The Effect of the Credit Rating, Stock Liquidity and Dividend Policy on the Company Financial Flexibility

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ABSTRACT
Financial flexibility, the ability of the entity, based on effective action to change the amount and timing of cash flows, so that the entity can against unexpected events and opportunities. Accordingly, the fund management company, including the anticipated needs of companies and institutions at different levels and meet these needs which the least cost possible, which is directly linked to the credit rating. Liquidity also factors in the valuation of assets and issues relating to corporate governance is important. This crystallization risk of liquidity in the minds of buyers that could dissuade investors from investing in the company. On the other hand, reduces the company's reputation among investors cut dividends external and external financing, which in turn is more difficult. Based on the above, this study examines the impact of credit rating, stock liquidity and dividend policy of the company’s financial flexibility. For this purpose, information 104 member companies of Tehran Stock Exchange during 2004 to 2014, were used. Hypothesis test results indicate that improved credit rating, significantly, resulting in flexible companies against fluctuations in the economy. On the other hand, by increasing the liquidity of the stock and thus increase the attractiveness of the stock, the company's maneuverability, will increase. In addition, results showed that, in high levels of economic fluctuations, shall restrictive dividend policy and when on the contrary dividend policy, expansion, must be taken.

KEYWORD
Credit rating, Stock liquidity, Dividend policy, Financial flexibility, Economic fluctuations.

INTRODUCTION
Financial flexibility includes a rate of capacity and speed by which a company is able to provide necessary resources for defensive reactions (debt settlement) and aggressive reactions (investment) in order to increase its valuation (Bayan, 2009). This kind of flexibility enables business unit to properly take advantage of unexpected investment opportunities, and to survive during a period when unexpected operational cash flows stand at a low level and probably a negative level due to an unexpected decline in demand for manufacturing products of business unit. In any financial market, with respect to the spread and depth of market, there are various instruments for making investment. One of the basic issues in making investment is level of stock liquidity with respect to factors such as stock options and independent supervision of auditors (Cocki and Govizani, 2009).

The less liquidity a share has, the less attractive the share will be to investors, unless more return can accrue to its holder. In other words, some investors may be immediately in need of financial resources of investment; in which case, the power of stock liquidity can take on greater importance. In decisions on financial support, company employ its funds at this point so that it can live up to its commitments to financial resource suppliers (Firfiled and Juhen, 2001).

Financial resources of companies in relation to making or not making investment are divided into two classes, internal financial resources and external financial resources, according to their financial policies. For internal financial resources, company set out to provide funding from earnings; that is, profit is mainly used in operational activities rather than dividing profit among shareholders in order to obtain more return, as it attempts to seek funding from debts and stock with regard to external financial resources.

The use of external and internal financial resources has different impacts on the productivity and efficiency of investment. Therefore, it is questioned how companies seek funding so as to exert the maximum positive influence on profit, efficiency of investors, cash flows of new investment and return of shareholders. Volatility of facilities granted by companies, financial and credit institutions can be seen as a
basic derive for the economic growth of companies. Likewise, management of liquidity coming from volatility of funding is one of the biggest challenges that a system face. The main cause of the challenge is that most of corporate resources are funded from short-deposits. Management of corporate funding includes forecasting the needs of institutions and companies during different points in time and fulfilling the needs with least possible charge, which is directly linked with their credit rating. Preservation of assets that can be liquidated in an attempt to ensure financial flows can reduce investment opportunities of companies for paying loans to applicants (Deniz and Sibilco, 2010).

In addition to this, clever management of liquidity essential for funding and granting facilities enables companies to account for customers’ needs in due time without any error. This may increase credit for customers and society (Daniel et al, 2011). In this paper, an attempt is made to address the effect of credit rating, stock liquidity, and dividend policy on companies’ financial flexibility.

**RESEARCH BACKGROUND**

Loshowsky and Vancov (2012) explored the issue whether stock liquidity along with firm size and value is one of the important and influential factor in stock return. The results of the their investigation demonstrated that stock liquidity, as opposed to what was expected, has no significant impact on stock return compared with stock value and firm size. Sadka (2011) investigated the association between stock liquidity and accounting information in the New York Stock Exchange. He points out that company's share will be attractive and ultimately increase liquidity, as risks of accounting information declines which happens as a result of increase in the quality and reliability of accounting information. Escobin and Nehol (2010) studies also the effect of company's share listed in stock exchange on the situation of their financial flexibility. The results of the study indicate that listed companies on stock exchange are able to replace internal funding resources with external funding resources, especially through debts, if necessary compared to those not being listed on stock exchange.

Bagherbeigi et al (2012) explored the relationship between financial flexibility and growth opportunity and future value of companies listed on the Tehran Stock Exchange. In order to measure financial flexibility, Marchika's model was used and a multivariate regression was used to test hypotheses. The obtained results indicated that there is no significant relationship between financial flexibility, firm size and productivity and their growth opportunities. Moreover, there is no significant relationship between financial flexibility, companies' profitability and their future value.

**DATA ANALYSIS METHOD AND RESEARCH FINDINGS**

Financial flexibility is estimated through Drahozal’s model (2006) as follows:

\[ \text{Flex} \leq \alpha + \lambda_1 \frac{C_{i,j}}{M_{i,j}} + \lambda_2 \frac{CF_{i,j}}{TA_{i,j}} + \lambda_3 MB_{i,j} + \lambda_4 \frac{Dep_{i,j}}{TA_{i,j}} + \lambda_5 \frac{Size_{i,j}}{TA_{i,j}} + \lambda_6 \frac{FD_{i,j}}{TA_{i,j}} + e_{i,j} \]

Where:

- \( \text{Flex} \leq \alpha \) : Final value of cash
- \( C_{i,j} \) : Total corporate cash in the beginning of the current year or the end of previous year
\( M_{i,t-1} \): Market value in the beginning of the study year (the number of stock is multiplied by each company's beginning year price

\( CF_{i,t} \): Operational cash flows

\( TA_{i,t} \): Company's total asset

\( MB_{i,t} \): Market value is divided by book value

\( Dep_{i,t} \): Company's depreciation expense

\( Size_{i,t} \): Firm size (natural logarithm of the market value of equity)

\( FA_{i,t} \): Company's total fixed assets

A model was developed to test the research hypotheses, which is employed to confirm or reject the hypotheses under consideration. The research model is built upon Caser (2005) and adjusted variables are built on Ang and Smdoma (2014) as follows:

\[
FM_{i,t} = \alpha_i + \beta_1 L\text{iq}_{i,t} + \beta_2 E\text{pd}_{i,t} + \beta_3 P\text{c}_{i,t} + \beta_4 C\text{ash}_{i,t} + \beta_5 L\text{ev}_{i,t} + \beta_6 T\text{rade}_C\text{re}_{i,t} + \beta_7 L\text{m}_i + \beta_8 S\text{ales}_i + \beta_9 S\text{ize}_i + \epsilon_i
\]

Operational definition of independent variables

Credit rating (\( Trad\text{Cre}_{i,t} \): in this research, in order to compute corporate credit rating, we decided to collect data on companies’ total adjusted score. Having developed the above formula, a coefficient is calculated for each company. Afterward, by arranging it for a company based on the maximum coefficient, the first rank and following ranks are estimated. The companies whose class rate is below the mean of the total index of industries under consideration are classified as companies with financial limitation (Campelo et al, 2010). How company's total adjusted score is measured as follows:

\[
\text{Company's total adjusted score} = \left( \frac{\text{Total score} \times 1 + (1 + \text{EPS coverage percentage} \times \text{EPS coverage ratio}) + (\text{EPSs mean deviation} \times \text{EPS deviation coefficient})}{(1 + \text{EPS coverage ratio} + \text{EPS deviation coefficient})} \right) \times 100
\]

Stock liquidity (\( L\text{iq}_{i,t} \): according to Caprio et al (2010), how company’s stock liquidity is calculated is as follows:

Stock liquidity: mean (stock return/ trading size)* 1000000

Having calculated the above formula, a coefficient is calculated for each company; afterward, by putting it in order for company, according the highest coefficient, the first rank and the following ranks are estimated. The superior rank of liquidity is not essential for buying or selling company's share in any market situation. However, it is a ratio by which the level of liquidity is exhibited compared to other stock exchange companies. The formula of computing stock liquidity rank in this paper is as follows (Neiser and Goyad, 2002):

\[
\text{liquidity rank formula} = \frac{1}{\text{number of buyers} + \frac{1}{\text{frequency of trading}} + \frac{1}{\text{number of traded days}} + \frac{1}{\text{number of traded stock}} + \frac{1}{\text{trading size}} + \frac{1}{\text{average day value}}}
\]
Dividend policy ($\text{Pay}_{i,t}$): Dividend policy, according to Tung (2011), is a dummy variable that if company paid dividend in the fiscal year under consideration, it would be equal to 1, otherwise it is equal to zero.

Operational definitions of control variables;

External funding ($\text{Exfin}_{i,t}$): according to Duchin et al (2010), company's external funding variable is calculated through the following formula:

$$\text{Exfin}_{i,t} = \frac{\text{Company's external funding in the current year via bank loan and credits}}{\text{Book value of total assets}}$$

Cash asset ratio: according to Kevin and Wikki (2008), cash ratio is calculated as follows:

$$\text{Cash}_{i,t} = \frac{\text{Cash assets}}{\text{Book value of total assets}}$$

Financial leverage ($\text{LEV}_{i,t}$): in this paper, in order to calculate financial leverage, Kurbet and Jenkinson (1994)'s works is used, and it is calculated as follows:

$$\text{LEV}_{i,t} = \frac{\text{Book value of the sum total of debts}}{\text{Book value of the sum total of assets}}$$

Institutional shareholder ratio ($\text{Ins}_{i,t}$): in order to calculate institutional shareholder variable , Linz et al (2010)'s work is used, and it is calculated as follows:

$$\text{Ins}_{i,t} = \frac{\text{Ownership percentage of Institutional shareholders}}{\text{Total percentage of share held by corporate shareholders}}$$

Stock price volatility ($\text{Spvol}_{i,t}$): it is equal to the growth rate of stock price, according to Sufi (2009), and it is calculated as follows:

$$\text{Spvol}_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

$P_{i,t}$: Stock price of company i for year t

$P_{i,t-1}$: Stock price in the year before the study year

Sales growth rate ($\text{SalesG}_{i,t}$): company's sales growth rate is also a factor determining company's performance. According to Kuki and Guveizani (2009), sales growth is used as an indicator for growth opportunity value.

Company's sales growth rate is calculated using the following formula:

$$\text{SalesG}_{i,t} = \frac{\text{Net sales of company i for year t}}{\text{Net sales of company i for year t-1}}$$

Sales growth rate of company i for year t

Net sales of company i for year t

Net sales of company i for year t-1

6. Descriptive analysis of research variables

Prior to the research hypotheses test, the descriptive indexes of the research variable will be examined briefly in table 1:

<table>
<thead>
<tr>
<th>Research variable</th>
<th>Abbreviated mark</th>
<th>number</th>
<th>mean</th>
<th>Standard deviation</th>
<th>min</th>
<th>max</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial flexibility</td>
<td>Fin flex</td>
<td>1144</td>
<td>0.3057</td>
<td>0.2582</td>
<td>0.0002</td>
<td>2.5957</td>
<td>2.122</td>
<td>11.204</td>
</tr>
<tr>
<td>Credit rating</td>
<td>TradCre</td>
<td>1144</td>
<td>0.1740</td>
<td>0.2172</td>
<td>0.0002</td>
<td>2.3828</td>
<td>5.285</td>
<td>40.890</td>
</tr>
<tr>
<td>Stock liquidity</td>
<td>Liq</td>
<td>1144</td>
<td>0.3365</td>
<td>0.3194</td>
<td>0.0000</td>
<td>0.9986</td>
<td>0.861</td>
<td>-0.770</td>
</tr>
<tr>
<td>Dividend policy</td>
<td>Pay</td>
<td>1144</td>
<td>0.4775</td>
<td>0.4998</td>
<td>0.0000</td>
<td>1.0000</td>
<td>0.090</td>
<td>-1.998</td>
</tr>
<tr>
<td>External funding</td>
<td>Ex fin</td>
<td>1144</td>
<td>0.7058</td>
<td>2.8145</td>
<td>0.0116</td>
<td>70.7600</td>
<td>24.831</td>
<td>619.026</td>
</tr>
<tr>
<td>Cash asset ratio</td>
<td>Cash</td>
<td>1144</td>
<td>0.9439</td>
<td>0.2860</td>
<td>0.0589</td>
<td>1.8100</td>
<td>0.578</td>
<td>0.707</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>Lev</td>
<td>1144</td>
<td>0.5235</td>
<td>0.6088</td>
<td>0.0003</td>
<td>2.9964</td>
<td>1.768</td>
<td>2.875</td>
</tr>
<tr>
<td>Institutional shareholder ratio</td>
<td>Ins</td>
<td>1144</td>
<td>0.7730</td>
<td>0.4166</td>
<td>0.0118</td>
<td>2.6185</td>
<td>1.295</td>
<td>2.977</td>
</tr>
<tr>
<td>Volatility of stock price</td>
<td>Spvol</td>
<td>1144</td>
<td>0.1462</td>
<td>0.1367</td>
<td>0.0001</td>
<td>0.9462</td>
<td>1.791</td>
<td>4.810</td>
</tr>
<tr>
<td>Sales growth rate</td>
<td>Salesg</td>
<td>1144</td>
<td>0.5773</td>
<td>0.1468</td>
<td>0.2000</td>
<td>1.0000</td>
<td>1.918</td>
<td>3.604</td>
</tr>
<tr>
<td>Mix of assets</td>
<td>FA/TA</td>
<td>1144</td>
<td>0.250</td>
<td>0.168</td>
<td>0.0000</td>
<td>0.879</td>
<td>0.844</td>
<td>3.490</td>
</tr>
</tbody>
</table>
Table 1 indicates that the research variables have what kind of characteristics. The first column of the table states that all data have been examined for all variables of interest in 1144 firm year. For the descriptive statistics of research variable, for all variables, central parameters and distribution are calculated separately. The independent variable firm size with 1034 observations takes the minimum, maximum, and mean, 19.158, 25.251, and 21.325, respectively. The points suggest that the variable followed a normal distribution. The domain of the variable distribution variation form the mean of data, with respect to standard deviation, ranges from zero to 1.538. In regard to the positive quality of skewness coefficient 1.605, it can be inferred that the distribution of the variable is skewed to the right, i.e. the density of data inclines to the right more, and the relationship (mean>median>mode) governs. The value of kurtosis coefficient is 3.499 for this variable, suggesting that the elongation and kurtosis of the distribution of the variable is greater than standard normal distribution. In Eviews software program, kurtosis coefficient is calculated, in that if it is less than 3, it suggest the kurtosis of data is shorter than the elongation of normal distribution. In sum, the more elongation and kurtosis of a variable, the more density and concentration of data will be, and quite the contrary the wider distribution is, the wider domains will be, and distribution of elements will be greater.

**RESULTS OF RESEARCH HYPOTHESES TEST**

Table 2. coefficient analysis of independent variable as to testing hypotheses

<table>
<thead>
<tr>
<th>Descriptive variable</th>
<th>coefficient</th>
<th>t statistic</th>
<th>Significance level</th>
<th>Variance inflation factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>intercept</td>
<td>C</td>
<td>0.0733</td>
<td>5.6825</td>
<td>0.0000</td>
</tr>
<tr>
<td>Stock liquidity</td>
<td>Liq</td>
<td>0.0359</td>
<td>4.8912</td>
<td>0.0000</td>
</tr>
<tr>
<td>External funding</td>
<td>Ex Fin</td>
<td>0.0216</td>
<td>3.0173</td>
<td>0.0056</td>
</tr>
<tr>
<td>Dividend policy</td>
<td>Pay</td>
<td>-0.0252</td>
<td>-3.1797</td>
<td>0.0000</td>
</tr>
<tr>
<td>Cash assets ratio</td>
<td>Cash</td>
<td>0.039</td>
<td>1.018</td>
<td>0.0327</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>LEV</td>
<td>-0.0359</td>
<td>-4.9812</td>
<td>0.0000</td>
</tr>
<tr>
<td>Credit rating</td>
<td>TradCre</td>
<td>0.0053</td>
<td>2.111</td>
<td>0.0106</td>
</tr>
<tr>
<td>Institutional shareholder ratio</td>
<td>Ins</td>
<td>0.0214</td>
<td>5.385</td>
<td>0.0000</td>
</tr>
<tr>
<td>Volatility of stock price</td>
<td>Spvol</td>
<td>0.00820</td>
<td>2.079</td>
<td>0.0219</td>
</tr>
<tr>
<td>Sales growth rate</td>
<td>SalesG</td>
<td>0.00552</td>
<td>2.685</td>
<td>0.0174</td>
</tr>
<tr>
<td>Firm size</td>
<td>Size</td>
<td>0.0221</td>
<td>3.430</td>
<td>0.0062</td>
</tr>
<tr>
<td>F statistic</td>
<td></td>
<td>6.5616</td>
<td></td>
<td>0.0000</td>
</tr>
<tr>
<td>Significance level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson statistic</td>
<td>1/720</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-Limer test</td>
<td></td>
<td>1/169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance level</td>
<td></td>
<td></td>
<td></td>
<td>0.081</td>
</tr>
<tr>
<td>Adjusted coefficient of determination</td>
<td>0/62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The coefficient of independent variable, credit rating, is 0.053 in this model, which suggests that dependent variable will increase by five units, if the variable increases by one hundred unit. Given the significance level of the variable, it can be said that the relationship is significant at 99% confidence level. That is, there is a positive and significant relationship between credit rating and financial flexibility. The coefficient of the independent variable, stock liquidity, is 0.0359 in this model, which suggests that the dependent variable will increase by three units, if the variable increases by one hundred unit. Given the significance level of the variable, it can be said that the relationship is significant at 99% confidence level. The adjusted coefficient of determination is equal to 0.62, which suggests that 62% of variation of dependent variable is explained by variables on the right side. Although 38% of variation of dependent variable is not explained by variable on the right side, it can be said that the model has a goodness of fit for the relationship between dependent and independent variables.
given its F-Fisher test and significance level. Durbin-Watson statistic is the most famous test for detecting autocorrelation. When Durbin-Watson statistic stands between 1.5 and 2.5, it means there is no autocorrelation. Given the value 1.720 obtained for the statistic, we observe lack of autocorrelation. F-Limer statistic is taken to examine how data arrangement and its panel or integration can be calculated. In order to determine whether the use of panel data is effective in estimation, F-Limer test is used, and in order to determine which method (fixed effect or random effect) is preferable for estimation, Hausman test is used. Given the results of the test (table 2), since significance level of F-Limer statistic is greater than 0.05, the data arrangement should be in (table 2), since significance level of F-Limer statistic is greater than 0.05, the data arrangement should be in

**DISCUSSION AND CONCLUSION**

The results of hypotheses test suggest that improvement of credit rating can significantly make a company flexible to economic fluctuations. On the other hand, as stock liquidity increases, so does stock attraction, and company's power to maneuver, i.e. its financial flexibility, will increase. In what followed, the results indicated that we need to adopt restrictive dividend policy, and contrary to this extended dividend policy in high levels of economic fluctuations. It should be noted that in the course of the study some limitations existed that the research confronted. Considering the fact that the research sample was taken from companies listed in the Tehran Stock Exchange, and sample companies were not necessarily part of active economic units in the country in terms of price, ownership structure, and type of productions; therefore, the generalization of data should be undertaken with caution.

During data collection, due to inaccessibility of some companies' information, we had to delete them off the final sample or the final matrix, though if the information was accessible, more generalizable results could have been achieved. The above limitations are limitations that there no possibility of control over them. However, given the desirable results obtained from the tests of autocorrelation between observations using Durbin-Watson statistic, as well as significance of correlation coefficients of research model, we can ensure lack of the impact of these factors on the relationship between the research model variables.

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