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THE RELATIONSHIP BETWEEN THE MANAGEMENT COMPENSATION AND THE USAGE OF HEDGING INSTRUMENTS IN CROATIA*

Key words: share-based payment, management compensation, employee stock options, hedging instruments

ABSTRACT

During the accounting harmonisation process between the universal accounting standards of the International Accounting Standards Board and the American Financial Accounting Standards Board, the standardisation of the share-based payment may be pointed out as one of the successful projects. The American Financial Accounting Standards Board accepted the European proposal on the standardisation of this field regardless the discontent of the major American corporations. The novelty in the standard is the reporting requirement of the allocated employee stock option costs in the profit and loss account according to their fair value, instead of the usual reporting scheme according to their intrinsic value. The consequence of such a treatment of the employee stock options is that the reported profits have been decreased in the companies who decided to stimulate the employees and the management in this manner. The reduction in profits reported ranges between 10% and 50% of the profits reported before the introduction of the standard. Research results also indicate on a negative correlation between the level of management compensation using stock option plans and their willingness to use derivatives to hedge the company's fair value, cash-flows and translation exposures. According to the Croatian Accounting Act, it is the Company's obligation to compile the financial reports in line with the International Financial Reporting Standards adopted by the International Accounting Standards Board. In line with the above law, Croatian companies which securities are traded publicly or which have the obligation to compile consolidated financial reports, also have the duty to apply International Financial Reporting

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Standards in their full extent. This also implies they have to report in line with the IFRS 2, Share-based payment. This paper shows the effects of the application of the new accounting treatment of executive management awarding schemes, using stock option allotments, on the reported financial position and business results. Moreover, the hypothesis viability on a negative correlation between stock option compensation of the executive managers and active hedging policies will be described in this paper.

1. INTRODUCTION

The corporate financing during the last decades has been marked with the development of several different financial instruments which allow the issuer to adapt them to his individual needs and capabilities, but also to the needs of the mutual risk protection (hedging). Within the field of financial innovations, share based payment; share and/or other security valued compensations are standing out. Separate types of securities having special features are employee stock options as a form of employee incentive to increase the corporate effectiveness.

As a relatively new way to acquire future corporate benefits, a need for adequate standard valuation and accounting methods for the mentioned transactions has been noticed. The new methods should represent in the best possible way the substance of the transactions. During the last few years, the most important professional and academic circles suggested several different valuation and recognition methods of share based payment and payments on the basis of shares, considering the needs for clarity and reliability of accounting information. Recognition and valuation methods have a crucial impact on the understandability and relevance, as the basic qualitative characteristics of financial statements i.e. their measurement.

The recognition of elements in financial statements, which is specially pronounced with financial instruments, depends exclusively on the writer of financial reports. Adding to that there is a valuation problem. However, recognition methods, and especially those valuing the elements in financial statements, directly influence the stated financial position and the business result of the company.

The problem of a choice of a method for a valuation of financial instruments, and especially of employee share options, has become quite important within the process of new instrument implementation. The request for recognition of issued options at fair value cost has a significant direct impact on the reported profits. The choice and implementation of a certain financial instrument valuation method, has several implications in the share based payment accounting. Some of these are changes in the reported financial position, changes in tax liabilities, and changes in cash flows. This paper represents the effects of alternative recognition and valuation choices of employee stock options, from their non disclosure in the financial statements to their full recognition and valuation according to the fair value method. Employee stock option recognition and valuation effects on the reported financial position and business result shall also be quantified, as also the possible effects on the active protection

policy against risk of changes in assets fair value, protection of cash flows and currency risk.

2. PROCESS OF HARMONISATION OF SHARE-BASED PAYMENT ACCOUNTING

Share-based payment accounting and share-based payments have been controversial for a long time. In the process of standardisation of this area of accounting, two issues have been predominant:

1. Should the allocation costs of employee stock options be recognized in the financial reports?
2. If the answer to the first question is positive, how should these costs be allocated in terms of time?

Answers to these and possible similar questions have been drawn up over the past 30 years. More precisely, in 1972, the question of recognition of stock options issued to employees was regulated for the first time by issuing the APB 25¹ in the United States of America. American accounting authority, the FASB, has been the predominant factor of regulation of accounting monitoring of payment transactions based on financial instruments of stockholders' equity for almost 30 years. The most important, and the hardest step towards full recognition and fair evaluation of stock-based transactions was made by IASB by means of publishing the above-mentioned IFRS 2.

2.1. Development of the Share-based Payment Concept According to the FASB School

In October of 1972, the Accounting Principles Board (APB) in the United States of America issued Opinion No. 25 – «Accounting for Stock Issued to Employees». It was the first accounting standard which regulated accounting monitoring of stock-based payment transactions - exclusively transactions made with company employees. In accordance with APB 25, compensation costs were measured according to intrinsic value² of the approved stock options. According to this standard, the amount of compensation costs was determined on the measuring day. The measuring day is defined as the first day on which information on the number of authorised stock options and exercise prices for options are made public. It is usually the day of authorisation of options. However, in the moment of authorisation of employee stock options, the market price of stocks and the exercise price for options are equal, considering the fact that stock options are, as a rule, issued «at-the-money» or, possibly, «out-of-the-money». Consequently, companies did not recognize compensation costs which had resulted from issuing of stock options to employees, since these costs amount to zero when the method of intrinsic value is applied.

¹ Accounting Principles Board Opinion No. 25 – «Accounting for Stock Issued to Employees», Financial Accounting Standards Board

² Intrinsic value of an option is the difference between the price of bound assets and exercise option price.

Non-declaration of compensation costs encouraged the members of the American school to come up with new solutions in relation to transaction measuring of share-based payment. During 1995, the FASB published the new Standard No. 123, «Accounting for Stock-Based Compensation»³, which enabled, but did not demand application of the fair value method in the process of determining compensation costs. According to the fair value method, companies must measure compensation costs according to the prize value in the moment of its authorisation. The same standard granted the possibility of continuous application of APB 25, with the obligation of publishing the effects on profit and loss account and earning per share caused by alternative application of SFAS 123. Induced by accounting scandals during 2001 and 2002, many American companies decided to declare the costs of issuing stock options to employees. Thus, by the end of July 2002, only two companies among S&P 500 declared costs of stock options issued to employees, and by the end of September, their number was increased to 90 at the insistence of auditors.⁴

By means of analysis of advantages of measurement of employee stock options according to the fair value method, by the end of 2002, the FASB decided to issue a new standard, SFAS 148: «Accounting for Stock-Based Compensation – Transition and Disclosure»⁵. There were two main reasons for issuing a new standard:

1. Enabling companies easier application of the fair value method in the process of financial reporting on complete effects of issuing of the stock options to employees immediately upon transferring to the new method;
2. Enabling the users of financial reports high quality- and more frequent information on the costs of allocation of employee stock options.

The globalisation process and constant increase in number of business combinations have encouraged main global accounting schools to harmonise accounting rules. The process of standardisation of the accounting monitoring of share-based payment transactions was a kind of an efficiency test of the accounting harmonisation process on global level. Namely, in the course of 2004, the FASB decided to revise SFAS 123 and to harmonise it completely with the provisions of the proposition of new IFRS 2. The process was completed successfully, and the result is revised SFAS 123R, which explicitly and without alternative demands full application of the fair value method in the evaluation process of all stock-based payment transactions, including evaluation of employee stock options. This step can be considered as one of the more significant turning points in global accounting practice, especially in the sense of American acceptance of European solutions.

The first analyses, which were conducted upon application of the revised SFAS 123R, indicate significant decrease in the financial result of companies which settle liabilities by means of shares or derived stock-based financial instruments. Reduction in declared earnings of companies is as high as 50% of previously declared earnings.

³ SFAS 123 – «Accounting for Stock-Based Compensation»

⁴ Levinsohn, A., (2002): Stock Option Accounting as a Political Bellwether, Strategic Finance, vol. 84, No. 4

⁵ SFAS 148 - «Accounting for Stock-Based Compensation – Transition and Disclosure»

2.2. Development of Stock-Payment Concept by the IASB School

In the period following the foundation of IASC in 1973, up until 2004, there was no international accounting standard which regulated accounting of share-based payment transactions. This shortcoming in the area of international accounting standards became more noticeable, because the number of companies which applied stock-based payments was constantly increasing. Only a smaller share of transactions connected with issuing of equities to companies' pension fund was regulated by IAS 19, «Employee Benefits», which was issued in 1993. This is why the IASC opened a public debate on standardisation of share-based payment in 2000. Members of IASB advocated the application of intrinsic value method with possible declaration of effects of application of the fair value method on earning per share through notes attached to financial reports. In spite of great number of criticism to the subject of declaring the costs of issuing employee stock options by application of the fair value method through profit and loss account, the IASB published a proposition of the new IFRS 2 in November of 2002: «Share-Based Payments». The final version of the standard was accepted during February of 2004, and obligatory application was scheduled for January of 2005. The consequences of issuing the new standard were similar to those in the USA. Total profit of S&P of 500 companies was reduced by 19%⁶, and many companies significantly reduced their plans of issuing stock options to employees. The problem of significant decrease in the financial result lies in the obligation of establishing fair values of stock options issued to employees by application of evaluation assessment models which do not take into account specific features of this type of financial instruments. This especially relates to the mostly used model, the Black-Scholes model, which is preferred by IFRS 2. Advantages and disadvantages of all the used evaluation models of stock options issued to employees will be analysed in the fourth chapter of this paper.

The application effects of various methods, which were predominant in the global accounting practice in the process of measuring share-based payment transactions, are displayed in the following table.⁷

⁶ Bagacicutu, O., Mazeikaite, D., (2002): Accounting for Stock-Based Compensation Plans – Accounting and Finance Master Thesis, School of Economics and Commercial Law, Goeteborg

⁷ Share-based Payment Transaction: Are You Ready?, Price Waterhouse Coopers, Johannesburg, 6/9/2003
<url=<http://www.itweb.co.za/office/pwc/0306090748.htm>>

Table 1. Costs of employee stock options in accordance with IASB-u i FASB-u

Year	IFRS 2 SFAS 123 - I alternative		SFAS 123 - II alternative		APB 25
	Total cost	Annual cost	Total cost	Annual cost	Annual cost
1	$(80 \times 12) \times \frac{1}{3} = 320$	320	$(100 \times 12) \times \frac{1}{3} = 400$	400	0
2	$(80 \times 12) \times \frac{2}{3} = 640$	320	$(100 \times 12) \times \frac{2}{3} = 800$	400	0
3	$(50 \times 12) \times \frac{3}{3} = 600$	(40)	$(50 \times 12) \times \frac{3}{3} = 600$	(200)	0
Total		600		600	0

Source: Authors

3. TYPES OF SHARE-BASED PAYMENTS

Share-based payment or payment by means of other equities are transactions by means of which a company receives goods or services from a second party (contractors, employees etc.), and pays them by means of equities or options for their purchase. Receipt of goods or services in the payment transactions evaluated by stock value will be declared by the company upon receiving goods or services.

Considering that the issue is payment by means of equities, a corresponding amount of the increase in stock capital will be declared if the received goods and services are paid by equity shares or other equity instruments. If the obtained goods or services are paid in cash, and on basis of stock value or other financial instruments, counter-item to increase in assets or costs will be declared liabilities.

All payment transactions based on equity shares can be differentiated into one of the following categories:

1. equity-settled share-based payment transactions, in which the entity receives goods or services as consideration for equity instruments of the entity (including shares or share options);
2. cash-settled share-based payment transactions, in which the entity acquires goods or services by incurring liabilities to the supplier of those goods or services for amounts that are based on the price (or value) of the entity's shares or other equity instruments of the entity; and
3. transactions in which the entity receives or acquires goods or services and the terms of the arrangement provide either the entity or the supplier of those goods or services with a choice of whether the entity settles the transaction in cash or by issuing equity instruments.

For equity-settled share-based payment transactions, the IFRS 2 "Share-based payment" requires an entity to measure the goods or services received, and the corresponding increase in equity, directly, at the fair value of the goods or services received, unless that fair value cannot be estimated reliably. If the entity cannot

estimate reliably the fair value of the goods or services received, the entity is required to measure their value, and the corresponding increase in equity, indirectly, by reference to the fair value of the equity instruments granted. Furthermore, for transactions with employees and others providing similar services, the entity is required to measure the fair value of the equity instruments granted, because it is typically not possible to estimate reliably the fair value of employee services received. The fair value of the equity instruments granted is measured at grant date.

For cash-settled share-based payment transactions, an entity has to measure the goods or services acquired and the liability incurred at the fair value of the liability. Until the liability is settled, the entity is required to remeasure the fair value of the liability at each reporting date and at the date of settlement, with any changes in value recognised in profit or loss for the period.

For share-based payment transactions in which the terms of the arrangement provide either the entity or the supplier of goods or services with a choice of whether the entity settles the transaction in cash or by issuing equity instruments, the entity is required to account for that transaction, or the components of that transaction, as a cash-settled share-based payment transaction if, and to the extent that, the entity has incurred a liability to settle in cash (or other assets), or as an equity-settled share-based payment transaction if, and to the extent that, no such liability has been incurred.

4. SPECIAL FEATURES OF EVALUATION OF EMPLOYEES' STOCK OPTIONS

The most significant share of share-based payment transactions is related to allocation of employee stock options as a form of stimulation and reward with the purpose of increasing the business performance of the company. According to conducted research, evaluation of stock options issued to employees has the most profound effect on financial position and business performance of companies which use stock-based payment. Declared financial result of such companies can be reduced to $\frac{1}{4}$ of the previously-mentioned result, depending on the selection of the model of evaluation of options.

Evaluation of employee and executive stock options is necessary, above all, for determination of compensation costs which increase the total costs of business operations of the company. Compensation costs are a part of the costs of employees which relate to their work stimulation, all with the purpose of improvement of the financial position, business performance of the company and maximisation of owner's wealth. As mentioned in the previous chapters, stock options issued to employees differ from standard call options in many basic features. This is why there are difficulties in the process of their evaluation, since there are no developed models of option evaluations which take into consideration specific features of stock options issued to employees.

All significant global accounting boards have inclined toward the opinion of the International Accounting Standards Board (IASB) and accepted the provisions of IFRS

2 according to which a model of evaluation of stock options should include the following elements: the exercise price of the option, the current market price of the share, the term of the option, risk-free interest rate, the expected volatility of the share price, the dividends expected to be paid on the share.

The most famous models of option evaluation which contain the required elements are the Black-Scholes model and binomial models, which are based on solving differential equations. Since the mentioned models are not adjusted to evaluation of non-tradeable options and evaluation of options issued on stocks of non-listing companies, the mentioned evaluation models result in significant over-estimation of the value of stock options. The consequence of their application is a direct and significant decrease in the financial result of the companies which apply this way of stimulation of employees and which declare them in their financial reports.

In the process of evaluation of stock options issued to employees, because of their specific features in comparison with standard options, it is necessary to include a series of elements which have direct effect on their values. These are⁸: the price per share, the exercise price of the option, the time to maturity, the risk-free interest rate, the dividend yield, the expected volatility of the share price, the vesting period, the suboptimal behavior multiple, the forfeitures rates, and the blackout periods.

Upon analysis of the mentioned elements, it can be concluded that evaluation of stock options, along with satisfying all of the above-mentioned elements, is rendered possible exclusively by modelling the open graded model of evaluation, such as the customized binomial model. The use of closed models in certain cases will not be able to fully provide true and reliable information on the value of these options. The reason is very simple; the closed models are impossible to be modified in the way that all of the mentioned elements are included, which results from the effect on the value of stock options issued to employees. However, in the process of evaluation of the transactions including employees' stock options, it is necessary to estimate the significance of such transactions to elements of financial reports. If the item is not significant, i.e. if the item does not affect elements of financial reports more than 5%, it is possible, instead of the adjusted binomial model, to use the modified Black-Scholes model corrected by the most significant input of the adjusted binomial model. The reason of application of the Black-Scholes model in such specific conditions is of practical nature, because its mathematical algorithm is very simple to use and it does not demand professional knowledge of mathematics; thus, it is suitable for accounting practice. Although the adjusted graded binomial model provides more accurate results, in the context of insignificant transactions of issuing employees' stock options (<5%) in accounting terms, use of the Black-Scholes model, with certain corrections, will be a very good practical solution to the problem of establishing fair values of employees' stock options.

⁸ Mun, J., (2004): Valuing Employee Stock Options, Wiley Finance

5. EFFECTS OF THE SELECTION OF EVALUATION METHODS OF EMPLOYEES' STOCK OPTIONS ON FINANCIAL POSITION

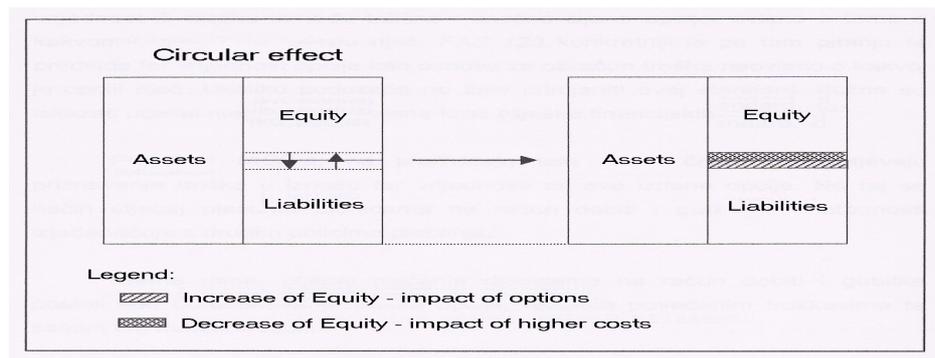
Quantification of the effects of selection of various evaluation methods of financial instruments of companies which use share payment on financial position of the company should primarily be viewed through two basic effects on the balance sheet of the company. These are:

1. The centripetal effect, i.e. increase in owners' equity through increase in assets,
2. The peripheral effect through debt swap.

The centripetal effect is included in all transactions of sale or exchange of equity instruments for certain forms of assets, as well as execution of stock options issued to employees. At the same time, the most common transaction with peripheral effect is execution of the option from convertible bonds, i.e. conversions of stock capital into equity of the company.

Except for share payment transactions, a more common way of share-based payment is issuing of options for the purchase of equities for employees. Issuing of stock options to employees as stimulation for improved work performance and calculation of the option cost in case of convertible bonds has a special, circular effect on equity. This means that it simultaneously causes increase in equity by increase in costs, which results in reduced profit, and debt swap to equity is produced only in the balance of profit tax liabilities. In the process, the balance of profit tax liabilities causes minor money reduction in the process of its settlement, which improves the financial position of the company. However, tax treatment of stock-based payment lies within the competence of national legislature; thus, the described effect becomes questionable. The effect of cost accounting of stock options allocated to employees on financial position of the company is shown in Figure 1.

Figure 1: Effect of Cost Accounting of Stock Options on Financial Position of the Company



Source: Authors

Evaluation of stock options allocated to employees and their effect on financial position of the company is reflected, as shown in Figure 1, through simultaneous

increase and reduction in owners' equity, which is caused by higher total costs because of declaration of costs of the authorisation of employee stock options.

What follows is quantification of differences obtained by means of application of the two most commonly used evaluation models of stock options issued to employees – the Black-Scholes model and the adjusted binominal model.

Section of the evaluation method of stock options issued to employees should primarily be based on option features. In other words, the difference must be drawn between the European and the American type of options. The reason why these two differ lies in the fact that European options can be evaluated precisely, in a simple way and in a very short time span, by means of basic Black-Scholes model, i.e., in case when linked shares bear dividends by the modified Black-Scholes model. The other two tested methods in this case do not provide satisfactory results in the time span which would be short enough. However, it would be wrong to assume that the binominal model and the Monte Carlo simulation will not provide accurate value of the European option. Disadvantage of these two models in this sense refers to the time needed for calculation of option value, i.e. the number of steps or simulations which are necessary to implement in order to reach the correct value obtained by the Black-Scholes model.

Evaluation of the American type of stock options issued to employees significantly differs from evaluation of the European options, if the objective is assessment of fair and correct value. The reason for significant differences and more complex methodology of evaluation lies in features of American stock options issued to employees. This primarily refers to the length of the execution of an option upon its maturity, which sets new demands and limitations in the process of establishing fair value of the option. The most important limitations, and the new inputs in the evaluation model of employees' options as well, are suboptimal execution of options and periods of blockade of execution of options because of the publication of periodical financial reports. Taking into consideration the above-mentioned new variables, it is obvious that the Black-Scholes model is not suitable for evaluation of stock options issued to employees. Its use in evaluation of the American type of stock options issued to employees will result in significant over-estimation of the option value, and this will also have a negative effect on the quality of financial reports and on declared financial position of the company.

In the sequel of the paper, the illustrative example will show and quantify the differences and effects of application of the two described evaluation models of stock options. First of all, it is necessary to point out that the Monte Carlo method of simulation is left out of the analysis, since it is applied for simulation of values of individual inputs in the adjusted binominal evaluation model.

Table 2: Features of the American Type of Stock Option Issued to Employees (Illustrative Example)

Variable	Value
Stock price	20 CU
Strike price	20 CU
Vesting time	1 month
Maturity	3 years
Risk-free rate	3,5 %
Volatility	35 %
Dividends	0 %
Suboptimal exercise behavior multiple	1.2 – 3.0
Forfeiture rate	10 %

Source: Authors

By means of computational procedure of the ESO Toolkit 1.1. computer programme, the following scenarios of the current value of stock option issued to employees were obtained and are shown in Table 3.

Table 3: Scenario-Analysis of the Value of the American Type of Stock Options (Illustrative Example)

- in CU

Suboptimal Behavior	1.2	1.4	1.6	1.8	2.0	2.2	2.6	3.0
Binomial model	2.85	3.99	4.52	4.75	4.88	4.94	5.00	5.02
Naive B/S	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59
Diference in CU	-2.74	-1.60	-1.07	-0.83	-0.71	-0.64	-0.59	- 0.57
Diference in %	-49.08	-28.57	-19.19	-14.94	-12.63	-11.52	-10.57	-10.12
Modified B/S	5.03	5.03	5.03	5.03	5.03	5.03	5.03	5.03
Diference in CU	-2.18	-1.04	-0.51	-0.28	-0.15	-0.09	-0.03	-0.01
Diference in %	-43.43	-20.64	-10.21	-5.49	-2.92	-1.69	-0.64	-0.13

Source: Authors by using ESO Toolkit 1.1 software

Upon overview of the results in Table 3 and by means of a simple analysis, it can be concluded that the Black-Scholes evaluation model of the American type of stock options over-estimates their values. The range of over-estimated values varies from 10%, up to 50% of option value compared to the results obtained by application of the binominal model. The initial “shock” is somewhat alleviated upon comparison of results obtained by application of the modified Black-Scholes model in the way that option value is reduced by the lost options rate. The obtained option values are, by lower values of suboptimal execution coefficient, still higher for 20% to 40% in comparison to values obtained by the binominal model, while, when the level of option execution is triply lower than optimal, they approximate and become insignificant. From the above-mentioned facts, it is easy to reach a conclusion concerning the magnitude and direction of the effect on financial position, especially if we take into

account the negative effect to financial result, and to owners' equity as well, or a possible, but conditional positive effect on cash flow through reduction of tax outflows.

6. THE EFFECTS OF MANAGEMENT COMPENSATION ON FIRM HEDGING

As a result of accounting and reporting problems in the 1980s and early 1990s, the FASB began to issue a number of standards on financial instruments. Until the issuance of SFAS 133, Accounting for Derivative Instruments and Hedging Activities, there was no effective accounting guidance for derivative financial instruments. SFAS 133⁹ provides a comprehensive and consistent standard for the recognition and measurement of derivatives and hedging, and requires that firms recognize all derivatives as either assets or liabilities in their statements of financial positions and measure those instruments at fair value. Before its broad implementation in 1998, there was considerable leeway in reporting derivative use, leading to substantial differences in financial statements across firms. Firms were required to report only the notional values of derivative contracts. They could choose not to report the fair value, report when only favorable, or report only particular derivative transactions.

Since managerial compensation is linked to firm performance through stock compensation packages, management may use hedging to increase both their own wealth as well as shareholders. However, derivative use (hedging) may lead to potential agency costs since management compensation also includes options payouts that are positively related to risk.

Guay¹⁰ shows that higher stock return volatility is positively related to a CEO's incentive to increase risk (measured by their option and stock compensation packages). The convex nature of options compensation and its relationship implies that options compensation can increase or decrease risky activity depending on whether the compensation is in-the-money or far outside the strike price¹¹.

In perfect markets, hedging will not affect firm value. Theories of risk management provide four motives for corporate hedging: alleviating the underinvestment problem, lowering expected costs of financial distress, reducing expected taxes, and reducing the manager's personal risk exposure, particularly when management owns stock. For the first three motives, managers hedge to maximize shareholders' wealth. The last motive implies that managers hedge to maximize their wealth.

⁹ SFAS 133, Accounting for Derivative Instruments and Hedging Activities, FASB, www.fasb.org, 2.2.2007.

¹⁰ Guay, W.R., (1999): The sensitivity of CEO wealth to equity risk: an analysis of the magnitude and determinants. *Journal of Financial Economics* 53, 43–71.

¹¹ Carpenter, J., (2000): Does options compensation increase managerial risk appetite? *Journal of Finance* 55, p. 2311–2331.

Managers with more option-like features in their compensation plan are expected to take higher risks and hedge less¹² because higher volatility can increase their options value. Whereas, managers with more wealth invested in a firm's equity have greater incentives to manage the firm's risks because they believe that it is less costly for the firm to manage the risks than for their own account. Haushalter¹³ also found that the extent of hedging is negatively related with both the number of options held per manager and the market value of insider ownership.

Janikan Supanvanij and Jack Strauss¹⁴ analyzed the motives to hedge of S&P500 firms during 1994–2000, and in particular whether SFAS 133, a regulation designed to increase transparency of derivative reporting, altered the relationship between managerial compensation and derivative use. The unique aspect of that study is the 7-year derivative data obtained directly from the financial statements and the examination of SFAS 133 on a management's hedging decision. Results demonstrate that hedging is significantly influenced by managerial compensation. The more managers receive in stock compensation, the more the firm hedges. However, increased options compensation leads to less hedging as management favors higher volatility and risk due to the convex payment of options. Thus, they found significant evidence of agency conflict since management use hedging to maximize their wealth, instead of the shareholders. They showed that SFAS 133 significantly affects agency conflict, and reinforces the negative relationship between managerial options compensation and derivative use. Management risk-taking is also determined by the extent the options compensation is in-the-money. Agency conflict is very strong when options are substantially in-the-money as management gains from increased volatility and hedge less; whereas, if the strike price increases, management tends to hedge more to avoid unpredictable interest rate and exchange rate risk to maintain the option in-the-money.

7. CASE OF CROATIA

The Croatian capital market experienced during 2006 some stellar growths, breaking records in share prices and marginal profits¹⁵. This is the result of foreign capital inflows, which was attracted besides the macroeconomic stability also by the political progress in the process of EU accession. The number of shares with treble growth overshadowed all previous periods. At the end of the year, it was rather difficult to find a stock with the price lower than at the end of 2005. Besides the record turnover at both exchanges, even a more significant indicator of domestic capital market development is the strong growth of the market capitalisation which reached 70,7% on the Zagreb Stock Exchange. The market capitalisation of stocks grew by 66,3%, and bonds by 83,1%. The major increases are credited to the developments in bonds trade. To the market growth contributed mostly the domestic and foreign investment funds and

¹² Haushalter, D., (2000): Financing policy, basis risk, and corporate hedging: evidence from oil and gas producers. *Journal of Finance* 55, 107–152.

¹³ *Ibidem*

¹⁴ Supanvanij, J., Strauss, J., (2006): The effects of management compensation on firm hedging: Does SFAS 133 matter?, *Journal of Multinational Financial Management* 16, 475–493.

¹⁵ Hrvatska agencija za nadzor financijskih usluga, www.hanfa.hr, 27.3.2007.

institutional investors. They have mostly been attracted by the last year experiences of extreme growth rates in countries which joined the EU during the last expansion phase. Croatian market undervaluation, recognition of a fundamental value of a large number of Croatian companies, as also a stable political environment, led to significant capital inflows.

Within the described highly volatile market conditions, firm hedging, and especially the hedging of the fair investment value should be significantly active. However, the market situation shows quite the opposite. The use of hedging instruments is unknown even to the largest enterprises in Croatia. There is no organised financial derivative market trading. This causes special accounting problems with their measurement. According to IAS 39 – Financial Instruments: Recognition and Measurement, a full implementation of the Fair Value Method is required during the accounting valuation of the derivatives. The main approach in determining the financial instruments fair value is its market value determined on the basis of a transaction price. Since there is no active financial derivative trading, there are also no quoted market prices. The derivative value measurements are then being based on some known mathematical models. The value of all derivatives is also based on the volatility of the underlying asset which is present in all mathematical models. The Croatian market, being characterised by high growth rates, and high stock price fluctuations, its volatility measured in standard deviations is quite high which also influences the «mathematical» value of the derivatives. The relative standard deviation expressed by the coefficient of variation spans between 40 and 130 percent¹⁶. The consequence is an overvaluation, i.e. undervaluation of the financial statements and their quality depletion.

However, the described situation in Croatia favours the managers of those enterprises that decided to compensate their management with employee share options. It is mostly the case of foreign owned enterprises wishing to hold the best domestic human capital within their ranks. Since the share prices trend in Croatia is the one going up, and the share options are generally issued «at the money», the management rewards are substantial. Under such conditions, it is not in the management's best interest to actively hedge and possibly tame the high volatility. The non existence of a financial derivative market is just a helping hand in the current development. The present situation will change only after the market price of shares starts to reflect the expected and achieved business results, reported in quality financial statements and not as an expression of share demand over supply imbalance on the capital market induced by an overflow of foreign portfolio investments. Even if regulated financial derivatives markets with quoted prices had existed, the value of the information given by the market would be only approximative, since the employee share options are subject to terms and conditions that do not apply to traded options. Although share options issued to the management influence negatively the hedging policy of the company, the macroeconomic effect remains largely neutral, since the market can hedge by portfolio diversification. The real losers remain then the individual shareholders that do not diversify their portfolios. From the macroeconomic point of view the market as a whole

¹⁶ Stankovic, S., (2006): Utjecaj vrednovanja transakcija plaćanja na bazi dionica na finansijski položaj, magistarski rad, Ekonomski fakultet Sveučilišta u Zagrebu, p. 97

could even show greater returns since less hedging means also less cost and the management that is prone to take risky investment decisions can as a reward also have higher returns. The balance of macroeconomic dynamic effects could then be positive. The tax implications of management compensation with share options are regulated by the Income tax law¹⁷ from 2004. According to the Law, the income of employees and management arising from share based payment transactions, attained by share allocation or by exercising share options on own shares, is considered capital income. According to the same law¹⁸, such an income is taxed as capital income and not as a wage, which implies another difficulty in its registration.

8. CONCLUSION

After almost four years, during which no new accounting standards were published, but during which, intensive activities in IAS harmonisation between the IASB and the American SFAS took place, the International Accounting Standards Board published in March 2004 the final text of the five new International Financial Reporting Standards. Among them was IFRS 2 – Share-based payment.

This standard regulates the financial reporting by an entity when it undertakes a share-based payment transaction. Moreover, the standard requires an entity to reflect in its profit or loss account the effects of share-based payment transactions including expenses associated with transactions in which share options are granted to employees. During the process, two issues dominated: should the compensation costs of such share based payments be recognized and reported in the financial statements? If the answer is positive, how should these costs be allocated in respect to time? The opponents of the proposal argued that the transaction is between shareholders and the employees, not the entity and the employees. Such argumentation was not accepted since it was not conceptually justifiable. Employee compensation issues are certainly corporate issues. The second argument against expense recognition was that employees do not provide services for the options. These arguments were not accepted since employee compensation is a consequence of the employee engagement as employees and form a part of their total remuneration package. Thirdly, it was argued that there is no cost to the entity, and therefore no expense should be recognised. Since the company acquired resources in exchange for equity instruments, regardless of no outflow of cash or other assets, there has been an issue of equity instruments under unfavourable conditions which is normally recognised as expense. An increase of expenses at the cost of equity is also by definition an expense.

The resulting increase in expense recognition had the consequence of expense increases of major European enterprises during 2002 by around 5 billion EUR, i.e. a reduction of profits between 10 and 50%.

¹⁷ Zakon o porezu na dohodak, NN 177/04, para 30.

¹⁸ Ibidem, para 51.

Although, there have been several disagreements regarding the recognition of expenses arising from share-based payment transactions, it has been concluded that its recognition is consistent with the definitions of an expense.

Croatian accounting practice accepted the implementation of IFRS 2 regarding accounting treatment of management compensation with share options. The regulation is implemented to the full extent only by those enterprises which are according to the Law on Accounting compelled to implement the IFRSs to the full extent (companies trading securities at the stock exchange, and financial institutions with public responsibilities like banks). Because of large stock price fluctuations on Croatian stock exchanges, the managers with additional discount rights on the purchase of stocks, do not hedge sufficiently. Undeveloped financial derivative markets are used as an excuse not to hedge.

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