Study the Relationship Between Corporate Profitability and Cash Dividends to Healthy Companies and Bankrupt Companies and Uncertainty in the Model, Altman Bankruptcy

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Abstract

Dividend policy is one of the most controversial financial issues. Patterns contradictory ideas that are sometimes lacking strong experimental backing, seeks to explain dividend policy company. Dividend of two very important aspect is debatable. On the one hand is a factor affecting the investments of the company. On the other hand many of the company's shareholders want cash dividends are, hence managers with the goal of maximizing wealth always must be between different interests, they are profitable investment opportunities and balance. Therefore, dividend decisions taken by managers is very sensitive and important. All-sided attention to factors and constraints affecting the profit share policy in addition to the maximum render the wealth of the shareholders, the company in the field of preservation and survival of mankind, the competition and the increasing growth and development it provides. The main topics of research on the factors affecting the Division of profits that factors such as return on assets and return on equity and profit per share and operating profit and economic value added can be divided into affect benefit policies.

Introduction

Different groups have different reasons to pay special attention to the issue of performance evaluation and consider them important, including owners, management, investors, governments, banks and creditors, and ... There are also different criteria for evaluating the performance of each can be in place appropriate measures to assess performance. Information required for these criteria through financial statements (accounting), economics, free market, or a combination of them achieved that each has a different advantages and disadvantages. Since the performance of traditional valuation metrics such as ROA, ROE, EPS, all rely on accounting profit. He at the same time its net profit has a lot of uncertainties including the possibility of making a profit by paying the company's management in order to earn more bonuses, the use of estimates and estimates in calculating accounting profit suspicious claims, i.e. a cost estimate and the like. Another disadvantage to using commonly accepted methods allow optional use management is Hsabdray. It is expected that the manipulation of accounting profits or income smoothing on traditional criteria for evaluating the performance of influence.

History Research

Arabmazar and colleagues (1383) showed a profit to operating cash more power to explain stock returns.
Karami and colleagues (1385) showed that the intensity of the relationship between financial ratios include profitability ratios, debt and market efficiency is not strong and it seems that efficiency is not enough information to predict the financial statements.
Saeedi and Ghaderi (1386) by selecting variables book value, earnings and operating cash flow and investments market value predicted. Their research results indicate that the combination of book value and earnings better model to predict the market value of the supply.
Izadinia (1382) in his dissertation concluded that the company's market value and economic value added there are significant correlations.
Fukuda research evidence (2000) suggests, when dividend payments for the first time is changed, the market reaction to the growth of corporate profits in the years before the change and the positive change in the year, dividend cuts and the negative market reaction to the payment. His endorsement of the findings is that when administrators tend to change the most profit in the profit of divider or its minimum value.
Cap PLO and colleagues (2004) in their study concluded that an increase in the dividend announcement, information about future cash flows with no steady increase. They also pointed out that managers from declaring dividends as a way of signaling to reduce agency costs and information asymmetry do not use. Hence, their observations could support the dividend signaling theory. In this study, the messaging dividend in Tehran Stock Exchange has been investigated.
Hypotheses
between profitability and cash dividends in healthy companies A stronger relationship than bankrupt companies and there are doubts Altman bankruptcy model.
1- Between return on assets with cash dividends in healthy companies A stronger relationship than bankrupt companies and there are doubts Altman bankruptcy model
2- Between equity returns with cash dividends in healthy companies A stronger relationship than bankrupt companies and there are doubts Altman bankruptcy model.
3- 

Research method
Research, descriptive research where to testing the relationship between variables and significance of the estimated regression analysis and correlation models will be used. The present study is an applied research, according to which the data subject in relation to events that occurred in the past and dependent variables before and after the entry of independent variables to measure and study be, Methodology the research was comparative type as well as inductive reasoning is inductive-research.

Statistical Society and sample
The study population consisted of all companies listed securities Drbvs Tehran. In this study, to be an appropriate representative sample of the target population, the systematic elimination method is used to select the sample. After making assumptions, 106 companies from 19 industry remained.

Variables
Variables classified into three groups:
Dependent variable:
Cash dividends
Independent variables:
Cash dividends
Return on assets
Return on Equity
Earnings per share
Economic Value Added
Operating Profit

Methods of data analysis
In the present study to analyze the data, descriptive and inferential statistical tests will be used. The descriptive statistics of the mean, median and standard deviation are given. Statistical methods for data analysis under the impact of the research methodology and research methods have since based on correlation research, therefore the regression analysis and regression method is simple to test the assumptions will be used. Statistical software spss used in this research.

Descriptive statistics variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Views</th>
<th>Elongation</th>
<th>Skewness</th>
<th>minimum</th>
<th>maximum</th>
<th>Standard deviation</th>
<th>Average</th>
<th>Number of Views</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash dividends</td>
<td>636</td>
<td>0.521</td>
<td>0.769</td>
<td>0.0000</td>
<td>0.3251</td>
<td>0.0602</td>
<td>0.0761</td>
<td>636</td>
<td>Cash dividends</td>
</tr>
<tr>
<td>Return on assets</td>
<td>630.831</td>
<td>0.7017</td>
<td>25.000</td>
<td>70.7600</td>
<td>0.0116</td>
<td>2.7780</td>
<td>0.7017</td>
<td>636</td>
<td>Return on assets</td>
</tr>
<tr>
<td>Return on Equity</td>
<td>15.201</td>
<td>0.2755</td>
<td>7.379</td>
<td>2.9326</td>
<td>0.0001</td>
<td>0.3571</td>
<td>0.2755</td>
<td>636</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>19.838</td>
<td>0.4360</td>
<td>2.098</td>
<td>2.7553</td>
<td>0.0964</td>
<td>0.2050</td>
<td>0.6103</td>
<td>636</td>
<td>Earnings per share</td>
</tr>
<tr>
<td>Economic Value Added</td>
<td>3.371</td>
<td>-0.007</td>
<td>1.045</td>
<td>2.7323</td>
<td>0.0019</td>
<td>0.3198</td>
<td>0.4360</td>
<td>636</td>
<td>Economic Value Added</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>-0.007</td>
<td>0.914</td>
<td>1.6444</td>
<td>0.0000</td>
<td>0.3317</td>
<td>0.3717</td>
<td>0.3717</td>
<td>636</td>
<td>Operating Profit</td>
</tr>
</tbody>
</table>

According to the average cash dividends of companies respectively 0/0761 and 0000/0 and 0/3251 is the minimum and maximum amount equal to. Evaluation of skewness and kurtosis are 0 and 3, respectively. These variables should be normally distributed variables, shows that this variable is not normally distributed. According to the description given, the average return on assets, return on equity, earnings per share, operating profit of the sample companies during the period of economic value and positive research respectively 0/7017, 0/2755, 0/6103, 0/4360 and 0/3717 respectively.

Test the normal distribution of the dependent variable
In this study was to estimate the model parameters of the method of least squares shall be used, and typical of this method on the premise that the dependent variable, the study has a normal distribution, so that the non-normal distribution of the dependent variable, leading to the violation of the assumptions of this method for the estimation of parameters and do not offer the results properly. Hence it is necessary to continue being the normal distribution, this variable test case. Being normal is one of the premises of the remaining fraction of the regression regression model that represents the validity of the regression tests, so it's normal to normal being the dependent variable of the model being the remaining (the difference between the real values of estimates of the amounts). So it is necessary to estimate the normality of the dependent variable parameters to
be controlled and in case of non-normal condition suitable solution for them (including conversion of it) would be taken. In this study the issue through the Kolmogorov-Smirnov test (K-S) is examined. In this test the null hypothesis and the alternative hypothesis is as follows:

\[ H_0 : \text{Normal Distribution} \]
\[ H_1 : \text{Not Normal Distribution} \]

If the level of significance of the test statistic is greater than 0/05 (Prob > .05) H0 hypothesis of normal distribution of variables will be accepted. In Table 2 K-S test results for the dependent variable sample companies is provided.

<table>
<thead>
<tr>
<th>Significance level (Sig)</th>
<th>Statistics (K-S)</th>
<th>Number (N)</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.039</td>
<td>2.607</td>
<td>636</td>
<td>Cash dividends</td>
</tr>
</tbody>
</table>

According to the statistics, the dependent variable for the level of importance of the K-S is less than 5.0, so the hypothesis H 0 being the normal distribution based on 95% confidence level of these variables was denied, and if this is a normal distribution of the dependent variable are not entitled to.

Normality of the dependent variable is a prerequisite for regression models, so be sure to test the hypotheses of this variable is normalized. In this study, Johnson used to normalize the data transfer function by the software analyzed 16 Minitab is located. K-S test results after the normal process of data as Table 3.

<table>
<thead>
<tr>
<th>Significance level (Sig)</th>
<th>Statistics (K-S)</th>
<th>Number (N)</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.890</td>
<td>0.580</td>
<td>636</td>
<td>Cash dividends</td>
</tr>
</tbody>
</table>

According to Table 3, since after normalizing the data significance level (Sig.) Kolmogorov-Smirnov statistic for the dependent variable is higher than 0/05 (0/890), thus confirming the hypothesis H0 at 95% and indicates that the dependent variable after normalization process, are normally distributed.

**Correlation between variables**

In this section using Pearson's correlation coefficient to determine the relationship between variables and the correlation between them will be discussed. The correlation coefficient matrix between variables are presented in Table 4. The results of pearson, cash dividends and a significant positive correlation with economic value added. Return on equity and earnings per share is also positively correlated.

<table>
<thead>
<tr>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
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<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
<th>Cash dividends (P. Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.002</td>
<td>0.015</td>
<td>0.089</td>
<td>0.012</td>
<td>0.070</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(P. Value)</td>
<td>(P. Value)</td>
<td>(P. Value)</td>
<td>(P. Value)</td>
<td>(P. Value)</td>
<td>(P. Value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.744</td>
<td>1.086</td>
<td>1.085</td>
<td>0.770</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.573</td>
<td>1.000</td>
<td>0.572</td>
<td>0.770</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.573</td>
<td>0.572</td>
<td>1.000</td>
<td>0.770</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0.573</td>
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<td>1.000</td>
<td>0.770</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.573</td>
<td>0.572</td>
<td>1.000</td>
<td>0.770</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Study linearity between variables**

Linear also means there is a linear relationship between the explanatory variables or independent. One way to identify a linear or non-linear relationship to determine the correlation between independent variables. If there is no strong correlation between independent variables, both linear problem will occur. In this study, the linear relationship between independent variables using Pearson's correlation coefficient was used. As shown in Table 4, is specified, the variable return on assets, return on equity, earnings per share, economic value and operating profit positively correlated with each other, which is a very strong correlation between these variables. Therefore there is the problem of co-linearity between these variables, simultaneous arrival of these variables in a model not possible, it is necessary to review and test them in separate models as possible. In connection with all other variables are strong due to the lack of solidarity among their co-linearity can be said that there is no problem and enter the same time, they will not be co-linearity model created problems.

**The results of the first research hypothesis**
The first hypothesis test the relationship between return on assets and cash dividends, and statistical hypothesis is defined as follows:

H0: the return on assets and cash dividends, there is no significant relationship.
H1: between return on assets and cash dividends, there is a significant relationship.

This hypothesis using model (1) for panel data estimation and \( \hat{\beta}_1 \) if the coefficient is significant at a confidence level of 95% was approved.

\[
DIV_{t,i} = \alpha + \beta_1 ROA_{t,i} + \varepsilon_{t,i},
\]

\[
H_0 : \beta_1 = 0
\]

\[
H_1 : \beta_1 \neq 0
\]

In order to determine whether using panel data in estimating the model will be efficient or not, the Chow test in order to determine which method of tying or F (fixed effects or random effects) is more appropriate to estimate (recognition of the differences between fixed or random cross-sectional units) used the Hausman test. The results of these tests are presented in Table 5.

<table>
<thead>
<tr>
<th>Chow and Hausman test results for the model (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-Value</td>
</tr>
<tr>
<td>0.0461</td>
</tr>
<tr>
<td>0.0368</td>
</tr>
</tbody>
</table>

According to the results of the Chow test and P-Value (0.0461), test H0 hypothesis is rejected at the 95% confidence level and indicates that the method can be used panel data. Also according to Hausman test, and P-Value of (0.0368), which is less than 0.05, test H0 hypothesis is rejected at the 95% confidence level and H1 hypothesis is accepted. Therefore, the model is estimated using fixed effects.

To assess the validity of the model and review the assumptions of classical regression is required in addition to check the absence of linear time between independent variables entered into the model, the test in connection with the remaining being normal, residual variance of consistency, independence and the absence of clear error model (being a linear model) also. The normal test for being a different test error of sentences can be used. One of these exams, the test is that the Jarque-Bera in this research are also of this test has been used. Jarque-Bera test results showed that residue from an estimated 95% confidence level in the model of the normal distribution are entitled to, so that the possibility of relevant to this test (0.3492) is larger than the 5.0. Another statistical assumptions of the classical regression residual variance is consistency. If the variances are non-linear unbiased estimator and the least variance will not. In this study we test the homogeneity of variance was used for pagan. Considering the importance of this test, which is smaller than 0.05 (0.0362), the null hypothesis is rejected and it can be said that there is consistency variance heterogeneity of variance model is a problem. In this study, to address this problem in estimating estimated using generalized least squares (GLS) is used. In this study, the residuals are not correlated to test the assumptions of regression analysis and correlation analysis and called the Durbin-Watson (D-W) is used. According to preliminary results of model estimation Durbin-Watson statistic amount equal to between 1/5 and 2/37 and 2/5 is because we can conclude residuals are independent. In addition, to test whether the model is a linear relationship, and whether the model of the relationship between linear and non-linear explanation is true or not encryption test is applied. Due to the level of a symbolic test (0/7419) is larger than 05/0, so the null hypothesis of this test verified that the linear model and the model is not clear error. Summary results of these tests are presented in Table 6.

<table>
<thead>
<tr>
<th>Table 6. The results of tests on modeling assumptions (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-Value</td>
</tr>
<tr>
<td>0.7419</td>
</tr>
</tbody>
</table>

According to the results of Chow and Hausman tests as well as results of the statistical assumptions of classical regression model (1) research using panel data and fixed effects estimates are for. The results in Table 7 are provided.

<table>
<thead>
<tr>
<th>Table 7. The first hypothesis test results using fixed effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable cash dividend Views: 636 years - company</td>
</tr>
<tr>
<td>Relation</td>
</tr>
<tr>
<td>Positive</td>
</tr>
<tr>
<td>Positive</td>
</tr>
<tr>
<td>0.6248</td>
</tr>
<tr>
<td>7.6135</td>
</tr>
</tbody>
</table>

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In total models being significant due to the possibility that the amount of statistics is smaller than F 5.0 (0.0) with a 95% confidence interval significant endorsement of the whole model. It also speaks to the model designation coefficient is 48.62 percent of the company's cash dividend, by defining the variables entered in the model.

Reviews significant factors in the results presented in Table 7, since the probability of t-statistic for variable rate of return on assets is less than 0/05 (0.0348), resulting in a significant relationship between return on assets and cash dividends on 95% confidence level is confirmed. The first hypothesis is accepted and can say with 95% confidence between return on assets and cash dividends, there is a significant relationship. The coefficient of this variable is positive (0.2) there is a direct relationship between the return of assets and cash dividends is the company so that with increasing asset efficiency unit 1, cash dividends, as well as to the extent of the company's unit 0.2 is increased. Therefore, according to the analysis made in connection with the first hypothesis confirmation study it can be concluded that between asset returns and the company's cash dividend, there is significant direct and relationship.

The second hypothesis test results
The purpose of the second hypothesis of this study is whether the return on equity and cash dividends, there is a significant relationship or not? And statistical hypothesis is expressed as follows:

H0: Among the company's cash return on equity and dividends, there is no significant relationship.

H1: Among the company's cash return on equity and dividends, there is a significant relationship.

This hypothesis using model (2) is estimated on panel data and if the coefficient $\beta_2$ is significant at a confidence level of 95% was approved.

$$\text{DIV}_{it} = \alpha + \beta \text{ROE}_{it} + \varepsilon_{it}$$

$$H_0: \beta = 0$$

$$H_1: \beta \neq 0$$

Table 10. The second hypothesis test results using fixed effects

<table>
<thead>
<tr>
<th>Relation</th>
<th>P-Value</th>
<th>T-statistic</th>
<th>Factor</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>0.0291</td>
<td>1.9806</td>
<td>0.0472</td>
<td>Fixed component</td>
</tr>
<tr>
<td>Positive</td>
<td>0.0485</td>
<td>1.4766</td>
<td>0.0082</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>0.6248</td>
<td></td>
<td></td>
<td></td>
<td>Determining model</td>
</tr>
<tr>
<td>7.6135</td>
<td>0.0000</td>
<td></td>
<td></td>
<td>Statistics</td>
</tr>
<tr>
<td>(P-Value)</td>
<td></td>
<td>(0.0000)</td>
<td>(P-Value)</td>
<td></td>
</tr>
</tbody>
</table>

Reviews significant factors in the results presented in Table 8, since the probability of t-statistic for variable rate of return on equity is less than 0/05 (0.0485), resulting in a significant relationship between return on equity and profit cash stock is confirmed at the level of 95%. The second hypothesis is accepted and can say with 95% confidence between the company's cash return on equity and dividends, there is a significant relationship. The positive coefficient for this variable (0.0082) show a direct relationship between return on equity and dividends is cash so that the increase of 1 unit of return on equity, dividend cash to the 0.0082 unit increases. Thus, according to the analysis made in connection with the second hypothesis can be concluded that the return on equity and cash dividends, there was a significant relationship.

Conclusion
The first hypothesis test results
Reviews significant factors in the results presented in Table 7, since the probability of t-statistic for variable rate of return on assets is less than 0/05 (0.0348), resulting in a significant relationship between return on assets and dividend cash is confirmed at the level of 95%. The first hypothesis is accepted and can say with 95% confidence between return on assets and cash dividends, there is a significant relationship. The positive coefficient for this variable (0.0002) suggests the existence of a direct link between the company's return on assets and cash dividends so that the increase of 1 unit return on assets, cash dividends 0/0002 the company also increase finds. Thus, according to the analysis made in connection with the first hypothesis can be concluded that the return on assets and cash dividends, there was a significant relationship.

The results of the first hypothesis, the presence of a significant relationship between dependent and independent variables to study the relationship between Kevin and Vicki (2008), Dopuch et al. (2012) and Nguyen et al (2010), matches, but the type of connection (direct or photos) with results Chavyn and Hyrschy (2000) related to research and Fayrfyld and yohen (2001) and Krishnan (2003) is in conflict.

The second hypothesis test results
Reviews significant factors in the results presented in Table 7, since the probability of t-statistic for variable rate of return on equity is less than 0/05 (0.0485), resulting in a significant relationship between return on equity and cash dividends at 95% is confirmed. The second hypothesis is accepted and can say with 95% confidence between the company's cash return on equity and dividends, there is a significant relationship. The positive coefficient for this variable (0.0082) show a direct relationship between return on equity and dividends is cash so that the increase of 1 unit return on equity, dividend cash to the 0.0082/0 unit increases. Thus, according to the analysis made in connection with the second hypothesis can be concluded that the return on equity and cash dividends, there was a significant relationship.

The second hypothesis of our research results with research findings Barkley and Zamyrrn (2010), Marcelo and Corus (2006) and Saddles and Jilani (2010) consistent with research findings Richardson (2004) and Grmlych and Sorensen (2004) is in conflict.
Offers
Based on these results, suggestions are provided below:
The Stock Exchange may be due to the results of this study and similar studies more comprehensive information regarding the dividend in cash, publish to shareholders.
Recommended Accounting Standards authorities to disclose optional comprehensive information about the level of cash dividends and return on assets, return on equity, earnings per share, operating profit and economic value added.
According to the results of the first hypothesis proposed research regarding the relationship between return on assets and cash dividends and affecting the company's financial restrictions be done.
According to the results of the second hypothesis is proposed research study in connection with the relationship between equity and efficiency of cash dividends and its influence on the corporate credit rating to be carried out.

References