Research Article
Investigating the Relationship between Asymmetric Information and Dividend Policy in Iranian Industrial Companies

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Abstract: This study aims to examine the relationship between asymmetric information and dividend policy. Today, researchers and economists have divided the capital market into two distinct forms: The first one is the Perfect Competition Market. Since in this form of market, the level of knowledge is equal among the market factors, there is no possibility to benefit from obtaining hidden information. The second type of market is the Imperfect Competition Market in which the market information is not fully available to everyone rather it can be bought and sold like a commodity. Thus, it gives the chance to those who have more knowledge to gain more profits. Thus, considering the lack of an efficient performance of the capital market, the current study intends to investigate whether there is a significant relationship between asymmetric information and dividend policy. To do so, among the various components of information asymmetry index, asymmetric information is considered as the difference between forecasted earnings and dividends paid to shareholders in the present study. Among the most influential cases affecting stock dividend policy, the index proposed by Fama and French (2001) is used in this study. Basically, the index includes cases such as the firm size, firm risk, profitability and the percentage of dividend and the ratio of market value to book value.

Keywords: Asymmetric information, capital market, dividend policy

INTRODUCTION

The stock dividend has been always a challenging concept for economists, financial analysts and other investors. According to Miller and Modigliani (1961), in a perfect competition market due to asymmetric information between active individuals in the capital market, the ways the companies' stock interest are divided is clearly determined. Moreover, the division has no effect on the price of stock trading unit. However, the today world markets particularly in Iran are markets in which the amount of information is not available for public. Thus, investors usually face an imperfect competition market. Consequently, the investors who are more informed will probably gain the higher profits. As a result, this issue regardless of dividing or non-dividing a company's earnings, might have the greatest influence on the company's stock price fluctuation. Considering this issue, economic thinkers such as Allen *et al*. (2000) presented various theories about the behavior of a stock dividend; among which the theory of dividend signaling is known as the most prominent one. Based on the model, the stock dividend signaling is applied as a signal to reduce the level of asymmetric information in the capital market. However, this theory could not have a major impact on the reduction of the level of asymmetric information and company own people including the managers, who possess important information is likely to make more profit from the trading of stock dividend than other investors. Therefore, to find out the pivotal role of information asymmetry on dividend policy, this study examines whether there is relationship between asymmetric information and dividend policy.

Definition of terms:

Asymmetric information: Means that the seller possesses more information about the traded goods than the buyer.

Firm size: Is determined by several parameters including the sales value, the assets value and the stock market value.

Profitability ratios: Represent the collective effects of liquidity, asset management and debt management on the operating results.

Non-systematic risk: Is the risk arising from the company specific characteristics such as product type, capital structure, the major shareholders and etc.

Ratio of market value to book value: Is displayed as M/B and represents percentage of the increase of market price to book or historical value.

Scope of the study: The purpose of this study is to provide evidence on the relationship between asymmetric information and dividend policy of industrial companies listed in Tehran Stock Exchange. In so doing, the following territories are applied:

- **Scope of the research topic:** Includes the research format and foundation which examines asymmetric information and deals with variables such as the firm size.
- **Spatial scope of the research:** Is the area of the study including companies listed on the Stock Exchange.
- **Temporal scope of the research:** Encompasses information of firms listed in Tehran Stock Exchange for the five years from 2005 to 2009.

Research hypotheses and variables: In this study, there is one main hypothesis and five sub-hypotheses presented as follows:

- There is a significant relationship between asymmetric information and dividend policy:
  o There is a significant relationship between asymmetric information and the company M/B ratio.
  o There is a significant relationship between asymmetric information and the company risk.
  o There is a significant relationship between asymmetric information and the firm size.
  o There is a significant relationship between asymmetric information and the percentage of dividend.
  o There is a significant relationship between asymmetric information and the relative profitability ratios.

Accordingly, the following variables are used to examine the above mentioned hypotheses:

- **Profitability ratios:**

$$\text{Profitability Ratios} = \frac{\text{Financial Cost}}{\text{Net Profit of Total Assets}}$$

- **M/B ratio:**

$$\text{M/B} = \frac{\text{The Market Value of Total Assets}}{\text{The Book Value of Total Assets}}$$

In the current study, to calculate the firm size based on different available interpretations, the market

value of assets is performed. Moreover, Rahavard Software is used to discriminate the market risk from non-systematic derived risk.

- **Percentage of dividend:**

$$\text{Percentage of Dividend} = \frac{\text{Dividend}}{\text{Net Profit}}$$

In this study, the difference between Earning Per Share (EPS) and Dividends Per Share (DPS), as indicators of asymmetric information is achieved through Tadbirpardaz Software and World Economy Newspaper archive. Thus, in the current project, asymmetric information (difference between DPS and EPS) used in the main hypothesis is the dependent variable and other variables are considered as the independent variable.

LITERATURE REVIEW

The last three decades have witnessed the regular and methodical effects of accounting information on price and stock return. Diamond (1985) and Diamond and Verrecchia (1991) noted that high quality of accounting information disclosure reduces the information risk (information asymmetry) between market participants in financial markets and as a consequence, reduces the cost of equity. Lang and Lundholm (1996), Botosan (1997), Botosan and Plumlee (2002) and Easley *et al.* (2002) empirically examined and supported this conjecture. Watts and Zimmerman (1986) advocated the most significant reason for establishing regulations and standards for accounting information disclosure is reducing the information asymmetry between management and external users particularly investors.

Dividend policy has been addressed in numerous studies. However, few studies investigated the relationship between asymmetric information and dividend policy. In the following section, the background of the study and the previous researches has been summarized. Li and Zhao (2008) in their study named "The relationship between institutions dividend policy and the quality of information environment", the deviation of profit forecasted by analysts and the profit belonged to per share are considered as the information asymmetry index. Moreover, Signaling Theory (Spence, 2002) has been used as a condition for the measurement. It should be mentioned that this model has been employed from 1983 to 2003 and Computerized Data Bank I/B/E/S was used for the data collection. Dewenter and Warther (1998) in their study entitled "dividends, asymmetric information and agency conflicts", examined the ways which companies own people take advantage of the asymmetric information. They classified the company own persons into the managers, administrative managers, treasury managers, board of directors, chief executive and chief financial.

Jiang and Kim (2000) investigated the effects of managers and shareholders information asymmetry on the profitability regarding time and value. The result of their study revealed that the more the level of institutional ownership in the Japanese companies is increase, the lower information asymmetry between managers and other relevant parties will be on the market. Some scholars believe that investors of large institutions are likely to transfer the confidential information acquired from their managers to the other shareholders. However, such monitoring is not acceptable unless the major shareholders maintain their investment for a long time and have enough stock to lessen the problems and to make this monitoring free for the other shareholders.

SAMPLE SELECTION AND RESEARCH METHODS

Generally, the participants of this study are all companies listed in Tehran Stock Exchange which considering the limitations of the balance sheet issued on 29/12/ their total number initially was 225. However, due to the limitation of service indicators, 9 of them have been removed. Thus, the remaining 216 companies were the population of the present study.

In this study, sampling has been done using Cochran formula shown in the following. Based on this technique, the sample size should be about 52, however, in this study; to enhance the reliability, 90 companies have been selected to attend the study:

$$n \geq \frac{N \times Z_{\frac{\alpha}{2}}^2 \times p \times (1-p)}{(N-1) \times \varepsilon^2 + Z_{\frac{\alpha}{2}}^2 \times P \times (1-p)}$$

$$n \geq \frac{216 \times (1.64)^2 \times 0.05 \times (1-0.5)}{(215) \times (0.1)^2 + (1.64)^2 \times 0.5 \times (1-0.5)} = 51/46 \approx 52$$

$$n = 52$$

where,
n = Number of sample
N = Number of population
a = Probability of type I error
P = Success ratio in establishing research hypotheses
1-p = Failure ratio in establishing research hypotheses
ε = Acceptable variations in reporting

The companies' relative data has been collected in the Tehran Stock Exchange library using the Tadbirpardaz Software. It should be mentioned that since accessing to the whole data through the relative software was not possible, the required data has been gathered through referring directly to the sample companies and reviewing their financial statements and appendix notes.
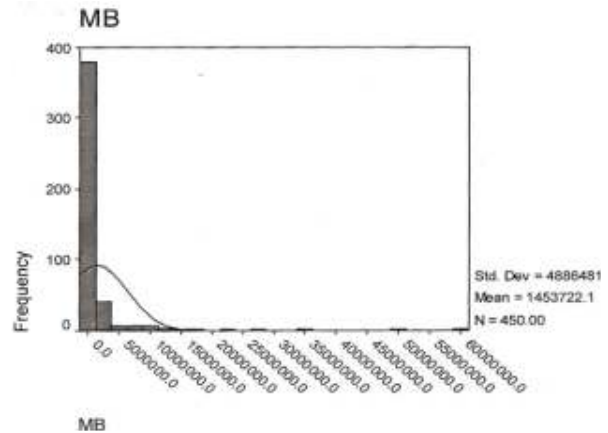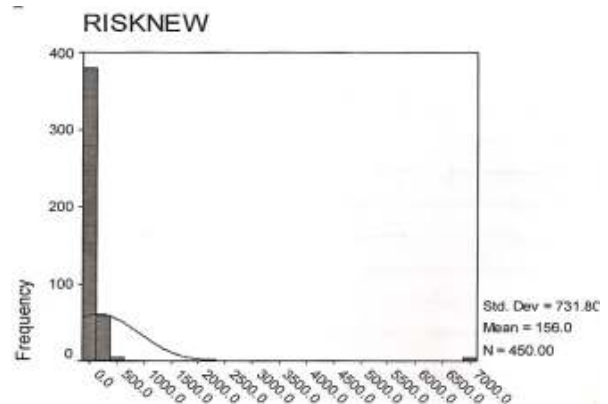

Fig. 1: Histogram related to M/B

Fig. 2: Histogram related to market risk

After gathering data, the data transferred to the computer and was analyzed using SPSS software. In addition, descriptive and inferential statistical methods were used to analyze data. Moreover, Mean, Median and Standard Deviation are used to describe data. Further, Pearson correlation and regression analysis were used to investigate the relationship between variables of the main hypotheses.

DATA ANALYSIS AND TESTING HYPOTHESES

Data analysis and testing sub-hypotheses: Figure 1 shows the histogram Related to M/B. With regard to the first sub-hypothesis: the result of Pearson correlation coefficients in Table 1 reveals that there is a Significant relationship between asymmetric information and the company M/B ratio (r = 0/574, p = 0/0001).

Figure 2 presents the histogram Related to market risk. With respect to the second sub-hypothesis: the result of Pearson correlation coefficients in Table 2 illustrates that there is a significant relationship between asymmetric information and the company risk (r = 0/324, p = 0/0001).
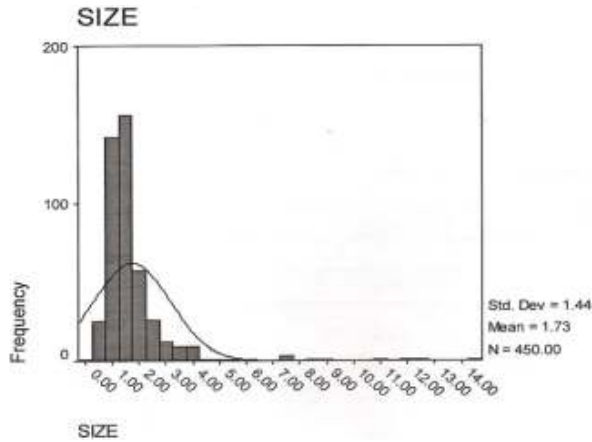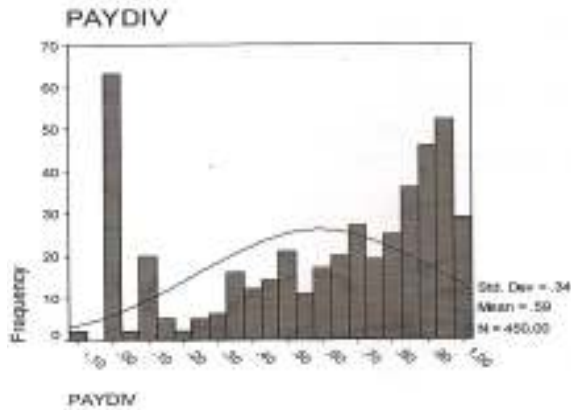
Fig. 3: Histogram related to firm size
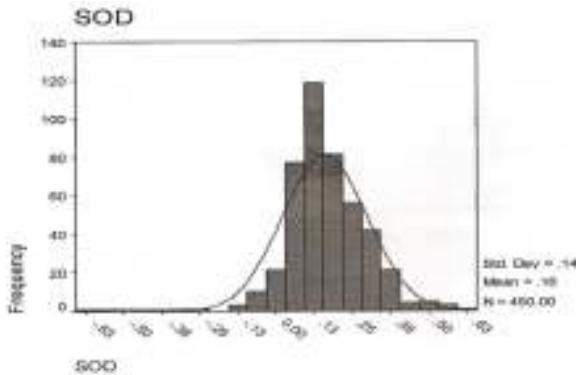

Fig. 4: Histogram related to dividend

Fig. 5: Histogram related to profitability

Table 1: Correlation between asymmetric information and the company M/B ratio

Variable	Coefficient	Sig.	Result of H_0
M/B ratio	0/574	0/0001	H_0 is rejected

Table 2: Correlation between asymmetric information and market risk

Variable	Coefficient	Sig.	Result of H_0
Market risk	0/324	0/0001	H_0 is rejected

Table 3: Correlation between asymmetric information and firm size

Variable	Coefficient	Sig.	Result of H_0
Firm size	0/025	0/59	H_0 is accepted

Table 4: Correlation between asymmetric information and dividend

Variable	Coefficient	Sig.	Result of H_0
Dividend	-0/121	0/011	H_0 is rejected

Table 5: Correlation between asymmetric information and profitability

Variable	Coefficient	Sig.	Result of H_0
Profitability	-0/077	0/101	H_0 is accepted

there is significant negative relationship between asymmetric information and percentage of Dividend (r = -0/121, p = 0/011).

Figure 5 indicates the histogram related to profitability. With regard to the fifth sub-hypothesis: the result of Pearson correlation coefficients in Table 5 presents that there is no significant relationship between asymmetric information and the relative profitability ratios (r = -0/077, p = 0/101).

Data analysis and testing main hypotheses: The main research question of this study is: Is there a significant correlation coefficient between asymmetric information and dividend policy?

To answer the above question, regression analysis was applied (Table 6 and 7). Initially, the results reveal that three components of dividend policy have a meaningful relationship with asymmetric information. However, on the other hand, the five components of dividend policy are correlated with each other. Accordingly, regression analysis is used to identify the predictors.

As indicated by the results in Table 6, the F value obtained from regression analysis is 54/869 and the significance level is 0/0001 showing the regression is quite reliable. Considering the value of R^2, which is equal to 0/382, asymmetric information is determined by dividend policy from the total variance.

Considering the t values obtained for each variable of dividend policy and their level of significance shown in the (Table 7), the ratio of the M/B and the company risk is significant in the regression. Therefore, the regression equation (which shows the relationship between asymmetric information and dividend policy) for the asymmetric information could be proposed as follow:

Figure 3 indicates the histogram related to firm size. With regard to the third sub-hypothesis: the result of Pearson correlation coefficients in Table 3 shows that there is no significant relationship between asymmetric information and firm size (r = 0/025, p = 0/059).

Figure 4 shows the histogram related to dividend. With respect to the fourth sub-hypothesis: the result of Pearson correlation coefficients in Table 4 reveals that

Table 6: Result of regression analysis

Model	S.S.	df	M.S.	F-value	Sig. (p-value)	R^2
Regression	$9/9 \times 10^{12}$	5	2×10^{12}	54/869	0/0001	0/382
Residual	$1/6 \times 10^{13}$	444	$3/6 \times 10^{10}$			
Total	$2/6 \times 10^{13}$	449				

Table 7: Regression analysis of asymmetric information based on dividend policy

Variable	β coefficient	t	Sig.
Intercept	-	1/484	0/138
Firm size	0/015	0/386	0/7
M/B ratio	0/528	13/6833	0/0001
Profitability	-0/076	-1/725	0/085
Percentage of dividend	-0/065	-1/501	0/134
Company risk	0/199	8/189	0/0001

Asymmetric information = (0.015 × Firm size) + (0.528 × M/B ratio) - (0.076 × Profitability) - (0.065 × percentage of Dividend) + (0.199 × Company risk).

Hence, based on the results, regression analysis is significant to predict asymmetric information. Moreover, asymmetric information is correlated with the components of dividend policy. Consequently, the main hypothesis of this study is confirmed.

CONCLUSION AND RECOMMENDATIONS

Considering the results of this study, it could be concluded that most information of the companies is not provided homogeneously and uniformly among the users, which this factor affects dividend policies and the amount of companies' obtained profits in short-term period and their stock value in long-term period.

From the discussion so far, asymmetric information investigated through identifying the difference between Earning Per Share (EPS) and Dividends Per Share (DPS), which the findings revealed that, based on this index, the amount of difference in stock market is significantly high. This fact demonstrates that the capital market is inefficient. In addition, the relationship between asymmetric information and factors effecting on dividend policy such as firm size, profitability ratios, non-systematic risk, the ratio of market value to book value and dividend is established in the present study. This suggests that companies do not provide enough information to the capital markets and this causes that insider people of companies obtain more profit from buying and selling shares and ultimately they might gain more profit from the dividing the company's profits. Therefore, investors in the market and those who plan to buy shares or any stock need to consider the factors affecting the company in the stock dividend policy so that they can obtain better benefit from their own resources and not to lose interest in the capital market.

To forecast earnings per share, financial analysts should have more attention to a company's sustainability based on the economical status of the company and reducing or increasing the company capital so they can offer more reasonable contribution to their stakeholders and agencies through a better analysis of the predicted interest of per share.

Based on the findings of the present study, the following recommendations are provided to improve the capital market:

- Recommendations based on the findings of the main hypotheses:
- Information of companies need to be provided timely and transparent and essential controls need to be imposed so that stocks of companies with false information to confuse investors are prevented.
- New investors, who wish to invest in the stock market, should become familiar with the components affecting stock prices and dividends. Further, with no hesitation in buying stocks, they should know the capital market in order to gain additional profits.
- Due to inefficient market, it is suggested that current investors who are active in the capital market to constantly seek information so that in this way they do not become out of market cycle in competing with others to gain more interests.
- Recommendations based on the findings of the sub-hypotheses:
- **The result of the first and fifth sub-hypotheses:** Suggest that the Stock Exchange as a supervisory authority over listed companies in the capital market, should take essential step in providing the investors with useful and timely information so that they could take advantage from the information obtained from previous years by carefully analyzing prior to making decision.
- **The result of the second sub-hypothesis:** Suggest to the investors to join the shareholders institutional combination in order to gain further profits. The reason is that since they are considered as institutional shareholders, they would probably be more successful in gaining useful and timely information than the individual investors; as result, the investment risk might be minimized.

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