

Full Length Research Paper

Corporate governance and earnings management and the relationship between economic value added and created shareholder value

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In this study, economic value added and created shareholder value were calculated based on accounting figures and their difference was determined. Then, the reason of this difference has been analyzed using earnings management and corporate governance structure. Earnings management was calculated utilizing discretionary accrual accounting based on adjusted Jones model between 2004 and 2010; executive director ratio, non-executive director ratio, and ownership concentration in companies were examined concerning corporate governance variables. In this regard, regression statistical methods and T, F, and Pearson tests were used for assumptions examination. Selected sample was from accepted companies in Tehran stock exchange. The results showed that difference between economic value added and created shareholder value is meaningful. Examining reasons of the difference indicated that the difference has a meaningful relation with index of discretionary accrual accounting in companies. In addition, relation of executive director ratio and ownership concentration in companies with calculated difference was approved (it was positive) but relation of non-executive director ratio with the difference was not approved (it was negative). Moreover, effect of financial leverage, company size, and their type of ownership on the difference was approved.

Key words: Corporate governance, created shareholder value, earnings management, economic value added.

INTRODUCTION

Increase wealth of shareholders and other stakeholders is part of the main goals of companies. Some economic texts know wealth as welfare and believe that wealth of individuals is increased when their welfare has been improved at the end of a specific time period. One of the suitable criteria for measuring this improvement, wealth increment, and welfare is to calculate economic added value which is based on economic factors. These factors are not based on incomplete calculations of historical accounting since accounting profit criterion has loosed its positions as standard measure of wealth improvement

due to deficiencies and problems of historical accounting system. Thus, assuming increment of shareholders wealth relying on the figures contained in the annual financial statements is not correct. Many researches in different countries has shown that accounting figures continually experience actual and artificial manipulating and it is expected that managers attempt to call upon smoothing of accrual accounting in order to mislead capital market and stakeholders. Moreover, changes in shareholder wealth may be caused by controlling system of companies and also it must be noted that management method and composition of corporate ownership have impacts on their fiscal policies and financial/operational supplies. Combination of companies' board as the highest decision-making body and composition of companies' shareholders are of the system and can

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companies' shareholders are of the system and can influence on level of shareholder wealth.

PRIOR RESEARCH AND EXTRACTING HYPOTHESIS

Vakilian et al. (2010) examined relation of economic value added and residual income in predicting earnings per share for next year and they found that there is no significant relation between economic value added and earnings per share, it has not ability to predict, and residual income as representative of economic model for performance measurement influences investor decisions. Noravesh et al. (2004) examined relation of cash flow of operation and economic value added with created shareholder value. The results of this study represent that economic value added is a better index to predict created shareholder value and it can present the management ability to add company value (shareholders wealth). Hijazi and Hosseini (2010) compared market value added and economic value added using accounting criteria in Tehran stock exchange. They found that it is better to use economic value added as internal/external evaluation index because of its strong relation with market value added. West and Worthington (2004) compared information content of economic value added within formation content of residual income, cash flow of operation, and income before extraordinary items in 110 Australian companies. The results showed that income before extraordinary items acts better than other criteria to explain stock return changes. Analysis exhibited that economic value added has more incremental information content compared to residual income and cash flow of operation. Stern (1993) compared general criteria of accounting with economic value added. He believes that economic value added has more generality than other criteria such as income, dividend income, return on stockholders' equity, and cash flow. He certainly states that economic value added is a strong and efficient criterion to describe performance of companies. This criterion has more ability to describe companies' stock market value than general and traditional criteria.

Levata and Koucheran (2002) tried to compare two types of companies: 1) those use economic value added as a criterion to evaluate performance, and 2) those do not use this criterion. The results show that companies with low ownership percentage and more investment from corporate investor try to use economic value added criterion.

Hess et al. (2009) examined some evaluation methods (discounted cash flow and residual income) to determine deviance between above methods and payment value. Experimental results of above research state the fact that in most of examined companies during 1988 to 1998, residual income method has less deviance than other evaluation methods. Shourvarzi and Sad-Aldin (2011) studied possibility to predict operating income using

economic value added of accepted companies in Tehran Stock Exchange (2005 to 2010 time period). They found that operating income after tax, capital fund, and return on assets have ability to predict operating income of next periods and also have meaningful relation together. Considering results of mentioned researches, first hypothesis of this research will be as follows:

H₁: There is a meaningful difference between economic value added and created shareholder value.

Al-Mir and Sabouei (2008) calculated difference of economic value added and created shareholder value; and then they examined effects of corporate governance and earnings management as explaining factors for this difference. Their statistical universe was made up of 357 companies in a 7-year period. The result of their research approved that income discretionary accrual figures (earnings management) affect this difference. Joong et al. (2011) have researched about relation of board of directors and audit committee with earnings management. They finally confirmed that there is a positive relation between size/number of companies' board of directors and earnings management. They observed no obvious relation between other factors of corporate governance (such as independence of audit committee and board of directors' independence) and earnings management. Beatriz et al. (2007) examined relation of corporate governance and long-term return acquisition as well as corporate value and their accounting criteria to evaluate performance. Their study showed that there is a strong relation between better corporate governance in companies and acquisition of more return by them. Teresa et al. (2009) found that companies with better corporate governance system relatively have more profitability and they pay profits to their shareholder sooner. Drobotz (2004) found positive evidence about strong relation of corporate governance with company value in German companies. Chen et al. (2010) found in their researches that there is a positive relation between Q Tobin index and corporate governance in Korean companies. In his researches, Lara and Osma (2009) deduced that corporate governance is more important than traditional criteria (for example, company potential growths and performance-related profit) in stakeholders view. Derek and Zhein (2011) studied about relation of corporate governance and earnings management in Taiwan hospitals. Their study showed that there is a negative relation between duality of CEO and earnings management. Furthermore, existence of transparency and disclosing corporate social responsibilities has no meaningful relation with earnings management. Considering the aforementioned researches, the second hypothesis will be as follows:

H₂: The difference between economic value added and created shareholder value may be result from

discretionary accrual accounting.

Alabbas (2009) examined relation of corporate governance and earnings management in Saudi Arabia capital market. He chose the 2005 to 2007 time period. He observed no meaningful relation between components of corporate governance and earnings management but he found that auditor size has negative relation with corporate discretionary accrual accounting. Srijar and Otama (2008) during a research in Indonesia found that family firm structure has a significant relation with corporate earnings management method. They also observed no relation between corporate size and holding companies/organizational investor and likewise between corporate governance and earnings management. Royaiee and Abdoli (2010) studied Jones models of Iranian companies during their research to evaluate effect of discretionary accrual accounting and culture. Finally, they found earnings management behavior in all of the companies. Ghirmai (2011) examined effect of proper corporate governance on efficiency and effectiveness of active organizations in public sector among countries located in the south of African Sahara. He has researched about processes accomplishment issues, role of public organizations, and rules. Accountability has also been emphasized by him. In his standpoint, public organizations have more active role in accountability and legality than in comparison with government and state organizations. Render et al. (2010) studied about relation of corporate governance and corporate performance. They found that corporate executive director ratio has a meaningful positive relation with improvement of assets turnover and decrement of corporate operational risk. Hessiang et al. (2010) studied about effect of monitoring board on increasing corporate transparency. They discovered that compensation to independent managers improves corporate performance and it also appeared that training has an effective role in improving transparency in reporting. Taking the aforementioned researched into account, the third hypothesis will be as follows:

H₃: The difference between economic value added and created shareholder value may be result from corporate governance system.

METHODOLOGY

Here, each variable of the research and their measurement method is explained.

Economic value added

It is one of the criteria to evaluate performance and created value in business firms. It is a more appropriate criterion to evaluate corporate performance because of relation with created changes in shareholder wealth and low possibility to be manipulated. Based upon this criterion, corporate value depends on two factors: amount of return on investment and incurred cost of investment. Therefore,

this criterion in spite of prevalent criteria including profit, cash, and earnings per share tries to consider cost of all financial resources and also despite of accounting profit which may be manipulated through discretionary accrual accounting the economic value added has not such smoothing. Hence, there is improvement of economic value added results in creation of shareholder value (Panahian, 2009; Chen and Dodd, 2008; Kim, 2005). This concept is based on social responsibility theory of accounting. This variable is calculated using the following formula:

$$EVA_t = Capital_{t-1} \times (ROA_t - WACC_t) \quad (1)$$

Where EVA_t is economic value added, $Capital_{t-1}$ is capital of beginning period, ROA_t is return on assets, and $WACC_t$ is weighted average for cost of capital.

Created shareholder value

Created value for shareholder is one of the evaluation methods to determine corporate value which is introduced by Fernandez (2001). Its calculation formula is as follows:

$$CSV = \text{Shareholder value added} - (\text{Equity market value} \times K_e)$$

Shareholder value added

$$= \text{Increase in equity market value} - \text{payments from shareholders} + \text{dividends} \\ + \text{repurchases} - \text{conversions}$$

$$\text{Increase in equity market value} = \text{Equity market value}_t - \text{Equity market value}_{t-1}$$

$$K_e = \text{return of treasury bonds} + \text{required return to equity} \\ (= \text{net earnings} / \text{shareholder equity}) \quad (2)$$

As presented in the variables calculation in Equation 2, economic value added is a criterion to evaluate individual welfare and wealth. Established upon Fernandez model, this wealth increment is calculated based on changes in market price of stock, paid profit to shareholders, and received funds from them. Theoretically, it is expected that difference of calculated welfare and wealth tends to a minimum value but it can be said that possible differences have origin in manipulation of profit figures and corporate governance system. The difference has been assumed as a dependent variable in this research and effect of independent variables such as earnings management and corporate governance has been analyzed.

Corporate governance system

Corporate governance system is considered as a monitoring mechanism to control managerial and financial behaviors. This coordination system is arranged regarding cultural and legal system and its mechanism is formed considering this conditions. In other words, corporate governance consists of laws, rules, structures, processes, cultures and systems to achieve objectives such as accountability, transparency, justice, and regarding rights of beneficiaries. Three components of the system have been examined which are stated thus.

Executive directors

On the bases of Iran business law, business companies are

administered by board of directors based on rules of statute. Some members of this board may work at company in a fulltime manner and act as (fulltime) executive manager. These managers have more information about occurred events in the company and have more opportunity to benefit. Therefore, there may be a kind of conflict of interest between them and other shareholders. Percent of executive director members for each company is calculated through dividing executive members by all members of director board. These data have been extracted from annual corporate reports to Iran exchange organization.

Non executive directors

Based on business laws of Iran, Iranian companies can choose some members of their board of directors outside the company. It is even possible to choose these people from other companies' board of directors but under laws and regulations of state organizations, they cannot from state organizations. These individuals have more independence because of their fulltime activity in the company but in some cases have no technical records and often they have just political origins. Percent of non executive director members for each company is calculated through dividing non executive members by all members of director board. These data have been extracted from annual corporate reports to Iran exchange organization.

Ownership concentration

In Iranian companies, shareholders can have a vote in corporate general assembly based on size of board of directors and their owned shares. Thus, more shares a real or legal person owned, there is more possibility to select board of directors and CEO by him/her. So, minority stakeholders usually have no significant role in selecting directors and CEO. Therefore, it is expected that holding company considers its interests and ignore scattered and minority shareholders. Iran corporate governance law has no specific controlling mechanism in this regard. Corporate ownership concentration rank is calculated in order to measure this variable for each examined company. More this index is greater, shareholder concentration will be greater. "Herfindal – Hirschman" index has been used to calculate ownership concentration ratio. This index is achieved from sum square of stock percent pertaining to corporate stakeholders. Ownership concentration is increased along with increment of this index and if all shares pertain to one person, then they will have most value and the index will be equal to 10000 units. Its formula is as follows:

$$HHI: \sum(p_i/p \times 100)^2 \quad (3)$$

HHI: is Herfindal- Hirschman index, P_i is number shares of major shareholders in year t , P : is total shares of corporation. The percents and combination of corporate stockholders have been extracted from corporate annual financial statements and website of Iran exchange organization.

Discretionary accrual income

Discretionary accrual income is calculated using adjusted Jones model and its measurement method is presented in below. Accrual income items are divided into discretionary and non discretionary and will be measured. Influence of corporate economic situation on accrual item in a specific time period (which is known as event period) is estimated by sales, plant, and equipment variables as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it} \quad (4)$$

Where TA_{it} ; is sum of accrual items, A ; is sum of assets, ΔREV ; is change of sales income, and ΔPPE ; is change of assets, machineries, and equipments. After estimating parameters of above model using 2004 to 2009 information of each company through applying time series models, non discretionary accrual items (NDA_{it}) are calculated for estimate period (that is, year 2010) as follows:

$$NDA_{it} = \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \left(\frac{PPE_{it}}{A_{it-1}} \right) \quad (5)$$

Finally, discretionary accrual accounting (DA_{it}) or earnings management index has been calculated as follows:

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it} \quad (6)$$

The difference between net profit and net cash from operation (as total accrual items) has been calculated using below formula:

$$TA_{it} = E_{it} - OCF_{it} \quad (7)$$

Where E ; is net income before tax, OCF ; is net cash from operation, and TA ; is total accrual items in 2010 time period. All mentioned data have been extracted from annual financial statements of companies.

Research model

Considering theoretical bases and research history, following relations between variables are predicted:

$$(EVA_{it} - CSV_{it}) = \alpha_0 + \alpha_1 DA_{it} + \alpha_2 \%EXE DIR + \alpha_3 \%NON EXE DIR + \alpha_4 \%OWN CONC + \varepsilon \quad \text{Equation 8}$$

Where DA ; discretionary accrual items, $EXE DIR$; executive or in board of directors, $NONEXE DIR$; out board or non executive directors, $OWN CONC$; is ownership concentration.

Control variables

Considering research history as well as theoretical foundations, we have entered leverage ratio, corporate size, and corporate ownership type into research model as control variables. In addition to increment of corporate risk costs, it is expected that corporate debts increases and welfare/wealth of shareholders decreases. Moreover, greater companies face greater deviances; earnings management and figures manipulation in state companies is possible because most of their boards of director members are non executive. Hence, a positive relation with difference is expected. In this way, research model will be as follows:

$$(EVA_{it} - CSV_{it}) = \alpha_0 + \alpha_1 DA_{it} + \alpha_2 \%EXE DIR + \alpha_3 \%NON EXE DIR + \alpha_4 \%OWN CONC - \alpha_5 LEV + \alpha_6 SIZE + \alpha_7 TYPE OWNE + \varepsilon \quad (9)$$

Table 1. Descriptive analysis.

Industries	Total	Number selection	Number of governmental	% EXE DIR	AVE-DA	AVE-OWNE conc
Mineral	23	11	4	54	0.1678	6542
Food	22	12	3	48	0.5431	7854
Cement	42	19	7	25	0.7654	8976
Metal	57	17	4	45	0.2351	4532
Automobil	32	15	7	27	0.6542	8761
Oil	30	17	9	21	0.7682	9543
Pharmacy	26	11	2	65	0.0321	3245
Total-AVR	232	102	36	38		

Table 2. Linear regression results of EVA and CSV.

Model	Unstandardized coefficients		Standardize coefficients	t	Sign
	B	Std. error	Beta		
EVA	0.546	0.733	0.576	4.251	0.000
CSV	0.563	0.213	0.632	3.437	0.023

Table 3. Linear regression result of discretionary accrual item.

Model	Standardized coefficients			t	Sign
	B	Std. error	R ²		
EVA-CSV	0.416	0.526		3.721	0.000
DA	0.598	0.383	0.532	2.754	0.031

Table 4. Linear regression result of corporate governance.

Variable	R	Adjusted R ²	T	Sign (5%)
EXE DIR	0.465	0.342	2.521	0.042
Non EXE DIR	-0.318	-0.215	0.0731	0.821
OWNE CONC	0.643	0.581	2.942	0.028

Descriptive statistics

Considering restrictions of statistical universe (that is, end of financial year must be at the end of Esfand (December), they should not be of investment companies, and their share must be dealt at exchange market), Table 1 show that 232 companies have conditions of statistical universe. 102 companies were selected among them as random sample but 16 companies were removed due to abnormality of their data. The companies were selected from seven industries; 35% of companies had state ownership and the rest had private ownership. Average of executive director ratio in industries with more state ownership was 24% where this average in industries with more private ownership was 53%. Standard deviation of corporate executive director ratio was negligible (approximately 5%). Average of ownership concentration in state companies was more than private ones and it means that still most of shares are under state ownership and there is low floatability. In addition, average of discretionary accrual accounting as earnings management index in industries with more state ownership is higher than companies with private ownership.

RESULTS AND DISCUSSION

Tables 2, 3 and 4 show regression result of the assumptions. Table 2 relates to the first hypothesis. Meaningfulness of difference between economic value added and created shareholder value is examined in this hypothesis. In order to examine meaningfulness of this difference, we used three year average of these two indices for companies of statistics universe and we compared the averages. It appeared that T equals to 3.437 and sign is 0.023 and less than alpha (5%):

$$EVA_{it} - CSV_{it} = \alpha_0 + \alpha_1 DA_{it} + \varepsilon \quad \text{Equation 10}$$

Regression results of the second hypothesis are presented in Table 3. This hypothesis assumes that the difference of economic value added and created

Table 5. Forward results.

Variable	Beta	T	Sign
DA	0.62	2.763	0.017
OWNE CONC	0.53	2.431	0.023
EXE DIR	0.46	2.329	0.034
LEVERAGE	0.41	2.184	0.038
TYPE OWNE	0.34	2.068	0.041
SIZE	0.28	2.026	0.043
NON EXE DIR	0.19	2.002	0.047

shareholder value is caused by discretionary accrual accounting.

Intensity of adjusted R^2 equals to 53% and alpha is 0.031 which is less than 5% and so it cannot reject hypothesis. Moreover, relation of variables is a positive and direct one. Hence, discretionary accrual accounting may explain part of the differences between economic value added and created shareholder value.

Regression results of the third hypothesis are wholly presented in Table 4. Relation of executive director ratio with difference between value added and created shareholder value is approved because sign was less than alpha and equaled to 0.042. Intensity of their relation has been adjusted and equals to 34% (relation type is positive). So, it can be said that part of the difference is specifiable through performance of executive directors. Intensity of the relation between non executive director ratio and the difference has been adjusted and equals to 21% and sign is 0.82 (relation type was negative). Thereupon, performance of non executive directors has no effect on differences between value added and created shareholder value. In addition to these two cases which were related to the combination of corporate body of directors, influence of corporate shareholder combination on the difference has been examined. Intensity of the relation is 58%, relation type is direct, and sign equals to 0.029 which is less than alpha (5%).

Performing forward statistical method as shown in Table 5, influence of dependent and control variables on dependent variable of the research (that is difference of economic value added and created shareholder value) has been cleared: initially, discretionary accrual accounting (62%), ownership concentration ratio (53%), executive director ratio (46%), leverage ratio (41%), corporate ownership type (34%), corporate size (28%), and finally non-executive director ratio (19%).

Conclusion

Main objective of the present research includes examining any difference in wealth of shareholders utilizing economic value added and wealth of shareholders based on accounting figures. In addition,

factors with influence on afore difference have been analyzed through discretionary accrual accounting and corporate governance system.

Results of the research showed that the difference between economic value added and wealth increment (based on "Fernandez" model) in examined companies is significant. Economic value added is based on economic model but "Fernandez" model is established upon price mechanism of the capital market and accounting figures. In research literature, there is a difference between economic measurement of performance and measurements based on accounting system (this is approved in this hypothesis).

In the second hypothesis, the difference between measurements which are based on economic value added and accounting concepts has been assumed because of manipulating accounting profit figures and statistics results approved it and emphasized that reported profit figures in examined companies are adherently manipulated utilizing discretionary accrual accounting in a way that reported figures of income and expenditure necessarily did not display occurred economic events in companies. In other words, managers calculate and report profit figures in a way to achieve specific goals such as achieving a certain profit.

In the third hypothesis, influence of three corporate governance factors on differences between shareholders value has been examined. These factors relate to the combination of corporate board of directors (with respect to be executive and non executive) and combination of corporate shareholders. Influence of executive director ratio has been approved but Influence of non executive director ratio on the difference has not been approved. So, executive directors who work in the company can influence on corporate accounting policy and take particular operational policies to report profit figures in a way to supply their interests in the company. But non executive directors cannot change operational and financial policies and make decisions in a less adherently manner because they are not work in the company and just participate in the board of directors sessions. These directors are usually chosen from other companies and/or state organizations. Relation of ownership concentration ratio and corporate shareholder combination with calculated difference was approved and it indicates influence of main shareholder on selection of managers, CEO, and board of directors and thereupon operational/financial policies are taken consistent with their interests. Minority stockholders cannot play a significant role in this regard. Approving these relation means that if stock scatter was low, corporate stock belong to a limited individual, or one real/legal person own all corporate stock, then they/he/she can influence on all corporate policies and report accounting figures in a way to supply their benefits.

In addition to variable such as earnings management and corporate governance, influence of financial

leverage, corporate size, and corporate ownership type on the difference was examined. All three elements have direct and positive influence. So, it was cleared that in companies with more debts, the manipulation of profit figures is greater. Likewise, possibility to manipulate accounting figures in greater companies is more than the possibility of manipulation in smaller companies.

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