

## The Relationship between Financing Constraints and Cost of Equity of Iranian Listed Companies

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### ABSTRACT

The aim of this study is to investigate the relationship between financing constraints and the cost of equity of listed companies on the Tehran Stock Exchange during 2010-2014. The results showed that the impact of cash flows on the company's cash balance changes in both groups of companies with/without the divergence in the right to control. In other words, financing constraint is significant on the financial supply of both companies. By comparing the impact factors of these variations, we observed that the control right divergence of controlling shareholder leads to increased financing constraints. The results also indicated that the divergence of the control right of shareholders from the right to control cash flow can lead to an increased cost of equity.

**Keywords:** Financing constraints, Right to Control, Cost of Equity

### Introduction

Corporate Financing Strategy is an important issue in accounting and finance scholars' discussion. An important objective of the financing is investing in companies for making more profit. Different methods of financing are internal and external financing or a combination of the two types (Jahankhani and Kanani Amiri, 2006). Managers, due to funding

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constraints in the current era, especially in global commerce and close competition, are under an increasing pressure to reduce their operating costs and to choose the least expensive type of capital structure to carry out business activities in order to increase enterprise value, timely payment of debt, continuity of the activities and their presence in the local and foreign markets (Xu & Li, 2010). These pressures are normally derived from various groups such as shareholders, consumers, and other stakeholders on firm's executives. To achieve the above objectives, strategies of the managers are to supply favorable financing with the least cost for the economic development of businesses, to increase the profit, and to maximize shareholders' wealth. Companies' internal resources have specific priority in financing plans and projects for optimal allocation of resources to the investments due to being cheaper, low risk, and low cost. Managers should completely take advantage of the cash available and short-term investments that are required to sustain the company's current operations. Sometimes, the firm's cash alone is not sufficient for the development of operating activities (Luo and Hu, 2011).

As a result, managers have to propose no dividend, to create reserves, and to loan payment from the shareholders to the General Assembly, which is the cheapest method of financing. This method of financing, especially for young companies can be the best method to continue activities and profitability that is still unknown to the community and suffering bank financial facilities. Internal financing methods include capital stock, retained earnings, payable dividends, legal and contingency reserves, sale of assets, loans received from associates, and current account of partners, who are used to continue operating with the lowest cost of capital used (Nasirzadeh and Rostami, 2012). In early years of their career, business executives and shareholders usually faced difficulties to obtain credit, and prefer domestic financing due to low-cost, compared with other financing methods. Lack of dividend during consecutive years, not only brings grievances for investors who have invested in the firm for profitability, but also reduces their motivation to keep their capital in firms. So, managers tend to finance from external sources in long-term (Lotfi, 2001). The separation of ownership and control as a basis for the relationship between agents causes the managers to maximize their wealth at the expense of the value of the company (Jensen & Meckling, 1976). Ownership disclaimer of minority shareholders has a major conflict with controlling shareholders interests in an economy with concentrated ownership structures. Granting voting rights to the minority

shareholders under the provisions can prevent and resolve conflicts of interest between controlling shareholders of expropriation and the minority. Inter-organization members enjoy from firm profits in their interests and are not concerned with money return to the external investors. The controlling shareholders can increase the earnings per share by controlling and reducing shareholders' value (Lin et al., 2011). Conflicts of interest between controlling and minority shareholders can influence the policy of paying bonuses that reduces the controller shareholders' motivation for rewarding due to the performance (Wahyudi, 2011).

Choosing between internal (cash) or external (borrowing) resources by the business units to finance depends upon both controlling shareholders' equity and the divergence between voting rights and cash flows of the controlling shareholders. The more the property of the controlling shareholders, the higher the management incentives to finance through internal cash flows since the vast majority of the entity's capital is provided by shareholders itself. In case of divergence between voting rights and rights on cash flows of controlling shareholder, it should be noted that any increase in the deviation will increase controlling shareholder's concerns about their abilities. To solve the problem, controlling shareholders rely more on internal resources and cash of business units to finance in firm's projects. Therefore, greater use of internal resources can increase the management motivation to provide information to the controlling shareholder. Therefore, the role of deviation of the voting right and rights on cash flows of controlling shareholder in financing activities is considerable (Yero, 2013).

The cost of shareholders' equity is one of the basic concepts in finance literature that plays a major role in financing and investing decisions. Company's management should take the cost of equity into account in order to determine the appropriate financial resources (Nikomaram and Amini, 2011). Since the cost of shareholders' equity is based on the investors' expected return rate and is associated with their accepted risk (ibid), emphasizing on the major share of financing costs in the non-operating expenses of company and adopting a policy of financing for the company could affect the financial costs incurred on the rights of shareholders. In this study, the relationship between financing constraints and cost of shareholders' equity is analyzed using the divergence of control right. Accordingly, the main question of the current study is whether there is a relationship between the limitations of financing, the cost of shareholders'

equity, and the divergence of control right or not.

Lotfi (2001) studied the role of financial structure of the company from the perspective of financial leverage on the cost of debt and the company's stock price. The results suggested a direct relationship between the proportions of debt in the financial structure of the stock market price, the market value of the company, as well as an inverse relationship between the cost of capital and debt ratio. Aghaie, Jamali and Ahmadi, (2011) found that there is a significant relationship between changes in operating cash flows, asset restructuring, and corporate capital. The results of the study suggested that in the short term, the companies could increase their savings (increase in cash holdings), reduce their external financing (reducing debt or selling ownership equity), and increase their investment in logical financing and external financing in the long-term. Kashanipoor et al. (2011) examined the relationship between financial constraints and the sensitivity of investment to cash flows. They concluded that companies with financial constraints have higher sensitivity of cash flows of investment than companies without financial constraints. Arabsalehi and Ashrafi (2011) analyzed the relationship between financial constraints and the sensitivity of investment cash flows. The results indicated the positive role of cash reserves in reducing the sensitivity of investment-cash flows of the companies. Vahidi Kia (2013) indicated that the competitive power and the cost of equity have a significant inverse relationship with each other. In other words, the competitiveness increases as the cost of equity reduces. The debt ratio has a positive and significant relationship and the firm size has a reversed significant relationship with the cost of equity.

Ghasemi Shams (2014) examined the effect of the institutional investors on investment-cash flows sensitivity. The results indicated no significant relationship between active and passive institutional ownership and the investment sensitivity with the cash flow. Herfindahl-Hirschman Index was used to measure the concentration of institutional ownership as a proxy for the long-term perspective of institutional investors. The results indicated that there is a significant and negative relationship between the concentration of institutional ownership and the sensitivity of investment to cash flow. Khodaverdi (2013) showed that the limitation of funds, as an indicator of the cost exchange, had negative impacts on financing through debt and a positive impact on financing through stock.

Yazdifar and Akbari Badrabadi (2014) showed that the cost of capital has a significant negative relationship with financial structure and its

components (the ratio of total debt to total assets, the ratio of short-term debt to total assets, the ratio of long-term debt to total assets, the ratio of equity to total assets). Jahanshad and Shabani (2015) evaluated the effect of financial constraint on the relationship between institutional investors and the sensitivity of cash flows. The results indicated that institutional investors have a negative and meaningful impact on investment cash flow sensitivity and institutional investors have a significant negative impact on cash flows investment sensitivity in the companies with financing constraints activities and have no significant effect on companies with any financial constraint. The sensitivity of cash flows investment in companies with financial limitations is higher, compared with companies with no financing constraints.

Lin et al. (2011) examined the relationship between corporate governance and financing constraints. The results of regression estimation showed that the quality of corporate governance has a significant impact on the financial constraints. The increase of quality of corporate governance system leads to a reduction in the company's financial constraints and companies with better corporate governance are willing to finance more through debt and keep more cash in the company. Kuan, Li and Liu (2012) examined the relationship between corporate governance and corporate cash holdings in companies. The results suggested that the corporate governance system has a significant impact on cash holdings. Firms with a greater proportion of institutional owners are more willing to finance externally and holding more cash in the company, which proves the limits of internal corporate financing. Mumtaz et al., (2013) concluded that companies' financial performance has a significant inverse correlation with their capital structure. There is also an inverse relationship between capital structure and market value. In addition, the level of risk also increases with an increase in the share of debt in the combined capital structure. He, Lepone and Leung (2013) examined the relationship between information asymmetry and the cost of equity in Korean companies. Using the panel data, the estimations suggested that the conflict of shareholders' interests and agency theory are the main causes of information asymmetry in the Korean market and information asymmetry leads to increase the company's cost of equity. Luo, Li and Zhang (2014) studied the effect of financial constraints on the cost of equity in Chinese companies. The results indicated that the more the gap between the controlling shareholders, controlling right, and right to cash flows in the company, the higher is the sensitivity of investment to cash

flow, which shows the limitations of the company's internal financing. They also showed that an increase in the difference between cash flow and the stock control leads to an increase in shareholders' equity. Based on the contents of the aforementioned the following hypotheses are postulated in the study:

H<sub>1</sub>: The controlling shareholder divergence of the cash flows leads to an increased sensitivity of company's cash to cash flows (financing constraints).

H<sub>2</sub>: The divergence of the controlling shareholder of cash flows leads to increased cost of equity.

### Research Methodology

The research methodology is descriptive based on the regression analysis, which for testing hypotheses the Panel Data have been used. Data collected from a compressed tablet of Dadeh-Pardaz Company, and Rahavard Novin software. Data analysis performed using the Eviews Software at significance level of 95 percent. The statistical population included all listed companies on the Tehran Stock Exchange during 2010 to 2014, which was conducted on the following criteria:

- End of company's fiscal year should be in end of March.
- The companies constantly active at the Tehran Stock Exchange during 2010 to 2014.
- No change in financial year is done in the period under study.
- The company's financial information should be available in the study period.
- Companies are not sub-industry of the financial intermediation, holding and banks industries.

Companies that did not meet the foregoing criteria were excluded from the population. Considering these limitations, 125 observations were studied. The regression model is used to test the first hypothesis as following:

$$\Delta Cash_{i,t} = \beta_0 + \beta_1 CashFlow_{i,t} + \beta_2 Q_{i,t} + \beta_3 Size_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where,  $\Delta Cash_{i,t}$  is changes in cash balance of the company i during two consecutive years of t and t-1 divided by the total assets.  $CashFlow_{i,t}$  is the cash flows of the company i during year t divided by total assets of year t-1.  $Q_{i,t}$  is ratio of market value to book value of the company i assets in the year t.  $Size_{i,t}$  equals the size of the company i in the year t calculated by the

natural logarithm of book value of total assets. Right to cash flow is calculated from the proportion of shares held by major shareholders to the company's total shares issued (Choi and Jung, 2008). Since the borders of term "control" are not mentioned in the Iranian accounting standards by quantity, in order to determine the level of shareholders' cash flows right, shareholders' information used directly or indirectly with more than 5% of issued shares. The divergence of the cash flows and right to control were calculated from the difference between the numbers of voting rights held by shareholders owned the highest percentage of ownership from the rights to cash flow. To test the first hypothesis, the above model separately fitted for both companies with and without divergence of shareholders' control right from the cash flow (respectively index value is upper or lower than the mean of all companies).  $\beta_1$  represents the company's cash sensitivity to balance of cash flows (financial limitation). The results were compared. Significant differences between the regression coefficients will lead to the confirmation of the first hypothesis. Regression below is fitted to test the second hypothesis.

$$COE_{i,t} = \beta_0 + \beta_1 K_{i,t} + \beta_2 Beta_{i,t} + \beta_3 Oprisk_{i,t} + \beta_4 Size_{i,t} + \beta_5 Lev_{i,t} + \beta_6 Topshare_{i,t} + \beta_7 BM_{i,t} + \beta_8 Turnover_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where,  $COE_{i,t}$  is defined as equation3.  $K_{i,t}$  is the proxy of divergence between right to control and right to cash flows in company i and year t, calculated by the ratio of priority shares owned by controlling shareholders to their right to cash flows.  $Beta_{i,t}$  is systematic risk of the company i in the year t calculated by the covariance of stock returns and market returns divided into variance of market returns.  $Oprisk_{i,t}$  is operational risk of the company i in the year t calculated through the company's long-term debt to total assets.  $Lev_{i,t}$  is the financial leverage of the company i in the year t calculated by the ratio of total debt to total book value of assets.  $Topshare_{i,t}$  equals the percentage of the largest shareholder's shares in company i and the year t.  $BM_{i,t}$  is the book value to market value of the company i equity in the year t.  $Turnover_{i,t}$  is a measure of liquidity of shares of the company i in the year t, which is calculated by the company's traded shares to the company's total issued shares in the year t.

$COE_{i,t}$  is cost of equity in company i and the year t, calculated by the Gordon model as follows:

$$COE_{i,t} = \frac{DPS_{i,t}}{1000} + g \quad ; \quad g = ROE_{i,t} \times \left[ 1 - \frac{DPS_{i,t}}{EPS_{i,t}} \right] \quad (3)$$

Where,  $COE_{i,t}$  is cost of equity,  $DPS_{i,t}$  is dividend share profit,  $G$  is growth rate,  $ROE_{i,t}$  is rate of equity return and  $EPS_{i,t}$  is earnings per share.

## Results

The Descriptive statistics of variables are presented in Table 1. The difference between the minimum and maximum data indicates the appropriate scope to be used for the variables.

**Table 1. Descriptive statistics of variables**

Variable	Symbol	Average	Mean	Max	Min	Std. Dev
The ratio of cash to assets	CASH	0.186	0.188	0.602	0.037	0.069
The ratio of net cash flow to assets	CASHFLOW	0.613	0.057	2.234	-1.531	2.915
Market value to book value	Q	2.317	2.950	8.545	0.109	18.344
Company size	SIZE	13.805	13.699	16.454	10.031	1.312
Cost of equities	COE	0.151	0.364	0.446	0.126	18.385
Divergence of the right to control	K	0.500	0.500	1.00	0.000	0.500
Systematic risk	BETA	0.683	0.559	29.841	-10.36	1.521
Operation risk	OPRISK	0.548	0.543	0.774	0.014	0.232
Financial leverage	LEV	0.616	0.625	0.977	0.013	0.235
Institutional shareholders	TOPSHARE	0.452	0.459	0.637	0.251	0.112
Book value to the equity market	BM	0.005	0.003	0.053	0.050	0.009
The ratio of traded shares to the issued shares	TURNOVER	0.515	0.511	0.986	0.052	0.270

Firstly, Limmer test statistic used to detect pooled from the panel method. In case of panel data selection, the next step is to choose fixed or random effects method. For this purpose, Hausman test is usually used. The results of the Limmer test indicated that it is better to use pooled data method.

According to the significance of the results, the effect of each independent variable on the dependent variable and by comparing the results of these tests based on the significance level of 0.05, it can be concluded that the impact of cash flow on the company's cash balance changes was significant for both companies with the divergence to control right (p-value=0.000) and without control right divergence (p-value=0.002). In other words, the sensitivity of the company's existing cash flow is significant in both groups. Comparing the impact of these variables, companies without divergence in controlling right showed an inverse relationship between cash flows and cash balance, while the relationship between the companies with divergence in controlling right is evaluated as positive. The difference



between the impact factors shows that the divergence of controlling right of the controlling shareholder leads to the increased sensitivity of cash to cash flows. The results are statistically significant at 5% and the first hypothesis is confirmed.

**Table 2. The role of the divergence of shareholder controlling right in increment of the cash flow sensitivity of cash to cash flow**

Independent variable	With control right divergence			Without control right divergence		
	Coefficient	t	Sig	Coefficient	t	Sig
CASHFLOW	0.002	8.351	0.000	-0.002	-3.098	0.002
Q	-4.610	-3.642	0.000	-4.060	-0.109	0.913
SIZE	0.002	0.840	0.402	-0.002	2.664	0.008
C	-0.035	-0.754	0.451	-0.024	-2.536	0.012
Goodness of fit test	Test Statistics		Sig	Test Statistics		Sig
ANOVA test	9.978		0.000	6.993		0.000
Results of Pagan method	2.366		0.071	2.774		0.061
Jarque -Bera test results	2.076		0.354	5.312		0.070
Adjusted R <sup>2</sup>	0.300			0.268		
Durbin-Watson statistic	1.935			2.097		

In this model, Chow and Hausman diagnostic tests were used before estimating regression equation due to the mixed nature of the data. The significance level of Chow test (p-value= 0.000) shows the significant of cross-sectional effects on the research model. Therefore, the Hausman test was used in order to determine the fixed or random effects of the cross-section method. The results of this test at the significance level of 0.847 indicated the random effects in the model. Hence, the regression model of the hypothesis was fitted using the panel data with random effects. According to the significant test results, the impact of each independent variable on the dependent variable and by comparing the levels of significance of the test results at 5%, we can conclude that the impact of the divergence of the controlling shareholder on the cost of equity is significant (p-value= 0.0002) and as the impact factor of the variable in the model is positive, we can conclude that the divergence of the controlling shareholder from the cash flow leads to the increased cost of equity. The second

hypothesis then was confirmed at 5% significance level.

**Table 3. The divergence role of the controlling shareholder right of the cash flow in increased cost of equity rights**

Independent variable	Coefficient	t	Sig
K	231.810	4.292	0.000
BETA	32.980	2.896	0.003
OPRISK	-451.925	-1.431	0.153
SIZE	175.619	0.776	0.438
LEV	-695.558	-3.035	0.002
TOPSHARE	252.279	0.932	0.352
BM	6342.667	1.052	0.293
TURNOVER	187.706	0.865	0.387
C	-1981.075	-0.632	0.527
Goodness of fit tests		Test Statistics	Sig
Chow test:		2.187	0.000
Hausman test		4.105	0.847
ANOVA test		2.333	0.018
Results of Pagan method		5.722	0.061
Jarque - Bera test results		1.207	0.547
Adjusted coefficient of determination		0.217	
Durbin-Watson statistic		2.066	

## Conclusion

The results of significance test about the effect of independent variables on company's cash balances showed that the impact of cash flows on the company's cash balance changes is significant in both groups of companies with/out divergence from the controlling right. In other words, the sensitivity of the company's existing cash flow was significant in both groups of companies. By comparing the impact factors, we observed that the company without divergence of the controlling right shows an inverse relationship between cash flows and cash balance, while the relationship between the companies with divergence in the controlling right is evaluated as positive. The difference between the impact factors showed that the divergence of the right to control the controlling shareholders increases the sensitivity of cash to cash flow. The first hypothesis was confirmed. The

findings confirm that in companies without divergence in controlling right of shareholders from the right to cash flow, cash balance changes reduces with an increase in the cash flows, while this relationship was inverse between the companies with divergence of the right to control, where the increase of rate of cash flows will raise the changes of cash in the company.

Financial limitations have manifested more in these companies because the sensitivity of cash to cash flows shows the limitations of the company's financing and companies that are highly sensitive to cash flow have more necessities to borrow from external sources in their financing activities. The findings of this hypothesis are in line with the results of Luo, Li and Zhang (2014).

The results of divergence effects of the shareholders' controlling right from the cash flows on the cost of equity showed that the divergence of the shareholder controlling of the cash flows can lead to an increased cost of equity. Further, the results also confirmed that the cost of equity increases with the divergence of the shareholder controlling of the cash flows. Although it should be noted that in accordance with the findings, the divergence of equity leads to more financial constraints in the company and as a result, the firm borrowing from external sources to finance and company's debt would result in an increased cost of equity. The previous studies found the relationship between financing constraints and the cost of equity as meaningful. Hence, the results of the current study were in line with the results of Luo, Li and Zhang (2014). Thus, due to the significant role of divergence of the controlling right of the shareholder in financial constraints of companies, it is proposed to the study and review equity stock priority in the companies and to publish stock preemptive rights with respect to financial resources of companies. Considering the significant role of divergence of the controlling right of shareholders to increase the cost of equity, it is suggested to have financial activities through the establishment of a long-term debt in companies with divergence in controlling rights and to avoid the creation of debt to equity.

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