The effect of earnings quality on cash dividend of listed firms in Tehran Stock Exchange

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ABSTRACT

The present study is going to investigate about the effect of earnings quality on cash dividend within a sample of 150 firms enlisted in Tehran Stock Exchange during the 8 years period of time between 2006 and 2013 that has been chosen by using a simple random method. The research method is correlation type and it has used a binary logistic regression model. Results have shown that there has been a meaningful relationship between earnings quality and cash dividend. Also the research results showed that variables such as operating cash flows, firm size, debt ratio, and the ratio of earnings to asset have had a meaningful relationship with cash dividend. From among the variables above, the operating cash flow to total assets ratio has had the strongest relationship with cash dividend. After that, earnings quality has had the highest relationship with cash dividend. This shows that the sample firms first report the dividend through earnings management and then pay. Also the evidences showed that the higher ratio of earning to assets would result in higher probability of cash dividend. This ratio shows the efficiency and performance of management in using firm's assets. In other words, it can be claimed that whenever management's performance in using assets improves, cash dividend would increase. The research evidences show that the greater amount of firm size will result in increased cash dividend. This shows that big companies have more capability in cash dividend than small companies. Also the present research results show that whenever the debt ratio increases the probability of cash dividend is reduced.

1. **Introduction**

Cash earning is a part of earnings of a firm that is paid to the stockholders in cash. Cash dividend has been the oldest and most common method of transferring return from the firms to stockholders. Firm management should permanently decide about the maintenance or the distribution of all or a part of cash earnings of stocks. Regarding investment perspective the firm will use the earnings held to finance until the return of their capital projects is more than financing costs. An institution would use the issuance of new stocks or borrowing loans or a combination of the two for financing. In this perspective cash dividend of stocks would be a reflexive issue and the amount of cash stock earnings will depend on the number of firm's investment opportunities and costs required to administer them. On the one hand, if the investment opportunities of a firm are high, the percentage of cash stock earning would be less. On the other hand, if a firm does not have ability to find and administer profitable investment opportunities, the percentage of cash dividend will increase. The amount of dividend is determined by management. It is clear that in

long term the amount of cash to pay dividend is determined by firm's profitability, but this is not the case in short-term. Sometimes firm's earnings may reduce by the pass of the time and the manager may try to keep the previous level of dividend or increase it. In the present research we have tried to investigate about some effective factors in firms' cash dividend among firms enlisted in Tehran Stock Exchange such as earning quality factor. There are several different factors but we are going to investigate about 5 factors as: earning quality, debt ratio, the ratio of earning to asset, firm size, and the ratio of operating cash flows to assets to cash dividend. In this section the research topic, the importance of the issue and problem statement, have been presented. Then the research hypotheses, variables, and research goals have been explained and then the applications, the research range, research method, and data collection method have been explained.

Theoretical foundations and research literature

Managers believe that they can make two contradictory decisions regarding dividend:

1) Keeping earnings in the firm and lack of dividend in order to appropriate it to pay the original amount and the

subsidiary parts of debts and financing for investment projects

2) Earning distribution as cash dividend among the stockholders

Each of the decisions above will have different effects on firm value and its stock price, although lack of earning distribution and maintaining earnings would be considered as the easiest financial resource for the company. But does the earning held in a firm appropriate desirably to profitable investments? In other words, the stockholders expect that the earning held by the company could be invested in another place at least equal to the minimum return rate of the investment. Thus, the pressures on the part of demanding cash stock earning on the part of investors and their preference for dividend will lead firm managers to look for an optimized resolution for this problem. Regarding this, studying the effective factors in dividend policy has permanently been noticed in financial management discussions. But studying the effect of earning quality on cash dividend has not been noticed by the researchers yet. The researchers have tried to compensate for this deficiency and add research results to the literature and the theoretical foundations of dividends. The research literature has been represented below:

Ikram (2013) stated that there are many evidences showing that firms with high earning management will encounter negative abnormal return. Also they showed that earning manipulation for more dividends is seen more in these firms than the others.

Carlos & et al (2012) studied the relationship between accruals and earnings and cash flows and stated that firms having high accruals would have a low level of cash flows and the amount of profitability is high among these firms. Results of their research showed that the investors refer to firms that have high earnings and can not recognize that high earning does not always mean a high level of cash flows.

Kim & et al (2010) found out in a research in South Korea that the existence of foreign investment companies among Korean firms' stockholders resulted in more dividends in those firms. Meanwhile, firms that didn't have foreign stockholders among their stockholders had fewer dividends.

Nadi (2010) studied about the effect of merging and integration on banks' dividend policy during an 11 years period from 1997 to 2007. He found that beta coefficient, taxation, and financial structure are among the determining factors in dividend policy in banks mentioned. Also his research results showed that beta coefficient has had the highest effect on dividends of merged banks.

Chen & Dhiensiri (2009) studied determining factors in dividend policy in New Zealand and found out that dividend has had a positive relationship with ownership dispersion and a negative relationship with internal ownership degree. They also concluded that growth of sales results in a reduction in dividends.

Bani Mahd & Asghari (2011) investigated about the effect of financial leverage on dividends. They showed that there has not been a relationship between dividends and financial leverage. But evidences of their research showed that dividends have been affected by firm size and operating cash flow.

Alavi Tabari & et al (2009) studied the relationship between earning quality and dividends in firms enlisted in Stock Exchange. They utilized 4 criteria of accruals posed in Dicho & Dichew (2002) model to measure earning quality. Results of their research showed that when the repeated representation criterion of income statement is used as an earning quality index, firms that have had higher earning quality do not pay dividends on due time. Also research results showed a meaningful relationship between the criterion of the existence of extraordinary items as earning quality index and the amount of dividends payouts in firms enlisted in Tehran Stock Exchange. Firms that lack exceptional items will have higher earning quality and will pay more dividends and vice versa. Also the research results showed that earning quality is not meaningful through the increase of dividends comparing different consecutive years.

Shahmoradi carried out a research in 2001 entitled: "the relationship between accounting earnings and stock return" as an MA dissertation supervised by Dr. Mohammadreza Nikbakht in Tehran University and showed that the main goal of investment is earning return. He believed that investors pay attention to different factors and there is a meaningful relationship between accounting earnings and stock return but there is not a meaningful relationship between net earning and stock return. There has been a weak relationship between accounting earnings (operating and comprehensive) and stock return.

Khadem & Etemadi (2001) investigated about the relationship between dividends policy and stock price changes in firms enlisted in Tehran Stock Exchange in Tarbiat Modarres University. In this study, they investigated about the effect of dividend on stock price. The research results showed that dividends have had a diminishing effect on stock price in firms enlisted.

Hypotheses development

Regarding what was pointed above and the research questions, the present research could be presented in the form of a major hypothesis as follows:

There is a meaningful relationship between earning quality and cash dividends.

Methodology

The present research is correlation type and regarding the goals it is applied. Additionally, since the historical information has been used in testing the hypotheses, it would be classified as quasi-experimental. Also the present study is experience based and it uses inferences and regarding the study type it is field-library study that uses historical information in the form of post-incidental. In the next part we are going to present how we have calculated each of the variables:

Hypotheses test model

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \square$$

Where,

Y = the probability of cash dividends

X_1 = earning management of each firm per year

X_2 = the ratio of earning to assets of each firm per year

X_3 = the ratio of debt to assets of each firm per year

X_4 = size of each firm in each year

X_5 = the ratio of operating cash flow to assets of each firm per year

… = residual amounts

Independent variable

The independent variable is the one that affects the dependent variable positively or negatively (Khaki, 1999). In this research earning quality measured through earning management has been considered as the independent variable.

Earning management: in the present research we have used Kotary & et al (2005) model to measure earning management. This model is as follows:

$TcA_{jt} = \alpha_0 + \alpha_1 + \alpha_2 (\Delta Rev_{jt} - \Delta Rec_{jt}) + \alpha_3 PPE_{jt} + \alpha_4 ROA_{jt} + \square_{jt}$

Where,

TcA: total accruals that is calculated through the difference between net income and operating cash flows.

ΔRev: the difference between current year sales and previous year sales

ΔRec: change in accounts receivable of the current year compared to the previous year

PPE: total properties, equipments, and machinery of current year

ROA: the ratio of earning to assets

$\square_{jt}$: residuals

All model variables are divided by total assets at the start of the period. It should be noted that to calculate the model residuals, the data were arranged in the form of time series and isolated by each industry (cross sectional). Model residuals show discretionary accruals or earning management index (Kothari et al, 2005).

Control variables

The control variable is the one that affects the relationship between independent and control variables. In this research control variables are: cash flows resulting from operations, the ratio of earning to total assets (return on assets), debt ratio, and firm size. Below we will describe how we have measured these variables.

Cash flows resulting from operations: it is the input or output amount of cash resulted from operations divided by total assets of each firm per year.

The ratio of earning to assets: it is a ratio that shows the performance and profitability of the firm. This ratio is gained from the division of net earnings to total assets of each firm per year.

Debt ratio: it is the ratio of total debts to total assets.

Firm size: it is a relative variable that shows the size and length of a firm. This variable is measured based on natural logarithm of total assets of each firm per year.

Dependent variable

The dependent variable is the one whose changes are affected by the independent variable (Khaki, 1999). As it was pointed out earlier, the dependent variable in this research is the cash earning paid to the stockholders. If the earning is paid in cash, the amount would be equal to 1 and if not it would be equal to 0. The data can be gained from cash flow statements. This variable is shown by 1 & 0.

Data analysis

The table below is resulted from the descriptive statistic of the research variables:

Table (1): Results of descriptive statistics

Description	Observations No.	Earning management	Debt ratio	Earning to asset ratio	Operating cash flow	Total assets (Million Rials)
Average	1378	0.1366	0.7031	0.1852	0.1290	1574737.61
Median	1378	0.0838	0.6542	0.1168	0.1130	255132.5
Standard deviation	1378	0.2091	0.5511	1.708	0.1426	13083955.65

Regarding the descriptive statistics we can divide the indexes above into central tendency and dispersion indexes where central tendency indexes are average and median and the dispersion indexes show standard deviation of the results of hypotheses tests as shown in the table below:

Hypothesis test:

The hypothesis was stated in the two forms below:

H_0: There is not a meaningful relationship between earning quality and cash dividends.

H_1: There is a meaningful relationship between earning quality and cash dividends.

In table 2, the amount of meaningfulness level of earning management equals %3.2 and it is less than %5. Thus, in an assurance level of %95, there has been a meaningful relationship between independent variable, earning management, and cash dividends. Therefore, H_0 was rejected and its counterpart hypothesis, H_1, could be approved. Also since the amount of meaningfulness of the variables such as earning to assets ratio, debt ratio, firm size, and operating cash flow to assets has been less than %5, in an assurance level of %95 we can conclude that there has been a meaningful relationship between control variables and the dependent variable.

Table (2): Hypothesis test

Variables	Coefficients	Standard deviation	Generating statistic	Degree of freedom	Meaningfulness level	Expected coefficients
Latitude from base	-2.183	1.078	4.098	1	0.043	0.113
Earning management	2.639	1.227	4.623	1	0.032	13.994
Earning to asset ratio	2.578	1.147	5.049	1	0/025	13.171
Debt ratio	-0.694	0.139	24.937	1	0.000	0.500
Firm size	0.342	0.086	15.755	1	0.000	1.408
Operating cash flow to asset ratio	4.068	0.957	18.073	1	0.000	58.429

Cash dividends probability model for total statistic sample

In this part and regarding the results of testing the hypothesis, cash dividends probability model for the total statistic sample was devised. In previous part, it was determined that earning quality, earning to asset ratio, debt ratio, firm size, and operating cash flow to asset ratio have had a meaningful relationship with the dependent variable and affect it. In table (2), the coefficients related to each of the variables above have been identified. Therefore, cash dividends probability model for total statistic sample model was extracted from the table 3 as follows:

$Y = X_1 2/639 + X_2 2/578 - X_3 0/694 + X_4 0/342 + X_5 4/068 - 2/183 + \square$

Where,

Y = cash dividends probability

X_1 = earning management of each firm per year

X_2 = the ratio of earning to assets of each firm per year

X_3 = the ratio of debt to assets of each firm per year

X_4 = size of each firm in each year

X_5 = the ratio of operating cash flow to assets of each firm per year

… = residual amounts

Tests related to model validity

Chi^2 test:

The binary logistic regression model estimation has been used to do this calculation. The meaningfulness presupposition of the model could be written as follows:

H_0: There is a meaningful model.

H_1: There is not a meaningful model.

$$\begin{cases} H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 \\ H_1 : \beta_i \neq \beta_j \end{cases} i \neq j = 1,2,3,4,\ldots$$

The amount of Chi-square test statistic has been calculated to be equal to 109.459 based on the following table and as it can be seen in the figure below, it falls within lack of the rejection of null hypothesis and its meaningfulness level has been below %5. Thus, the null hypothesis showing the existence of a meaningful model is not rejected.
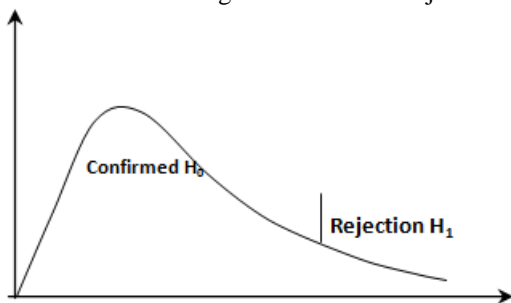

Table (3): Chi2 statistic

Stages	Chi2 statistic	Degree of freedom	Meaningfulness level
Step	109.459	5	0.000
Block	109.459	5	0.000
Model	109.459	5	0.000

Cox-Snell identification coefficient:

As it is known, when using multiple variable regression method, the correlation coefficient (identification coefficient) R^2 shows the amount of the changes of the dependent variable affected by the independent variable. In the present study, since we have used a logistic regression method, Cox-Snell identification coefficient plays the same role that R^2 plays in multiple variable regressions. This means that Cox-Snell identification coefficient shows the amount of the dependency between the dependent and independent variables. Regarding the table below, the amount of this index equals %17.6. This amount seems a suitable identification coefficient in logistic regression.

Table (4): Identification coefficient

Log likelihood	Cox-Snell R square	Nagelkerke R square
657.523	0.176	0.290

Model prediction percentage:

Results of the descriptive statistics tables show the fact that the model prediction percentage has been in 91.8 levels. Since in binary logistic regression method, the model prediction percentage should be higher than %50 to be accepted, we can conclude that the model prediction percentage of the present study has been appropriate.

Table (5): Model prediction percentage

Observations of change in report type	Prediction		Prediction percentage
	Cash dividend		
	Lack of cash dividends	Cash dividends	
Lack of cash dividends	2	108	1.8
Cash dividends	5	1263	99.6
Total percentage			91.8

Testing co-linearity among independent variables of the model

Usually there exists coordinate movement or co-linearity among the independent variables. But if this co-linearity is so much, the model would not be appropriate. One of co-linearity test methods is to calculate correlation matrix. In this matrix the correlation coefficient between each couple of independent variables is calculated. Lack of correlation of independent variables means that correlation coefficient between each pair of independent variables is equal to 0. But practically it is impossible to get a correlation coefficient equal to 0 and as a basis we can consider correlation coefficients less than %50 between each couple of independent variables to be acceptable and there would be no concern of the existence of co-linearity. In this research since all estimated coefficients were meaningful and capable of being isolated, we can conclude that the problem of co-linearity among the independent variables of the model was not so sever. The amount of co-linearity fluctuations among independent variables of the model has been represented in table 6. This table shows that each pair of independent variables do not suffer from sever co-linearity.

Table (6): Correlation between model variables

		Operating cash flow to asset ratio	Firm size	Earning to asset ratio	Debt ratio	Earning management
Operating cash flow to asset ratio	Pearson's correlation coefficient	1	0.077	0.016	0.009	0.186
	Meaningfulness level		0.004	0.558	0.737	0.000
	Number of observations	1378	1378	1378	1378	1378
Firm size	Pearson's correlation coefficient		1	0.002	0.075	0.080
	Meaningfulness level			0.927	0.005	0.003
	Number of observations		1378	1378	1378	1378
Earning to asset ratio	Pearson's correlation coefficient			1	0.001	0.003
	Meaningfulness level				0.963	0.899
	Number of observations			1378	1378	1378
Debt ratio	Pearson's correlation coefficient				1	-0.057
	Meaningfulness level					0.035
	Number of observations				1378	1378
Earning management	Pearson's correlation coefficient					1
	Meaningfulness level					
	Number of observations					1378

Conclusion and suggestions

The research findings showed that the effective factors in cash dividends are: earning quality, firm size, earning to asset ratio, operating cash flow to asset ratio, and debt ratio. From among the variables above, earning quality, firm size, earning to asset ratio, and operating cash flow to asset ratio have had a direct relationship with cash dividends. From among the variables above, operating cash flow to total assets ratio has had the strongest relationship with cash dividends. After this variable, earning quality has had the greatest relationship with cash dividends. This shows that our research sample firms first report the dividable earning through earning management and then pay it. Therefore, the quality of earnings reported in research sample firms was low. Also the evidences of the research showed that the higher amount of the ratio of earning to assets would result in higher probability of cash dividends. This ratio shows the efficiency and performance of management in using firm's assets. In other words, we can say that whenever management's performance improves in using the assets, cash dividends will increase. Research evidences showed that the increase of firm size also will result in increasing cash dividends. This shows that big firms would have more capability in cash dividends compared to small ones. Also the results of this research showed that whenever debt ratio increases, cash dividends probability will decrease.

Suggestions based on research hypothesis: In testing the hypothesis, the existence of a meaningful relationship between earning quality and cash dividends was approved. This shows that managers in sample firms of this research first report and announce net income and dividable earnings through earning management and the general assembly of stockholders divides earnings based on it and finally the firm pays it. Thus, it can be suggested to the member audits of official accountants to enhance auditing quality in auditing process to discover important accounting deviations. Also it can be suggested to major investors and stockholders of firms that carry out the task of dividends to avoid dividends through the establishment of a strategic system and the establishment of internal controls. Also it can be suggested to financial analysts to pay attention to dividends when using financial statements of firms and analyzing earnings and dividing it.

References

1) Amidu Mohammed and Joshua Abor , (2006) "Determinants of dividend payout ratios in Ghana", The Journal of Risk Finance, Vol. 7 Iss: 2, pp.136 – 145

2) Al-Kuwari Duha (2009) " Determinants of the Dividend Policy in Emerging Stock Exchanges:The Case of GCC Countries" Global Economy & Finance Journal Vol. 2 No. 2 PP. 38-63

3) Anil Kanwal and Sujata Kapoor(2008)" Determinants of Dividend Payout Ratios-A Study of Indian Information Technology Sector" International Research Journal of Finance and Economics, ISSN 1450-2887 Issue 15

4) Al-Malkawi Husam-Aldin Nizar (2007) Determinants of Corporate Dividend Policy in Jordan:An Application of the Tobit Model" Journal of Economic & Administrative Sciences Vol. 23, No.2 ,PP 44-70

5) Bani Mahd, Bahman; Asghari, Ali (2011). Studying the effect of firm leverage on dividends policy in firms enlisted in Tehran Stock Exchange. Journal of Financial Knowledge of bonds' analysis (Financial Studies), No. 10, P: 18.

6) Chen Jianguo and Nont Dhiensiri (2009)" Determinants of Dividend Policy: The Evidence from New Zealand "International Research Journal of Finance and Economics ISSN 1450-2887 Issue 34

7) Copeland, E. Thomas. and Westo, j. Fre. and Kuldeep, Shastri. (2005). "Financial Theory and Corporate Policy", Addison- Wesley.

8) Gallagher, j. Timothy. and Joseph. D. Andrew. (1997). "Financial Management; Principles and Practice", Hall International INC.

9) John. Lintner, "Distribution of incomes of corporation among Dividends, Retained earning, and Taxs" American Economic Reserch vol. 46 (Jounary 1956) 97-113.

10) Khadem; Etemadi (2001). Studying the relationship between dividends policies and changes in stock price in firms enlisted in Tehran Stock Exchange. MA Dissertation supervised by Dr. Hossein Etemadi, Tarbiat Modarres University.

11) Khaki, Gholamreza (1999). Research method in management. Educational studies and planning Institution, Tehran.

12) Kubo Katsuyuki and Takuji Saito (2006) " Dividend Policy and financial incentive of top managers:case in Japan , working paper , Waseda University

13) Kothari S.P.A.J.Leoneand C.E.wasley(2005)performance Matched Discretionary Accrual Measure.Journal of Accounting and Economics pp.163-197

14) Kowaleweki Oskar , Ivan Stetsyuk and Oleksandr Talavera (2007) " Corporate Governance and Dividend Policy in Poland" working paper , Warsaw School of Economics

15) Kim Soonjung , Wonsik Sul and Shin Ae Kang (2010) " Impact of Foreign institutional Investors on dividend policy in Korea: a Stock Market perspective" Journal of Finance Management and Analysis , vol 23 ,Issue 1 , pp.10-26.

16) Ling say Few , Mohd Lukman Abull Mutalip , Aidil Rizal Shahrin and Mohd Said Othman (2008) " Dividend Policy : Evidence from Public Listed Companies in Malaysia" working paper, university of Malaya

17) Musa, Inuwa Fodio (2009) "The dividend policy of firms quoted on the Nigerian stock exchange: An empirical analysis" African Journal of Business Management Vol.3 (10), pp. 555-566

18) Miller, M. and Modigliani, F. (1961). "Dividend Policy, Growth, and The Valuation of Share", Journal of Business 34. pp: 411- 433.

19) M.J. Gordon, the investment financing and voluation of the corporation. Homwood, I'll-, Richard Irwin, 1962.

20) Nikolaos Eriotis (2008) . The Effect of Corporate Leverage on Dividend Policy : Evidence From Greek Panel Data .

21) Seida, Jim. A. (1997). "The Effect of Dividend on Investor Behavior: The Dividend Clientele Hypothesis", Ph.D dissertation in Texas A & M university.

22) Sharp William F, Gordon J. Alexander, biley Jeffery V-INVESTMENTS-prentice-hall. Ed. 1999.

23) Scott William.(2009)."Financial Accounting Theory".prentice Hall،chapter11 pp.402-428

24) Watt Ross L. Zimmerman Jerold L., (1986). Positive theory, Prentice- hall.