Review of Economics & Finance
Submitted on 15/Apr./2012
Article ID: 1923-7529-2012-04-37-06
Meysam Doaei, Mohammad Hossein Vadiee, and Hasan Bari

The Relationship between Managers' Compensation and Market Value Added (MVA) in Iranian Listed Firms: Panel Data Technique

Meysam Doaei (Correspondence Author)
Faculty of Management and Human Resource Development, Universiti Teknologi Malaysia, Skudai, Johor Bahro, MALAYSIA,
Tel: +60-108931458 Email: dmeysam2@live.utm.my

Dr. **Mohammad Hossein Vadiee**
Faculty of Economics and Administrative Sciences, Ferdowsi University of Mashhad, Mashhad, I.R.IRAN
Tel: +98-5118813090 E-mail: mhvadeei@um.ac.ir

Hasan Bari
MA in Accounting; Member of Board of Director Iranian Accounting Association in Khorasan Razavi Province
Email: bari1200@yahoo.com

***A*bstract:** Nowadays, manager compensation is considered as one of the motivation factors in many communities. Other researchers have been done in scientific and professional associations about what variable should be the subject of compensation. Many firms and economic organizations determine the manager compensation based on profitability rates; however, it has been criticized due to formulating some failures on modification and computation of it. So, this research has intended to investigate the relationship between manager's compensation and market value added (MVA). In this paper, it is applied panel data technique for 46 listed firms in five years. Finally, it is concluded that there is a relationship between manager's compensation and market value added in Tehran Stock Exchange (TSE) and the 47% of fluctuations is explained by the defined regression model.

JEL Classifications: J3, G3, C23
Keywords: Compensation; Market value added; Panel data technique; Tehran Stock Exchange

1. Introduction

Growth and expansion of joint stock firms cause shareholders incur to hire professional managers for control the firm. Hence, managers want an appropriate salary and compensation for the efforts. Therefore, the conflict between owner and agent will appear which is called agenct theory. This theory introduced by Jensen and Meckling (1976) claims that the conflict between main shareholders and managers. Some researchers argue that managers are rewarded based on performance and if a firm has not payment system compensation, it will lose their managers (Fama and Jensen, 1983). However, owners should monitor managers' decision for ensuring the decision is decided by managers is for maximizes shareholders (Jensen and Meckling, 1976). Due to managers always do not act in the best interest of the shareholders, the shareholders must incur the monitoring cost and also some compensation due to ensure agent acts in the owner's interest. Therefore, the optimal solution is the between these two extremes lines (Copeland and Weston, 1992, Copeland, Weston, 2004, Cox, 2006, Shleifer and Vishny, 1997).

In regard to agency theory, firm is a collection of contracts (1976). One of the most significant of these contracts is the contract between main shareholders (owners) and managers. Managers pursue to get paid more and do less work while shareholders want to pay lower wages and labor demand more from their managers (Namazi, 1985). The compensation can solve this conflict; however, the main question is, in base of what, shareholders can pay compensation to managers?

Nowadays, in Iran, according to Iran business law it is common to allocate a percentage of profit as a criterion for compensation managers. However, managers can manipulate accounting profit very easily. So, this method is not reliable for paying compensation. We want to investigate is there a positive relationship between managers compensation paid and market value added (MVA)? Whether these indicators can be used as manager's compensation paid?

2. Literature Review

In an investigation Larcker (1983) concluded that there is a positive relationship between the capital and compensation scheme based on the performance and any change in managers' contracts affects on their decisions. Also, Murphy (1985) found that managers' compensation has positive relationship with their performance that is presented in firm's stock returns and sales growth. Stewart (1991) showed that in firms with positive economic value added there is a very high correlation (with 97% of coefficient determination) among economic value added, market value added, average and their changes, though in firms with negative economic value added the correlation of these two criteria is not so meaningful. Kramer and Pushner (1997) in a study found that in all items the operating profit after tax, more than economic value added explains on the deviation of the market value added. Hill and Stevens (1995) in a research in New York Stock Exchange concluded that a combination of different kinds of compensations affects the firms performance and alternative compensation scheme leads to better performance. Stern and shiely (2001) expressed in an investigation that market value added is considered as a cumulative measure of the created value by the executives from the firm's capital. They also showed that there is a positive correlation between changes in economic value added and changes in market value added.

In addition, Baek & Kim (2002) examined the association between management's compensation and EVA with some control variables such as size of firm and industry. They found a significant positive relationship between manager's compensation and EVA. Perel (2003) in a research revealed the existence of a complex interaction relation between the performance and compensation of firm's managers. He stated that good performance of managers justifies their high compensations. Engellandt et al. (2004) in a study found two points, firstly, most of the time it is flexible to evaluate the managers' individual performance and secondly, unexpected compensation is more effective. Ramana (2005) in an investigation on the Indian firms stated that there is not strong relationship showing that economic value added is a better criterion compared with market value added concerning the traditional performance criteria. Zima, Turetsky and Cochran (2005) concluded in a research that the criterion of economy level explains just 14% of variance in market value added. De Wet and Hall (2005) studied the firms in South African stock market through market value added as the representative for shareholders values. The results showed a strong relationship between market value added and cash flow of operation. There was also little correlation between market value added and profit per share and between market value added and dividends per share.

On Tehran stock exchange, Jahankhani and Zariffard (1996) expressed that the most important solution for managers to share in a firm is paying them their salaries and compensations based on the values that they create. Considering that economic value added is the base and source of values, paying based upon economic value added causes the managers to receive their payments according to their real performance. By the way, for mangers to see their long-term outcomes of their decisions, part of their compensations should be based on market value added.

Moradi (2005) showed that shareholders pay special attention to accounting criteria of asset returns in determining managers' compensations. Moreover the payments are affected according to the firm's size. Investigations in the levels of all firms show that in centralized firms, compensation amount is higher. In addition, increasing in financial risks leads to decreasing managers' compensation. Rahnamaye R. (2007) showed that there is a relationship between market value added and returns on invested capital, and the results of the study indicate that the correlation in economic value added with financial variables is higher than what is between market value added with financial variables. Vadiee and Razavirad (2008) in a survey concluded that, announcing the news of increasing the capital from cash receivables and share holders' demands affect on the increasing the market value added and any measure in increasing the capital from cash receivables and share holders' demands is effective in decreasing the market value added. And there is a meaningful relationship between the method of increasing the capital and changes in market value added.

Yahyazadehfar, Shams and Larimi (2010) examined the relationship between traditional performance appraisal criteria (return on equity, return on assets and earnings per share) and value based performance appraisal criteria (Economic Value Added) in order to appraise the performance of listed firms in Tehran Stock Exchange during the years 2000 to 2005. The results indicated ROE and EVA has a significant effect on market value added of stocks, but there is no significant relationship among ROA and EPS and MVA.

As a result, the hypothesis is developed as below:
Hypothesis 1- there is a significant relationship between MVA and manager's compensation.

3. Population and Sampling

In this study the population is all listed firms in Tehran Stock Exchange (TSE) for five years between the years 2003 and 2007. We applied the following criteria for selecting the sample among listed firms such as:

i. The firms must be listed on main market of TSE.
ii. The firm's financial year must be 19 of March (29 of Esfand which is last month of Iranian year).
iii. The firms must be accepted in the TSE before 2003.
iv. The firms must be active and their stocks should have been traded in the TSE during the time period of the study.
v. The firms should not be listed as the investment firms (because they have special financial structure and activities).
vi. The data of firms must be available during the period.

So, 46 firms were selected as the sample after considering the above criteria and their related information were gathered from the Tadbir Pardaz Software which includes all data (financial statements) for listed firms in TSE. Therefore, there are 230 firm-year observations in this study.

4. Variables and Research Methodology

There are seven variables as number of share, price of share, stockholders' equity, MVA, return, size and compensations. As discusses MVA derived from number of share, price of share and stockholders' equity. The MVA is independent variable and the managers' compensation is dependent variable. The managers' compensation was gathered from firms' financial statements. In this study once say about managers' compensation, it means the compensation which is paid to board of directors. Because firms just expose that kind of compensation.

Market value added (MVA) is the difference between market value of a firm and invested capital, also; from investor's attitude; MVA is the best measurement of manager's performance (De Wet and Hall, 2004). Hence,

MVA = Market value of firm – Invested Capital

MVA= (number of share × share price) - stockholders equity

Based on volatility of share price, it is calculated the mean of share price in the year for each firm. In addition, the researchers applied two variables as control variables based on literature. These are return of stock (Murphy, 1985) and size of firm (Baek and Kim, 2002, Moradi, 2005). The size of firm is computed as logarithm of firm's capital.

Meanwhile, based on the data set in this research has both a time series (5 years) and a cross-sectional dimension (number of firms), we used the panel data technique. A panel data set includes a time series for each cross sectional member in the data set (Asteriou and Hall, 2007). It is applied balanced panel data, because if the data of any firms is not available, the firm is removed from the sample. So, the panel regression model for hypothesis is as below:

$$\mathrm{Com}_{it} = C + \beta_1 MVA_{it} + \beta_2 Size_{it} + \beta_3 Return_{it} + \varepsilon_{it}$$

5. Findings

For analyzing the data, we applied Eviews-7 software. Table 1 represents the descriptive analysis of data for 5 years and 230 observations.

Table 1. Summary of Descriptive Analysis (230 Observations)

	COM	MVA	Size	Return
Mean	$682*10^6$	$582*10^9$	4.70	33.57
Median	$5*10^8$	$165*10^9$	4.70	13.22
Maximum	$55*10^8$	$12.4*10^{12}$	6.30	472.83
Minimum	$33*10^6$	$-462*10^6$	3.50	-72.58
Std. Dev.	$654*10^6$	$16*10^{11}$	0.50	76.94
Jarque-Bera	6655.35	12536.07	12.07	1064.44
Probability	0.00	0.00	0.00	0.00

As it can be seen, the maximum amount of compensation was 5.5B Rials[1] and the minimum was 33M Rials. So, based on the mean of compensation, it is concluded that managers' compensation were well-paid. Regarding Table 1 some firms created negative MVA, it means that the market value of firm was less than firm's equity. In addition, the maximum size of firm was 6.30, it means the capital of firm was around 1.9B Rials and 30M Rial was the least amount of capital for a firm.

As Table 2 illustrates, we estimated the regression by ordinary least square test (OLS), because it is computed the LM test. Then, we conclude that we have neither significant time nor significant cross section; so, the data is pooled data. In addition, based on P-value where it is less than five percent, it means that the coefficient is significant for MVA, return and size. Besides, the amount of Prob(F-statistic) shows that with 95% probably, the hypothesis is confirmed. Additionally, the coefficient for MVA is positive. So, there is a relationship between MVA and manager's compensation and the regression model can explain 47% of this relationship.

[1] - Rial is Iranian currency with 1 USD=10000 Rials at that time.

Table 2. The results of estimation (230 observations)

Dependent Variable: COM				
Method: Panel Least Squares				
Sample: 2003-2007				
Periods included: 5				
Cross-sections included: 46				
Variable	Coefficient	Std. Error	t-Statistic	p-value
C	$-8.35*10^8$	$4.78*10^8$	-1.745476	0.0830
MVA	0.000184	$2.59*10^5$	7.112312	0.0000
RETURN	$3.59*10^8$	$1.01*10^8$	3.534636	0.0005
SIZE	-83236163	29156513	-2.854805	0.0049
R^2	0.476053	F-statistic		45.12659
Adjusted-R^2	0.465503	Prob(F-statistic)		0.000000

6. Discussion and Conclusion

The study confirms a positive relationship between MVA and manager's compensation in Tehran Stock Exchange (TSE). Previous studies, such as Larcker (1983) states compensation changing influences on manager's performance. So, if compensation pays based on performance, firm's MVA will increase. As well, Murphy (1985) and Stern and Shiely (2001) found the positive relationship. Therefore, our result is same as previous literatures.

In TSE literature also found positive relationship between MVA and manager's compensation but the coefficient was low (Jahankhani and Zarif fard, 1996, Moradi, 2005, Vadiee and Razavirad, 2008, Yahyazadehfar, Shams, 2010).

On the other hand, the board of directors of listed firms in Iran proposes the amount of compensation to General Assembly of Shareholders. Then, the compensation approves by shareholders with some deductions. However, this is not correct way, because first of all some of shareholders do not professional in financial statement. Second, the financial statement does not show the whole result of manager's performance. Moreover, it is possible the managers manipulate the financial statements. Finally, we offer that shareholders pay manager's compensation regard to MVA and other important indicators such as EVA.

Moreover, it is recommended that every component of compensation such as salary, annual performance bonus (cash receipts or cash bonuses), fringe benefits, and stocks (stock bonus plans), stock options, stock appreciation rights, phantom share plans, and other deferred compensations should be exposed in financial statement. This information will be useful for shareholders.

References

[1] Asteriou, D. and S.G. Hall (2007), "Applied Econometrics: a modern approach using E-views and microfit", *Applied Econometrics*, Palgrave Macmillan.

[2] Baek, H. and J. Kim (2002), "Incentive-Based Compensation and Economic Value Added", *Journal of Accounting and Finance Research*, 10(1):1-10.

[3] Copeland, T. and J.F. Weston (1992), *Financial Theory and Corporate Policy*, Addison-Wesley Publishing Company.

[4] Copeland, T., J.F. Weston, and K. Shashtri (2004), *Financial Theory and Corporate Policy*, 4th-International Edition, Pearson Addison Wesley.

[5] Cox, R.A.K. (2006), "Merger and Acquisition: A Review of the Literature", *Corporate Ownership & Control*, 3(3): 55-59.
[6] De Wet, J. and J.H. Hall (2004), "The relationship between EVA, MVA and leverage", *Meditari Accountancy Research*, 12(1): 39-59.
[7] De Wet, J. and J.H. Hall (2005), "EVA versus traditional accounting measures of performance as drivers of shareholder value–A comparative analysis", *Meditari Accountancy Research*, 13(2): 1-16.
[8] Engellandt, A., R.T. Riphahn, and U.B.W. Zentrum (2004), "Incentive effects of bonus payments: evidence from an international company", *Industrial and Labour Relations Review*, 64(2): 241-257.
[9] Fama, E.F. and M.C. Jensen (1983), "Separation of ownership and control", *Journal of Law and Economics*, 26(2): 301-325.
[10]Hill, N.T. and K. Stevens (1995), "CEO Compensation and Corporate Performance", Journal of General Management, 20: 65-67.
[11]Jahankhani, A. and A. Zarif fard (1996), "Finance methods in conducting perspectives and performance of managers toward increasing stockholders wealth", *Journal of Financial Research (In Persian)*, 11 and 12 : 5-36.
[12]Jensen, M.C. and W.H. Meckling (1976), "Theory of the firm: Managerial behaviour, agency costs and ownership structure", *Journal of financial economics*, 3(4): 305-360.
[13]Kramer, J.K. and G. Pushner (1997), "An empirical analysis of economic value added as a proxy for market value added", *Financial Practice and Education*, 7(1): 41-49.
[14]Larcker, D.F. (1983), "The association between performance plan adoption and corporate capital investment", *Journal of Accounting and Economics*, 5(1): 3-30.
[15]Moradi, J. (2005), "Empirical study of effective components in determining rewards to board of managers' bonus in Tehran stock exchange", MA thesis in Accounting. Shiraz University: Shiraz, IRAN.
[16]Murphy, K.J. (1985), "Corporate performance and managerial remuneration: An empirical analysis", *Journal of Accounting and Economics*, 7(1-3): 11-42.
[17]Namazi, M. (1985), "Theoretical Development of Principal-Agent Employment Contract in Accounting: The State of the Art", *Journal of Accounting Literature*, 4: 113-163.
[18]Perel, M. (2003), "An ethical perspective on CEO compensation", *Journal of Business Ethics*, 48(4): 381-391.
[19]Rahnamaye R., F. (2007), "Study and assessment of functions in both economic value added and market value added toward assessing economic performance of corporate", *Journal of Economic Research*, 25.
[20]Ramana, D. (2005), "Market Value Added and Economic Value Added: Some Empirical Evidences", In: *8th Capital Markets Conference*, India: Indian Institute of Capital Markets Paper.
[21]Shleifer, A. and R.W. Vishny (1997), "A Survey of Corporate Governance", *The Journal of Finance*, 52(2): 737-783.
[22]Stern, J. and J. Shiely (2001), *The EVA Challenge—Implementing Value Added Change in an Organization*, John Wiley and Sons, Chichester.
[23]Stewart, G.B. (1991), "The quest for value: a guide for senior managers", Harper Business.
[24]Vadiee, M.H. and S.M. Razavirad (2008), "Capital increase effect on market value added: Evidence from Tehran Stock Exchange", *Journal of Knowledge & Development*, 15(23): 171-191.
[25]Yahyazadehfar, M., S. Shams, and S.J. Larimi (2010), "Relationship among EVA, Profitability Ratios and Market value added of listed companies in Tehran Stock Exchange", *The Iranian Accounting and Auditing Review*, 17(1): 113-128.
[26]Zaima, J.K., H.F. Turetsky, and B. Cochran (2005), "The MVA-EVA Relationship: Separation of Market Driven Versus Firm Driven Effects", *Review of Accounting and Finance*, 4(1): 32-49.