the similarities between the two figures. The changes in the structure of compensation show the same trends. So for example the restricted stock grants become an even more important form of CEOs' compensation. At the same moment salary stays a significant part of it even though we know that this form of reward provides no incentives for managers. We can also see that there are some differences as well. As we would expect CEOs receive the main part of their compensation in the form of equity-based compensation.

It is interesting to see that according to figures in the case of equity-based compensation there are two completely different situations linked to decline of economy. This point is very important because as we know equity-based compensation is often called one of the sources of the financial crisis. So while at the beginning of the 21st century the decline of ROI was accompanied by a reduction of equity-based compensation weight in the total compensation of executives. At the same moment annual bonuses were more often used by companies to reward their top-managers. In the case of the last financial crisis we can mention that shortly before returns declined the weight of equity-based compensation began to increase again while the role of annual bonus was eliminated at the same time. In the years 2008 and 2009 we can't mention significant changes which could be associated with the economic situation and which we saw in the first case. However it is possible that some corrections were made later and changes took place at the period outside our sample.

2.2 Performance of the Company and the Value of Executive Compensation

The last financial crisis was accompanied by the numerous scandals mentioned in the financial literature connected with extreme amounts of annual compensation provided by companies to their top-managers. The main criticism was induced by the fact that these companies showed poor performance or even suffer significant damage. This situation provoked long discussions about executive compensation and its role. The question isn't of course new, but recently this subject received special attention not only from leading economists but also from the side of readers of weekly magazines. The masses can't explain why executives have to receive such high values of reward and ask if such practice is reasonable.

This question was asked by specialists as well and some of them paid already attention to the problem of pay-for-performance sensitivity. As we know the relationship between the value and performance of the company is very low even though changes in the structure induce the increase of it. We mean the role of equity-based compensation which secures a stronger link between compensation for managers and performance of the company that they have to improve. The weak correlation shows that executive compensation isn't just a usual form to reward a person for his work. Above we have discussed two theories which are used to understand the nature of executive compensation, its structure and value. We remember that according to the agency theory the main role of executive base compensation is to motivate managers for performance of the company. The second one – the managerial power approach – is based on the problems of control in the company. Thus it mainly deals with the phenomenon that executives used to exceed of their authority.

In this part we would like to test the first theory and to have a look if the value of executive compensation can play any role for the motivation of top-management. If the value of compensation really can change the situation and higher compensation provides more incentives than lower compensation, we can expect a positive relationship between the value of total compensation and performance of the company. The performance of the company is represented by return on equity. The choice of exactly this variable for our analysis is understandable. So as we said compensation is used by company's owners to motivate managers to follow not own but owners' objectives. The main purpose of owners, that means shareholders, is the increase of a company's value. And because of that return on equity which actually represents this value is a perfect number to test whether compensation is a suitable means to provide correct incentives.

To test this hypothesis we run a number of regressions for both situations for executives generally and for CEOs. However for our research we had to do some transformation with our data. As we can see in table 1 there are some extreme cases of returns on equity. Because of that we decided to exclude these cases from our sample to avoid their impact on results of research. Thus we limited our sample by companies whose return on equity varies between -100% and +100%. Even though we sacrifice about 3% of cases our dependent variable return on equity looks almost normally distributed (see Appendix 2) with the mean is equal 9.65 and standard deviation is equal 18.37. Now we are able to run our regression. For our research we decided for cross-section analysis with fixed-effects because of the composition of our sample. We did this because we would like to take into account the composition of our data and exactly the fact that data isn't completely independent but it consists of the information about certain companies during the period of time. The results of our regressions you can find in tables 2 and 3, where total compensation represents the impact of total compensation value on company's performance in the period t and $t-1$, "economy" – the financial situation in the United States, calculated as average rate of return for each year, and μ is dummy variable, created to represent the case of extreme values of total compensation (for further explanation see the text below).

With the help of the first regression we want to determine if there are any relationships between value of compensation and performance that a company shows in the same year.

As you can see we transformed our independent variable because of the same reason as in the case of dependent variable – there are very rare extreme cases that could have an impact on the final result. At the same moment in table 1 we can see that data reports also negative value of total compensation. However both extreme cases (negative or extremely high values) can still play an important role for our research. Exactly because of that we didn't exclude these values. Instead of that we created dummy variables that would represent both well-paid and low-paid executives. As well-paid executives we describe managers who receive more than 5 Million \$ of annual compensation. CEOs belong to the group of high-paid persons if they receive more than 20 Million \$ per year.

The results we can find in column 1 of the table.

	Executives			
	1	2	3	5
Const	8.604 (.103)	8.721 (.099)	7.965 (.173)	-4.231 (.594)
Total compensation(t)	.00068 (.00007)		.0006 (.000065)	.00073 (.000065)
Total compensation(t-1)		.00059 (.00007)	.00049 (.00006)	.00062 (.00006)
Economy				1.232 (.058)
μ (t)	1.86 (.192)		1.611 (.168)	1.752 (.166)
μ (t-1)		1.662 (.176)	1.392 (.151)	1.513 (.148)
Number of observations	185890	185890	185890	185890
R-squared within	0.0020	0.0017	0.0032	0.0295
R-squared between	0.0286	0.0261	0.0273	0.0017
R-squared overall	0.0124	0.0109	0.0165	0.0253

Table 2 Value of compensation and performance of the company
(All number are significant with $\alpha=0.05$)

	CEO			
	1	2	3	5
Const	8.393 (.167)	9.158 (.145)	7.798 (.223)	-4.231 (.594)
Total compensation(t)	.00038 (.00005)		.00044 (.00004)	.00048 (.00004)
Total compensation(t-1)		.00008* (.00004)	-.00002** (.00004)	.00005** (.00004)
Economy				1.178 (.057)
μ (t)	4.324 (.688)		4.481 (.697)	4.497 (.695)
μ (t-1)		3.812 (.325)	3.907 (.327)	3.053 (.323)
Number of observations	27838	27838	27838	27838
R-squared within	0.0052	0.0060	0.0122	0.0390
R-squared between	0.0261	0.0018	0.0087	0.0026
R-squared overall	0.0209	0.0035	0.0206	0.0347

Table 3 Value of compensation and performance of the company
(All number are significant with $\alpha=0.05$, except * - significant with $\alpha=0.1$ and ** - not significant)

As we can see from both tables coefficients are positive and significant. This is a sign that there is a positive relationship between total value of compensation and performance of the company. According to calculations every 1000\$ paid to executives increase the rate of return on 0.00068% or every 1000\$ paid for CEOs add the rate of return 0.00038%. Even though the coefficients seem to be very low they are important enough to be mentioned especially if we remember the mean value of compensation. Exactly to see the impact from \$ paid to executives generally on the performance of the company is equal to the impact of \$

paid to CEOs. Thus we can expect that companies that pay their executives better must achieve higher values. So it is obvious that not only CEO's but also other executives have to be paid better to take more action. However if we look at another variable μ , then we can find out that coefficients are high especially in the case of CEO. So we may conclude that value of compensation is at least one of the ways to motivate executives to perform better.

From the other side compensation must be chosen in such a way that provided incentives work not only on a short-term basis but can motivate managers for an effective long-term performance. Because of that we decided to run other regressions. The first one includes values of previous period compensation, while another one includes compensations from both periods. Results of both regressions can be found in columns 2 and 3 of the tables. The first finding is that the value of previous period compensation of executives has almost the same impact on the performance of current period (0.00059 for last period compensation against 0.00068 for current period compensation). The same trends we can notice in relation to high-paid executives. Because of that we are able to conclude that the effect of reward's value continue to take place during some next periods and aren't one-periodic. This fact is even more obvious when we have a look at column 2 in table 2. So if we include both compensations in our regression we receive coefficients at the same level. That means that current performance depends on the same period compensation at the same ratio as on the reward of last period. So companies ought to provide continuous compensation policy for their management to arise better results. The effect from one-time bonuses can be limited by the low compensation from last periods.

This conclusion however doesn't work in the case of CEOs. As we can see so long the compensation of previous periods doesn't exceed 5 Million \$ there is no significant impact on the performance during next periods. However highly paid CEOs seem to be closer related to the objectives of the company and perform better even during following periods. Because of this fact we have to conclude that the value of compensation plays an important role for CEOs in the case when their annual reward is high enough. However we have to mention that better performance in this case doesn't relate directly to the value of compensation. The reward of such a level doesn't necessarily have to do with the intention to link the decisions of a CEO with objectives of shareholders. Instead of that it can be used as a way to attract especially talented managers, which are able to improve the value of the company.

We run one more regression to compare the influence of compensation with the impact of financial situation. So during the financial crisis most of companies suffer losses of their value. Because of that it is interesting to know if positive effects of compensation value can be compared with the impact of the global economy on the economy of the company. For

this goal we have calculated the mean rate of return over companies for each year and included it in the next regression (see column 4). As we can see coefficients in these cases are higher than in previous regressions. It means that when we discuss the situation of a company in the context of environment executives' compensation became even more important to secure the rate of return level. It could be one of several explanations why even during the crisis companies provided extreme high annual compensation for their top-managers. A fact which was so often criticized by the public.

To summarize our results we can see that the positive relationship between value of compensation and performance of the company was found during our research. This relationship seems strong enough to be mentioned and may counteract the consequences of negative events in the economy. However we have to say that this relationship has no or very little explanation power (see R-squared). The motivation of executives to improve the value of the company seems really to increase together with their annual reward. But there must be a lot of other factors that can influence the return on equity and that impact from executive compensation is minimal.

2.3 Performance of the Company and the Composition of Executive Compensation

The next chapter of the paper is devoted to the relationship between performance of the company and elements of annual executive compensation. As we have discussed in the first part of this paper not only the level but also the composition of compensation are important features. After the interest in executive compensation had risen the structure of compensation underwent some changes. Specialists have already discussed the best structure during a long period of time. The opinion changed, for certain periods one or another form of compensation became the favorite of the majority. Each of the elements has its own advantages and disadvantages which we discussed in detail in the first part of the paper.

We briefly summarize our previous discussion. Companies look for any form of compensation which can provide incentives for executives. At the beginning together with the salary an annual bonus was used for this objective. A usual bonus is calculated as a certain percent of salary and is paid for achievement of certain goals. The main critique of this form of compensation is its linkage with accounting data. Such numbers are easy to manipulate and they don't reflect the real success of the company. This fact was a reason why the interest of companies turns in the direction of equity-based compensation. Stock option grants have to ensure a strong bond between personal benefit of executive and the value of the company. However as we know with their introduction as a part of annual executive compensation stock

option grants brought enough problems such as false incentives, undertaking of too risky projects and so on. The behavior of top-management induced by this form of compensation often had as a consequence the destruction of a company's value instead of its creation. Since these problems became clear the search for better solutions began.

Now we try to find out which of the elements of compensation really have power to motivate managers providing "right" incentives. To solve this task we did again fixed-effect analysis on the base of our data. We run regressions again for two groups: executives totally and CEOs particular. As in the previous chapter we did some limitation and exclude returns of equity that are less than -100% or more 100% to create a clear picture and avoid the impact of extreme cases on results.

The first question is whether the value of certain elements has more influence on the performance of the company. The analysis includes salary, bonus, granted stock options, granted restricted stock and other compensation forms. As we have already mentioned above the method to calculate the value of stock option grants and grants of restricted stock in reported data is different for two periods – till 2007 and since 2007. Because of this reason we can't include both figures in the same analysis and had to do calculation apart for both groups. Results are presented in table 4, where "salary" represents the impact of salary value on company's performance, "salary high" is dummy variable, which represents the impact of extremely high values of salary, "bonus" the impact of annual bonus value on company's performance, "bonus high" is dummy variable, which represents the impact of extremely high values of annual bonus on company's performance, "othcomp" the impact of other compensations value on company's performance, "options" the impact of present value of granted each year stock options on company's performance, "options high" is dummy variable, which represents the impact of extremely high values of stock option grants on company's performance, "stock" the impact of present value of granted each year restricted stock on company's performance, "stock high" is dummy variable, which represents the impact of extremely high values of restricted stock grants on company's performance, "economy" – the financial situation in the United States, calculated as average rate of return for each year.

In the case of executives we have again transformed some variables. So we included dummy variables for extreme high values (salary higher than 2 Million \$ for both cases, bonus more than 1, 5 Million \$ for executives and 2 Million \$ for CEO case, stock options grants with value higher than 5 Million \$ for all executives and 10 Million \$ for CEO, restricted stock grants and compensation paid in any other forms with value higher than 500

thousand \$ while in the CEO case for high restricted stock grants chosen grants with value higher than 2 Million \$ and Other compensation that exceed 1 Million \$).

	Executives total		CEOs	
	1992-2006		1992-2006	
	(1)	(2)	(1)	(2)
Const	9.667 (.132)	-1.774 (.727)	8.969 (.582)	-2.543 (.923)
Salary	-.006 (.0004)	-.006 (.0004)	-.004 (.001)	-.003 (.001)
Salary high	-7.694 (1.412)	-6.986 (1.327)	-7.184 (3.197)	-5.258* (3.151)
Bonus	.0101 (.0004)	.0102 (.0004)	.008 (.0004)	.007 (.0003)
Bonus high	10.541 (.578)	10.527 (.557)	11.239 (.667)	11.196 (.658)
Othcomp	-.002 (.001)	-.002 (.001)	-.002 (.001)	-.0017** (.001)
Options	-.00007** (.0001)	-.0001** (.0001)	.00005** (.00007)	.0002* (.00008)
Options high	.757 (.165)	.728 (.164)	2.602 (.517)	2.147 (.515)
Stock	.0007** (.0008)	.0002** (.0008)	-.0004** (.0004)	-.0007* (.0004)
Stock high	.710 (.293)	.686 (.299)	.506 (.479)	-.895 (.482)
Economy		1.139 (.073)		1.093 (.071)
Observations	157481	157481	22727	22727
R² with	0.0224	0.0399	0.0431	0.0606
R² betw	0.0431	0.0352	0.0604	0.0654
R² over	0.0372	0.0439	0.0624	0.0744

Table 4 Value of compensation elements and performance of the company
(All number are significant with $\alpha=0.05$, except * - significant with $\alpha=0.1$ and ** - not significant)

As we can see the results of our regressions are interesting. So some results meet our expectations while others are surprising. From one side we see the negative relationship between value of salary and the performance of company. These results aren't new. We have discussed the main problem of fixed compensation in the first part of this paper. Fixed compensation has no incentive power. As we can see, a high salary paid for executives even leads to destruction of a company's value. So if the value of salary is high enough managers have no motivation to perform according to shareholders' objectives. This fact explains the

search for any way to motivate executives for effective performance, from the shareholders' point of view. At the same moment the result can be consistent with the managerial power approach suggested by Bebchuk with his colleagues. The exceeding of authority by executives seems to be the most possible explanation of a relatively high value of fixed compensation. The final conclusion we can make later when we will analyze the weight of salary in the total compensation and its impact on the performance of the company.

The result in the case of annual bonus looks more surprising. Annual bonus was for a long period of time the main part of executive compensation. However the problems associated with this kind of compensation became obvious with the time and equity-based compensation took its role as an incentives provider. Even though the annual bonus was often criticized for low incentive power and its strong linkage on accounting data our results show that bonus is still worthy to take place in the executive compensation. As we can see there is a positive relationship between value of bonus and return on equity. The value of bonus is usually estimated as a certain percent of salary received for achievement of determined goals. Because of this fact the nature of bonus is very similar to the fixed compensation. However the impact of these two elements seems to be completely different. And even more. We can see that positive impact from high bonus can compensate the negative influence of salary.

It is difficult to say whether the results with equity-based compensation are surprising or not. From the other side we know the main argument for the inclusion of equity-based compensation in the annual reward of executives - a strong link between compensation and company's value. Thus we would expect to receive highly significant coefficients reflecting the incentive power of this kind of compensation. Our results however differ from such an ideal picture. The coefficients aren't significant in both cases of restricted stock and option grants. However the situation with equity-based compensation was in detail discussed in the first part of this paper. There we have mentioned all problems connected with this kind of compensation. The design of this element of compensation and regulations around it can lead to destruction of incentives for top-management. This fact can be a reason of our results. At the same moment even though we didn't find any significant coefficients which could proof the impact of equity-based compensation and performance of the company we can see that grants with high values have a positive impact on the return on equity.

We run the same regression with compensation of CEOs. The results are very similar as for executives in general even though they have some small differences. The tendencies are actually the same: negative relationship between salary and performance, positive impact of bonuses and insignificant results in the case of equity-based compensation. At the same moment the relationship between annual bonus and return on equity isn't as

strong in the case of CEOs as for executives in general while the dummy variables which describe high value of stock option grants are high and significant. So we can see that in the case of CEOs the most powerful incentives are provided by forms of compensation which have extremely high value.

When we included average return on equity into our regressions we received very similar results as with the regressions before. It is not surprising that the general financial situation has an influence on the financial statement of a company. The question was if compensation can provide incentives to compensate the negative impact of the environment in situations of crisis. However the outside influence is positive and the role of compensation becomes not more important when we take average return on equity into account. We tried to find the answer on our question about the role of executive compensation in crisis periods we run the same regressions for data of the period from the years 2007 till 2009. We didn't present results of this regression here but would like to point out, that we didn't receive any significant results for our data. It can mean that in the situation of world market decline annual compensation has no impact on a company's performance. It is another sign that the high value of compensation paid by companies to their executives during these years is senseless and the questions from the side of public aren't surprising. At the same moment we have to mention that our sample is small this fact could lead to distortion of results. At the same moment we have to understand the sense behind these high values which are paid without performance. Earlier we said that value of compensation is associated with better performance not only for current performance but also for following periods. It can be a reason why companies don't reduce payments to their executives even during times of crisis. To finish this discussion we would like to mention that values of each element of compensation have also not enough explanatory power for the value of return on equity.

The value of each concrete element of annual compensation doesn't really reflect the composition of it. To understand the role of each kind of compensation we did fixed-effect analysis where we included weights. Such regression has to reflect better the role of each element. Regressions were again made for cases of total executives and for CEOs only. In both cases we analyzed two periods and did it once without and once with average return on equity. Results we can find in table 5, where "salary" represents the impact of salary weight in the total compensation on company's performance, "bonus" the impact of annual bonus weight in the total compensation on company's performance, "othcomp" the impact of other compensations weight in the total compensation on company's performance, "options" the impact of weight in the total compensation of granted each year stock options on company's performance, "stock" the impact of weight in the total compensation of granted each year

restricted stock on company's performance, "economy" – the financial situation in the United States, calculated as average rate of return for each year.

	Executives				CEOs			
	1992-2006		2007-2009		1992-2006		2007-2009	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Const	19.349 (1.058)	8.289 (1.297)	10.279 (.377)	.273** (.736)	19.58 (1.227)	8.702 (1.442)	12.172 (.806)	2.686 (1.008)
Salary	-17.159 (1.178)	-16.027 (1.166)	-7.604 (.94)	-6.573 (.896)	-19.577 (1.454)	-18.431 (1.438)	-13.042 (2.209)	-11.846 (2.12)
Bonus	8.664 (1.236)	8.973 (1.219)	4.705 (1.782)	3.555 (1.723)	11.081 (1.491)	11.338 (1.464)	7.036 (3.59)	4.91** (3.437)
Othcomp	-15.623 (1.301)	-14.435 (1.288)	-5.257 (.911)	-5.205 (.900)	-19.584 (1.985)	-18.263 (1.970)	-7.393* (3.827)	-9.264 (3.606)
Options	-10.27 (1.122)	-8.75 (1.111)	.089 (.027)	.037 (.018)	-10.034 (1.304)	-8.41 (1.287)	1.341** (.944)	.841** (1.041)
Stock	-10.54 (1.245)	-10.052 (1.225)	.050** (.033)	.038** (.031)	-11.161 (1.464)	-10.569 (1.441)	-2.863 (1.139)	-2.793 (1.043)
Economy		.988 (.073)		1.296 (.091)		.988 (.073)		1.261 (.091)
Observ.	125632	125632	27566	27566	20996	20996	5095	5095
R² with	0.0493	0.0632	0.0112	0.0666	0.0725	0.0872	0.0227	0.0754
R² betw	0.1074	0.0962	0.0496	0.0045	0.0825	0.0782	0.0313	0.0139
R² over	0.0747	0.0788	0.0350	0.0337	0.0857	0.0908	0.0321	0.0438

Table 5 Weight of compensation elements and performance of the company

(All number are significant with $\alpha=0.05$, except * - significant with $\alpha=0.1$ and ** - not significant)

Now we receive a clear picture of relationship between structure of executive compensation and performance of the company. The results are quite interesting. Most of them confirm our previous conclusions. Thus the inclusion of salary into compensation leads to a destruction of company's value. The results are almost the same for both cases executives in general and CEOs. The question is why the weight of this kind of compensation is still relatively high. Talking about the value of salary and its impact on the company's performance we have suggested such results as a proof for the managerial power approach. At the same moment we don't have to forget the real role of salary in the compensation. Salary itself has no incentive power but it has a very important advantage compared to other elements of the annual compensation. It is the stability of a salary's value. Risk-averse executives can reject the payment system if it would contain too much risk for them. For the acceptance of the compensation plan and motivation for executives to stay in the company its owners have to pay them compensation. This is however costly for the shareholders because we have to take into account the destruction of a company's value mentioned above.

The single element of compensation that has incentive power according to our research is annual bonus. The more is the weight of annual bonus in the total compensation the higher the value of the company. It seems that independently on all possible manipulations incentives provided by this kind of compensation are strong enough. Unfortunately we have no access to detailed information about the estimation methods, key variables and conditions. Having such information we could find out the right way to provide incentives. In any case according to this result we could suggest how we could improve the situation around the executive compensation. Annual bonus depends on the value of salary, because it is usually calculated as a certain percent from the fixed payment. For the objective to reduce the negative influence of fixed compensation we might reduce its weight simultaneously with increase of its portion paid as an annual bonus.

Results of our analysis show again the negative impact of equity-based compensation on the performance of the company. It looks like this kind of compensation doesn't fulfill its objective as a linkage between performance and compensation. The question is why? From one side it is possible to imagine, that it is a proof for the managerial power approach. Thus executives having a power to influence decisions of the compensation committee especially about their own compensation might choose the kind of reward advantageous for them. From the other side such a compensation should be preferred by managers whose company provide a good performance and in the case when they foresee the future opportunities to improve the stock price and therefore to increase their personal benefit.

At the same moment we have to take some points into account. At first an impact from this kind of compensation may take place in later periods when received grants become exercisable. So we took only grants issued in respective year. However as we know not only issued grants are an important part of equity-based compensation but also exercisable and not exercisable grants owned by executives. To understand the real incentive power of such a reward we should analyze the combination of these three elements. We don't have to forget another important point either. Equity-based compensation also can motivate managers to take decisions opportunistically. Maybe exactly this feature leads to our results.

The situation seems however different if we have a look at results for the period between 2007 and 2009. As we know the beginning of the last financial crisis occurred exactly during this period. We would like to find out whether in case of market decline the compensation may provide incentives so strong what companies who found the optimal compensation would perform better. As we can see the impact of 1% of salary's and annual bonuses' weight declined even though trends are still the same. Equity-based compensation has in contrary a positive relationship with company's performance. The coefficients

describing the situations with stock options are however low and in the case of CEOs aren't significant. The higher the weight of restricted stock grants in the annual reward of CEOs the more it leads also to destruction of value during crisis situations.

On the base of our results we can say that the problem of the optimal structure for executive compensation seems to stay unsolved. Even though we have mentioned that independently on its negative relationship with the return on equity salary should stay a part of compensation because of the risk-aversion of managers. However how high ought to be an optimal weight of fixed-compensation is still a question. At the same moment after our calculation we can conclude that a better solution can be reducing the portion of equity-based compensation simultaneously with increasing of the bonus's weight. However such changes don't conform to the discussion in the first part of this paper. We don't have to forget that there is another important part of executive compensation that we didn't take into account because of missed data – pension plans.

Even though most of coefficients are significant the explanatory power of executive compensation structure is very low. It means that its impact on current value of the company is limited. It is even less at the time of market decline. So we can see that neither value of compensation provided by companies for their executives each year nor structure of it have real impact on a company's value. The return on equity depends on so many factors, that executives are not able or are not willing to influence it independently on the kind of compensation that they get.

Conclusion

The subject of executive compensation doesn't lose its actuality. So companies continue to spend large amounts of money to reward their executives. In this paper we have presented different points of view which explain the value of executive compensation. One of them is that executive compensation is a way to provide incentives for executive directors. Another - the fact that executive directors use their position and power to increase the value of their compensation. Not only value of compensation but also the structure of it is a subject of long discussion. We have paid attention to this problem explaining possible advantages and disadvantages of one or another kind of compensation.

However we have to understand that the problem of executive compensation is even more than it seems to be and provides extremely high costs for companies. From one side companies have to provide compensation to executives, but at the same moment they face other costs such as creation compensation committee for example. Companies are looking for the best compensation plan and therefore have to invest money for specialists who could develop the best solution for this problem. At the same moment mistakes in the development may lead to distorted incentives and become a reason for company's deficits.

Because of all these facts we asked ourselves whether executive compensation deserves such an amount of attention and whether executives perform better or worse when they receive different values or different composition of executive compensation. To answer this question we made fixed-effects analysis of relationships between companies' performance represented by return on equity and executive compensation.

According to our results values of executive compensation really have an impact on the return on equity. So companies which pay higher annual compensation to their executive directors perform better. At the same moment the compensation doesn't have to vary during periods because the influence of current compensation isn't much stronger than the impact of last period's reward. In the case of compensation structure we have found that only bonuses have a positive relationship with a company's value. If its portion is reduced for benefit of any other element a company presents worse performance during the same period. Only at the beginning of the last financial crises equity-based compensation showed better results even though some of them were not significant.

On the base of these results we could conclude that we have found proof of the fact that executive compensation has some incentive power and correctly developed compensation may motivate executives to take decisions according to shareholders' objectives. But we have to mention the fact, that explanatory power of all regressions was very low. It means that

there are too many other factors which influence the return on equity. In this case we came back to our main question if improvements in the development of optimal compensation plans make any sense, when in reality the result of provided incentives is too low. We can say that our results aren't consistent with the agency theory.

There are some possible explanations for our results. We can suggest that companies from sample used compensations which provided distorted incentives for executives and their impact on a company's value was too low while there are other figures which have a stronger relationship with the annual compensation of executive directors. At the same moment we know about problems with equity-based compensation and mistakes of regulation (for example timing of granting or exercising terms) of it used by companies. But it is possible that when correction and some improvement will be made equity-based compensation is able to fulfill tasks which were intended at the moment of its introduction. We also have to say that such results may be an argument for the managerial power approach. Using their contacts in the compensation committee and their power executives (especially CEOs) may correct values and the form of their compensation in ways advantageous for them and this fact might explain the low R-squared in our analysis.

Our results were received for these concrete sample and we did some limitations to make our calculation better observable. These limitations could lead to distortion of our results. Because of that we are not able to do general conclusions especially when they differ substantially from the usual point of view. But in any case our research contributes to the discussion about executive compensation and may look at it from the other side.

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Appendix 1

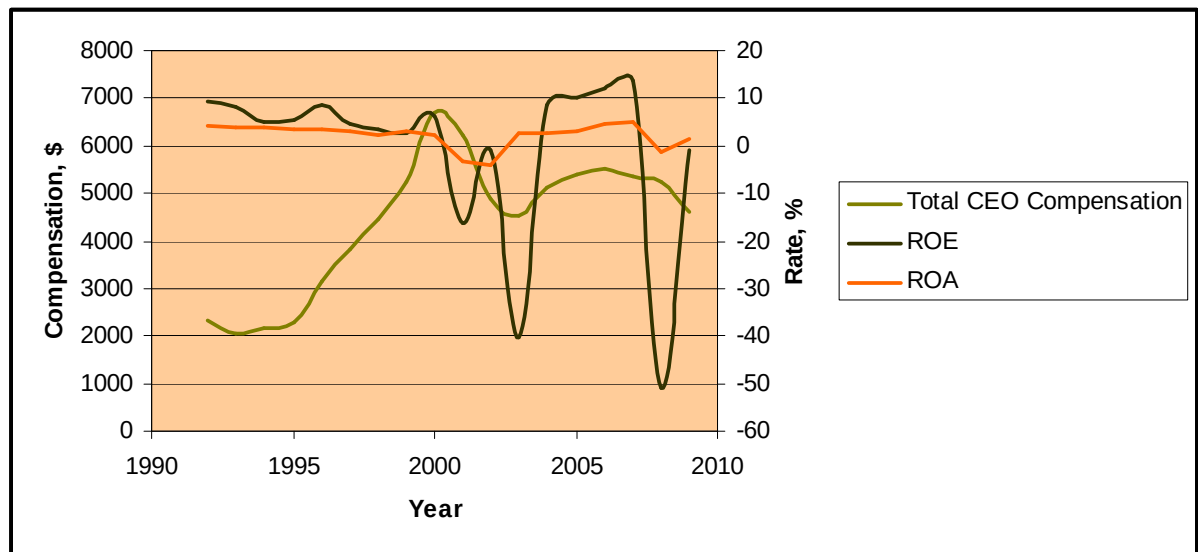


Figure 3. Changes of CEOs' Compensation, Return on Asset and Return on Equity during 1992-2007

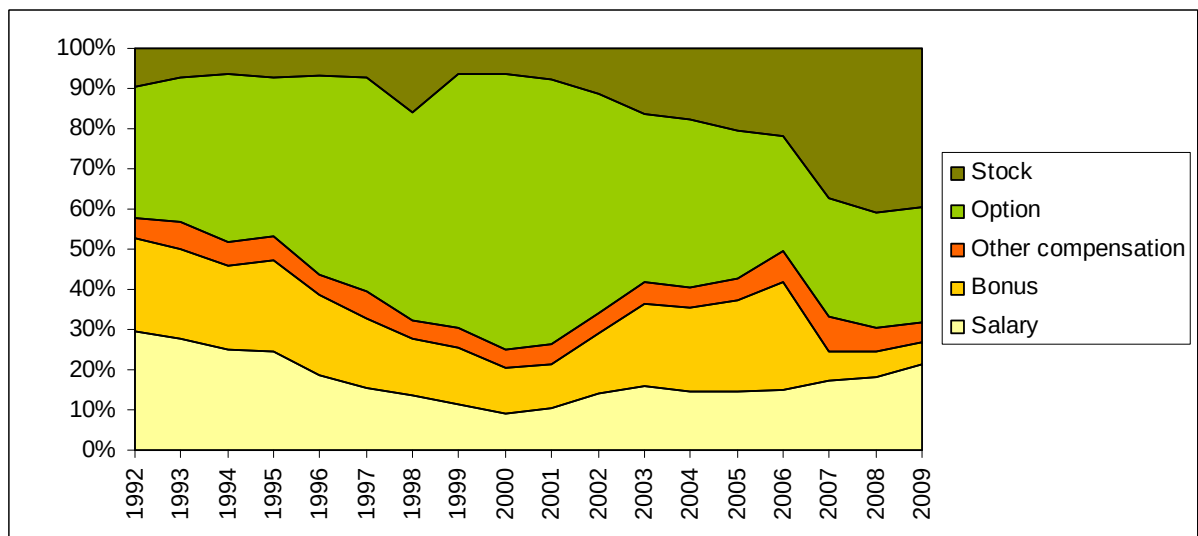


Figure 4. Structure of CEOs' Compensation and its Changes during 1992-2007

Appendix 2

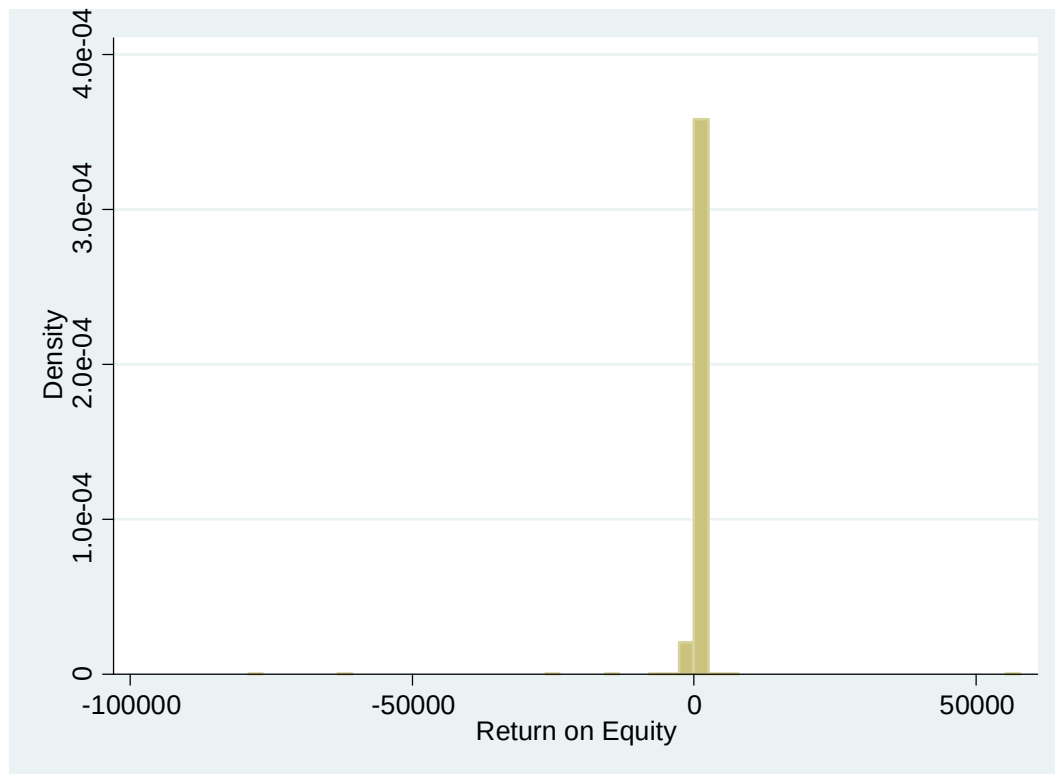


Figure 5. The Return of Equity Histogram before Limitations

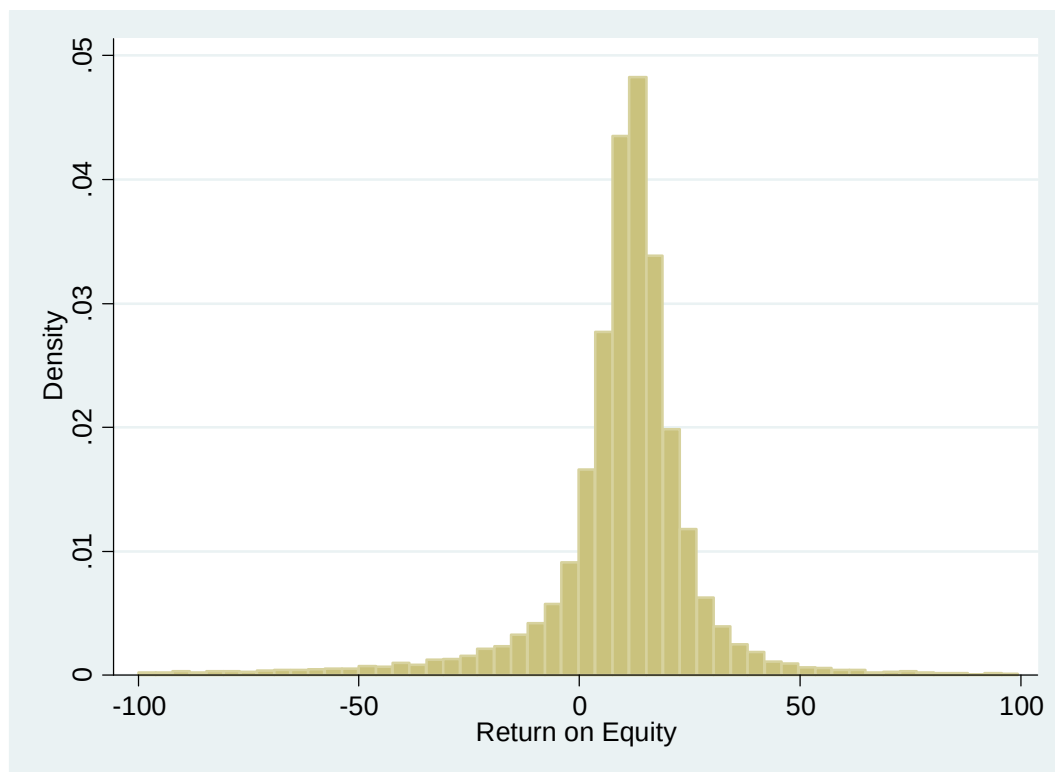


Figure 6. The Return of Equity Histogram after Limitations

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SPRACHKENNTNISSE

	LESEN	SCHREIBEN	HÖREN	SPRECHEN
RUSSISCH		Muttersprache		
DEUTSCH	Sehr gut	Gut	Gut	Gut
ENGLISCH	Gut	Gut	Mittelstufe	Mittelstufe
ARABISCH		Grundstufe		