

Examining the effect of institutional shareholders and free cash flow on cash dividends in companies listed in Tehran Stock Exchange

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Abstract

The goal of this study is to examine the influence of institutional shareholders and free cash flow on cash dividends. In order to achieve this goal, 125 companies listed in Tehran Stock Exchange during 2010-2014 were examined. Multivariate regression of least squares method along panel data were used to test the hypotheses. The results show that there is a significant positive relationship between the percentage of institutional investors and free cash flow with cash dividend, meaning that with increase in the percentage of institutional shareholders' ownership as well as free cash flow, willingness to pay dividend increases.

Key Words: cash dividends, free cash flow, institutional shareholders, dividend, ownership structure

Introduction

Different models have been used to explain the dividend policy in financial literature. Messaging pattern, considered as one of the important patterns in financial discussions, shows that managers, compared to the outsiders to the organization, have more information about the companies' future cash flows and have the required incentive to transmit this information to other people and users of financial information. According to this concept, unexpected changes in dividend policy are used as a means to reduce information asymmetry between managers and owners. Dividend discussion is also debatable from agency theory perspective. In agency model, dividend policy is used as a means for aligning the interests of managers and shareholders, because by paying dividends to shareholders, on one hand, free cash flows and the possibility of investment in non-optimal investment projects reduce. Moreover, on the other hand, managers are subject to ongoing monitoring by the capital market (Rouhi et al., 2011).

The motivation of institutional investors in regulatory activities obliges this group of investors to be unwilling about direct supervision by themselves. Instead of direct supervision, these investors make companies increase their dividends. In other words, institutional investors prefer free cash flows to be distributed in the form of dividend to decrease agency costs of free cash flow.

According to agency theory, in the case of a conflict of interest between managers and shareholders, regular dividend payments can reduce agency conflicts and thus, the possible range of misuse of resources by management decreases. According to these assumptions and considering that retained earnings are a source of internal financing, dividend payments oblige companies to resort to external or internal capital markets whenever financing is needed. This imposes monitoring of the capital markets on the company.

The role of institutional investors in this assumption arises from the preferences of institutional investors considering the distribution of cash flows to reduce agency costs. According to the influential position of institutional investors, it is expected that this group of owners influence the company's financial policies, including dividend policy. Accordingly, institutional owners might oppose managers' tendency for further accumulation of cash flows, and according to their voting power force managers to pay dividend (Setayesh and Kazemnezhad, 2012). Thus, considering the above point, this study tries to study if institutional shareholders and free cash flow affect cash dividends.

Theoretical issues and empirical research

The issue of free cash flow is one of the subjects that have attracted the attention of many people, including managers and investors. In fact, they face many doubts whether to divide cash flow as dividends or to invest in other projects. The existence of consensus on the definition and calculation of free cash flow seem beneficial in improving and regulating report, interim and annual statements, and finding reagents and free cash flow of companies, because these funds are referred to as an essential tool for real assessment of investments and as an evaluation criterion of debt repayment power.

Hansen (1986) defines free cash flow as an after-tax operating profit plus non-cash costs after deducting investment in working capital, property, machinery, equipment, and other assets. Others believed that free cash flow is the cash flow in excess of what is required to finance all projects with positive net present value discounted with the rate of cost of capital (Rasaiian et al, 2010). Alternatively, free cash flow is the funds that remain after payment obligations and paying the necessary payments for

providing activities such as dividends, repaying debts, and reinvestment in order to maintain operational activities in the company (Rezvani Raaz and Haghighat, 2005).

Conflicts of interest between shareholders and managers regarding dividend payment policies, especially when organizations have significant free cash flow, are more. The problem is how one can make managers pay dividends instead of investment or extravagance in the use of free cash flow. Payment to shareholders reduces managers' power and on the other hand, it may cause them to go under control in the case of need to raise capital for capital markets, while domestic financing enables managers to avoid this surveillance. Moreover, if the managers distribute free cash flows rather than low-yielding investment projects, it causes them to decide how to use future cash flows, because if they do not pay dividends in the future, their price of the shares will drastically reduce (Jensen and Meckling, 1976).

Based on the theory of free cash flow, managers have incentives to accumulate cash to increase the resources under their control, in order to have power of judging and recognition about investment decisions of the company. For this reason, they act with the cash of companies so that they do not have to provide detailed information on the capital market, but managers may make investments that have negative effects on shareholders' wealth (Ferreira and Viliala, 2004).

In corporate governance literature, institutional investors are seen as one of the external mechanisms effective in the control of the company. This group of capital market activists, considering possessing the required knowledge and expertise and through access to effective communication channels can play a fundamental role in promoting corporate governance system and thus increase the efficiency and productivity of the company (Rahmanseresht and Mazloumi, 2005, 89).

Many groups have influence over corporate governance. Here, shareholders, especially institutional shareholders, play an important role. From theoretical perspective, the institutional investors' status in corporate governance is very complex. From one perspective, institutional investors represent another mechanism of powerful corporate governance that can monitor the company's management, as they can have a significant influence on company's management and can align the interests of management with the interests of shareholders. The means by which shareholders can generally oversee management are introduced within the framework of agency theory. Every day, the importance of the supervisory role of institutional investors increases, because they have become great and influential, and at the same time have gained considerable concentration of

ownership. However, in the literature of corporate governance, ownership concentration is considered as an important mechanism that controls agency problems and improves protection of investors' interests (Shalifer and Vishany, 1997). Nevertheless, such concentration could also have negative effects, such as access to confidential information, which brings about information asymmetry between them and the smaller shareholders.

The motivation of institutional investors in regulatory activities obliges this group of investors to be unwilling about direct supervision by themselves. Instead of direct supervision, these investors make companies increase their dividends. In other words, institutional investors prefer free cash flows to be distributed in the form of dividend to decrease agency costs of free cash flow. According to agency theory, in the case of a conflict of interest between managers and shareholders, regular dividend payments can reduce agency conflicts and thus, the possible range of misuse of resources by management decreases. According to these assumptions and considering that retained earnings are a source of internal financing, dividend payments oblige companies to resort to external or internal capital markets whenever financing is needed. This imposes monitoring of the capital markets on the company.

The role of institutional investors in this assumption arises from the preferences of institutional investors considering the distribution of cash flows to reduce agency costs. According to the influential position of institutional investors, it is expected that this group of owners influence the company's financial policies, including dividend policy. Accordingly, institutional owners might oppose managers' tendency for further accumulation of cash flows, and according to their voting power force managers to pay dividend (Setayesh and Kazemnezhad, 2012). In this regard, various studies are conducted outlined below.

Etemadi et al. (2014) examined the main theories of dividend with an emphasis on the role of institutional shareholders and concluded that there is a negative and significant relationship between dividend policy and external financial dependence. Moreover, dividend policy in the companies with many institutional investors, compared to companies with low percentage of institutional investors, indicates less sensitivity to information asymmetry and external financial dependence. Kamyabi et al. (2014) examined the relationship between cash flow volatility and sensitivity of cash flows-cash paid and dividend policy. They showed that there is no significant relationship between the volatility of cash flow and dividend policy.

Biabani and Razi Kazemi (2013) examined and compared dividend policy in different ownerships structure, regarding shareholding compound and concentration of ownership separately. The results showed that companies do not generally follow a specific dividend policy and mostly act according to a random walk model. Moreover, they showed that companies with institutional ownership, compared to corporate ownership, management, and actual shareholders distribute more earnings among their shareholders. In addition, concentration or dispersion of ownership had no difference in the dividend. Pouraqajan and Golami (2013) examined the impact of life cycle and free cash flow on dividend policy in steel, automotive, and pharmaceutical industries. They showed that large and profitable companies with high free cash flow and retained earnings are more willing to pay dividends. Moreover, companies with high growth opportunities, tend to pay less return rate on dividends but more share. Etemadi and Ahmadian (2013) examined the impact of the type of the greatest shareholder on dividend policy. The results showed that dividend policy in companies where the greatest shareholders are internal or governmental is positively affected by their ownership. While in the companies where the largest shareholders are in form of financial or holding, dividend is not affected by the kind of ownership. Moreover, the findings indicated that considering the various types of the largest shareholders, internal stakeholders adopt lower dividend policy and prefer retained earnings to dividend policy. Asadi and Nikravesh (2012) examined the relationship between the assumption of free cash flow and life-cycle theory with dividend policy. The results showed no significant correlation between dividend and free cash flow of the investigated companies. Rouhi et al. (2011) studied the effect of corporate governance mechanisms like ownership structure and composition of the board on dividend policy. The results showed that ownership concentration has a significant negative relationship with the dividend policy. Moreover, there was no significant relationship between the percentage of institutional ownership, managerial ownership percentage, the percentage of family ownership, board independence, and dividend. Sadeghi Sharif and Bahadori (2009) examined the impact of ownership structure (including the ownership of the largest shareholder, five major shareholders of institutional ownership) on dividend ratio. Results confirmed the impact of shareholders' being institutional on the company's dividend ratio. This means as institutional ownership in a company is more it brings about the increase in dividend over time.

Liang and Gan (2015) examined the impact of institutional shareholders and free cash flow on cash dividends in the companies listed in Shanghai Stock

Exchange China. The results showed a positive and significant correlation between institutional shareholders and free cash flows with cash dividends. Hussain and Khan (2014) examined the impact of institutional ownership on dividend policy in 104 companies listed on the stock exchange in Pakistan. Results showed a significant positive relationship between institutional ownership and dividend policy. Sindhu et al. (2014) explored the relationship between free cash flow and cash dividends taking into account the moderating role of firm size companies listed on the stock exchange in Pakistan. The results showed a positive significant relationship between free cash flow and cash dividends, but the firm size does not have a moderating role. Cheng et al. (2014) examined the impact of free cash flow and growth opportunities on cash dividends in companies listed on the Stock Exchange in China. The results showed a significant positive relationship between free cash flow and growth opportunities with cash dividend. Crane et al. (2012) examined the impact of institutional shareholders on dividend policy in companies listed in Russia Stock Exchange. Results showed a significant positive relationship between institutional ownership and dividend policy.

According to theoretical and empirical studies, research hypotheses have been proposed as follows:

First hypothesis: there is a significant positive relationship between the percentage of institutional shareholders and cash dividends.

The second hypothesis: there is a significant positive relationship between free cash flow and cash dividends.

Research Methodology

Considering the purpose, the present study is applied, and regarding data collection, it is post-hoc descriptive. Post-hoc studies refers to the ones in which the researcher examines the probable cause considering the dependent variable (Sarmad et al., 1997, 100). In this study, regression analysis is used to test the hypotheses. To collect the required data, the audited financial statements and accompanying notes have been used. In doing so, the official website of the Tehran Stock Exchange Company and Rahavard-e-Novin Software are used. After data collection and preliminary processing by spreadsheets software, statistical analyses concerning testing the hypotheses are done by econometric program Eviews 8.

Research model

According to the research hypotheses, to test the first and second hypotheses, respectively, models 1 and 2 are used as follows:

$$\begin{aligned}
 DIV_{it} = \beta_0 + \beta_1 Inst_{it} & \quad \text{Model} \\
 + \beta_2 Tobin - Q_{it} & \quad 1 \\
 + \beta_3 Lev_{it} & \\
 + \beta_4 Size_{it} & \\
 + \beta_5 ROE_{it} + \varepsilon_{it} &
 \end{aligned}$$

$$\begin{aligned}
 DIV_{it} = \beta_0 + \beta_1 FCF_{it} & \quad \text{Model} \\
 + \beta_2 Tobin - Q_{it} & \quad 2 \\
 + \beta_3 Lev_{it} & \\
 + \beta_4 Size_{it} & \\
 + \beta_5 ROE_{it} + \varepsilon_{it} &
 \end{aligned}$$

In the above model:

DIV_{it} is cash dividends for the company i in year t.

FCF_{it} is free cash flow for the company i in year t.

$Inst_{it}$ is the percentage of institutional shareholders for the company i in year t.

$Tobin - Q_{it}$ is the growth opportunities for the company i in year t.

Lev_{it} is leverage for company i in year t.

$Size_{it}$ is the size of the company for the company i in year t.

ROE_{it} is profitability for the company i in year t.

β_0 is the constant value for company i in year t.

$\varepsilon_{i,t}$ is the residual or error of regression model.

The above model shows a multiple regression model with panel data tested that is with least squares method.

Variables

The dependent variable

In this study, cash dividend is considered as the dependent variable, and its calculation is shown below:

Cash dividends (DIV): the result of dividing cash dividends by the number of ordinary shares published.

Independent variable

The independent variables are, respectively, the percentage of institutional shareholders and free cash flow the calculation method of which is as follows:

1. **Percentage of institutional shareholders (Inst):** the percentage of shares that institutional shareholders (including banks and financial and investment companies) possess proportional to the total shares of the company.
2. **Free cash flow (FCF):** The method of calculating free cash flow (FCF) is as follows:

$$FCF_{i,t} = \frac{INC_{i,t} - DEPR_{i,t} - TAX_{i,t} - INTEXP_{i,t} - OSDIV_{i,t}}{TA_{i,t-1}}$$

Where:

$FCF_{i,t}$: Free cash flow

$INC_{i,t}$: Operating profit before deducing financial charges

$DEPR_{i,t}$: Depreciation costs

$TAX_{i,t}$: Taxes

$INTEXP_{i,t}$: Financial expenses (interest)

$OSDIV_{i,t}$: Ordinary share dividends paid

$TA_{i,t-1}$: Total assets are in the first period

Control variable

In one study, the effect of all variables on each other cannot be studied at the same time. Therefore, the researcher controls the effect of some variables, keeps them constant, or neutralizes them (Sarmad et al., 1997, 44).

In this study, control variables are:

1. **Firm size (SIZE):** it is calculated as the natural logarithm of total assets.
2. **Company growth opportunities (Tobin-Q):** the following equation is used to calculate this:

$$Tobin - Q = \frac{\text{shareholders' equity} + \text{total debt}}{\text{total assets}}$$
3. **Financial leverage (Lev):** the result of total debt divided by total assets.
4. **Profitability (ROE):** is the quotient of net profit on equity.

Population and sample

Population includes all companies listed in Tehran Stock Exchange having the following qualifications:

1. The companies accepted in Tehran Stock Exchange before 2010, their shares are traded in the Tehran Stock Exchange Trading until March 2014 and without trade suspension more than three months in this period. In addition, the end of their fiscal year should be March 20 to retain the comparability of financial information.
2. They should not be among industrial complexes of banks, credit institutions and other financial institutions, and financial intermediaries and financial investments, as their activity is different from other industries.

3. The companies that have the financial information required for each study for the period 2010-2014 available.

Given the above conditions, the number of companies forming the available population is 184. Cochran sampling was used to select the sample, where finally, 125 companies were chosen and tested.

Findings

Descriptive Statistics

Descriptive statistics deals with the description of the population, and its purpose is calculating the parameters of the population. Values offered include mean, median, maximum, minimum, and standard deviation given in Table 1.

Table 1: Descriptive statistics of the data

Variable	Symbol	Mean	Median	Maximum	Minimum	Standard deviation
Cash dividend	DIV	643.57	250.00	9000.00	0.00	1054.01
Percentage of institutional shareholders	INST	0.33	0.20	0.99	0.00	0.31
Free cash flow	FCF	0.004	0.003	0.380	-0.295	0.115
Growth opportunities	TOBIN-Q	1.48	1.28	4.15	0.67	0.64
Financial Leverage	LEV	0.61	0.62	1.07	0.09	0.21
Size of the company	SIZE	13.80	13.69	18.45	10.03	1.31
Profitability	ROE	0.26	0.27	0.81	-0.49	0.26

Studied companies are 125 companies that based on company-year (2010-2014) have been observed as 625. As is seen, on average, the studied companies divide more than 600 riyals cash dividend. In addition, there are companies that have high cash dividend like 9000 riyals and also the companies that do not share dividends at all. The average 33% of the institutional shareholders shows that 33% of shareholders of the companies studied are institutional investors, and even in some companies, the average percent of institutional shareholders reaches 99% and institutional shareholders manage these companies in fact.

On the contrary, there are companies without any institutional investors in their shareholders. The average of ratio of free cash flow in the studied companies is 0.004 that seem a small amount. Growth opportunities, financial leverage, and profitability seem good. The size of the firms studied regarding the average (13.80) is maximum

Table 2: Chow (Limer) and Hausman test results

Research models	Tests	Test statistic	Sig	Test result
Model (1)	Chow test (FLeamer)	9.367811	0.0000	Fixed effects model
	Hausman test	106.513813	0.0000	Fixed effects model
Model (2)	Chow test (FLeamer)	9.928892	0.0000	Fixed effects model
	Hausman test	129.203035	0.0000	Fixed effects model

18.45, and minimum 10.03 that is in a good range and no large differences are observed in size of the studied companies.

Testing the hypotheses and results

Before testing the hypotheses, Chow and Hausman tests are examined to select the best model, and its results are shown in Table 2

The results show that for both models of research, fixed effects model is the best model. In other words, Chow test result represents the preferability of fixed effects model to cumulative model, and Hausman test result shows the preferability of fixed effects model to the random effects model.

The result of testing each hypothesis is presented and the results are expressed. For studying the goodness of the fit, the coefficient of determination and adjusted coefficient of determination are used, and for the significance of the regression model, f statistic Fisher, and for studying the significance of the coefficient of the independent variables in each model, the t-student statistic at 95% level of confidence are used. Cases where the critical value for f statistic Fisher test and the t student statistic is less than 0.05 show the significance of the overall regression model and coefficients of t-student statistic. Durbin-Watson test is used to evaluate the autocorrelation problem of the first order in the residuals. Moreover, variance inflation factor (VIF) test is used to check the issue of co-linearity, and Arch test is used to check the homogeneity of variance.

The results of testing the first research hypothesis are provided in Table 3:

Table 3: Results of regression model test of the first hypothesis

$DIV_{it} = \beta_0 + \beta_1 Inst_{it} + \beta_2 Tobin - Q_{it} + \beta_3 Lev_{it} + \beta_4 Size_{it} + \beta_5 ROE_{it} + \varepsilon_{it}$						
Dependent variable: cash dividends (DIV)						
Independent and control variables	Symbol	Coefficient	t student statistic (t)	Sig	VIF	Result
Intercept	β_0	3152.541	-2.542387	0.0113	-	-
Percentage of institutional shareholders	<i>Inst</i>	267.2304	2.644915	0.0084	1.06	Confirmed
Growth opportunities	<i>Tobin - Q</i>	169.8189	3.348116	0.0193	1.27	Confirmed
Financial Leverage	<i>Lev</i>	616.2329	-3.488705	0.0005	1.14	Confirmed
Size of the company	<i>Size</i>	268.7307	2.972429	0.0031	1.09	Confirmed
Profitability	<i>ROE</i>	461.2178	4.098317	0.0000	1.23	Confirmed
The coefficient of determination (R ²)	0.820525	Durbin - Watson (D-W)		1.718230		
Adjusted coefficient of determination (Adj.R ²)	0.773753	F statistic		17.54302 (0.0000)		
Chi-Square statistic	0.0000751	Chi square (Significance level)		(0.9931)		

As is seen in Table 3, the coefficient of determination is 0.820525 and adjusted coefficient of determination is 0.773753 meaning that the explanatory power and the fit of the model are desirable. The Arch test (chi-square) statistic and its probability are 0.9931 and 0.0000751 respectively, and as the probability is more than 0.05, the assumption of homogeneity of variances is accepted. Therefore, the variances are homogenous, and the models have been estimated using the ordinary least squares (OLS) model. Durbin-Watson is equal to 1.718230, and considering range of 1.5 to 2.5 is the confidence interval of the lack of autocorrelation between the errors of the model, so the first order autocorrelation does not exist in the model error. VIF value for the independent variables is less than the accepted value (10), so there is no co-linearity between the independent variables. Finally, the F statistic is 17.54302 and its probability value is 0.0000, and as probability is less than 0.05, the model is confirmed.

As is seen in Table 3, the coefficient value, statistics of t student (t), and significance level for institutional shareholders percent are, respectively, 267.2304, 2.644915, and 0.0084. As the significance level is less than 0.05, the null hypothesis is rejected and the alternative hypothesis stating the significant positive relationship between the percentage of institutional ownership and cash dividend is accepted. This means as the percentage of institutional shareholders is more; their interest

for cash dividends will be greater. Thus, the first hypothesis is confirmed.

The result of the second hypothesis is presented in Table 4. As shown in Table (4), the coefficient of determination is 0.823521, adjusted coefficient of determination is 0.777529, and this means that, the explanatory power and the fit of the model are desirable. The Arch test (chi square) value and its probability are respectively 0.5442 and 0.367811, and since the probability is more than 0.05, thus the homogeneity of variances is accepted. Thus, the variances are homogenous and have been estimated using ordinary least squares (OLS) model. Durbin-Watson is equal to 1.717064, which indicates the absence of autocorrelation of the first order in error component of the model. VIF value for the independent variables is less than the accepted value (10), so there is no co-linearity between the independent variables. Finally, the F statistic is 17.90594 and its probability value is 0.0000, and as probability is less than 0.05, the significance of the model is confirmed.

Table 4: Results of regression model test of the second hypothesis

$DIV_{it} = \beta_0 + \beta_1 FCF_{it} + \beta_2 Tobin - Q_{it} + \beta_3 Lev_{it} + \beta_4 Size_{it} + \beta_5 ROE_{it} + \varepsilon_{it}$						
Dependent variable: cash dividends (DIV)						
Independent and control variables	Symbol	Coefficient	t student statistic (t)	Sig	VIF	Result
Intercept	β_0	2220.488	-2.715407	0.0069	-	-
Free cash flow	<i>FCF</i>	894.7042	2.354992	0.0189	1.34	Confirmed
Growth opportunities	<i>Tobin - Q</i>	146.8489	2.315825	0.0210	1.27	Confirmed
Financial Leverage	<i>Lev</i>	468.2579	-3.730701	0.0002	1.27	Confirmed
Size of the company	<i>Size</i>	204.8589	3.463980	0.0006	1.08	Confirmed
Profitability	<i>ROE</i>	376.6043	2.381076	0.0176	1.34	Confirmed
The coefficient of determination (R ²)	0.823521	Durbin - Watson (D-W)		1.717064		
Adjusted coefficient of determination (Adj.R ²)	0.777529	F statistic		17.90594 (0.0000)		
Chi-Square statistic	0.367811	Chi-Square (Significance level)		(0.5442)		

According to Table 4, the coefficient of t student (t) statistics and significance level of free cash flow are, respectively, 0.0189, 2.354992, and 894.7042. Since the significance level is less than 0.05, the null hypothesis is rejected and the alternative hypothesis stating the significant positive relationship between free cash and cash dividend is accepted. This means as free cash flow is more; their willingness for cash dividends will be greater. Thus, the second hypothesis is confirmed.

Conclusion

The objective of this study is to investigate the effect of institutional shareholders and free cash flow on cash dividends. To achieve this goal, 125 companies

listed in Tehran Stock Exchange during 2010-2014 were studied. Multivariate regression with least squares method along panel data were used to test the hypotheses. The results show a significant positive relationship between institutional investors and free cash flow with cash dividend, meaning that by increase in the percentage of institutional shareholders' ownership and free cash flow, cash dividend among shareholders increases.

The researcher's understanding of the obtained results is that in the companies studied, the percentage of institutional shareholders' ownership is one of the factors affecting cash dividends. In fact, it could be argued that the desire to receive earnings in institutional shareholders may be the cause.

Moreover, when the company has free cash flow, motivation to receive cash earnings by institutional shareholders increases and this can be the reason for confirming the significant relationship between percentage of institutional shareholder and free cash flow with cash dividend.

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