The Investigation of Relation between Earning Management and Pricing Less Than Initial Public Offering of Companies Listed Tehran Stock Exchange

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ABSTRACT: The current study is to examine the relation between earning management and pricing less than initial public offerings in Tehran stock exchange. The study is a kind of descriptive and practical research. All listed companies in Tehran stock exchange were selected as statistical population during 2006 to 2011. So, there are 74 listed companies in this research. Earning management variable and pricing less than initial public offerings variable are regarded as independent and dependent variables, respectively. So, one hypothesis is provided and related data are collected. To examine the research’s hypotheses, Eviews7 software is applied. Ordinary Least Squares (OLS) is used to approve/reject the hypotheses, and heteroscedasticity pre-tests and fixed effects is applied to perform these tests. The results show that there is a significant and positive relation between earning management and pricing less than initial public offerings in the listed companies of Tehran stock exchange.

Keywords: earning management; pricing less than initial public offerings; Tehran stock exchange

INTRODUCTION

The role of capital and financial markets is absorbing private sector and leads them to product sector (Boulton, Smart & Zutteyer, 2011). Nowadays because of the role of stock exchange market in developing country, this issue has been so noticeable. Every year, several companies, are traded in stock exchange as of initial public offering by considering economic life cycle and privatization program (Armstrong, Foster & Taylor, 2009). The initial public offering is one of the important events in capital market and if it wasn’t planed correctly by complete cognition of capital market and potential investors, it would have unpleasant consequences for companies and capital market (Ritter & Welch, 2002). Companies usually offer their stocks in a price less than intrinsic value in order to attract potential investors and provide the successful offering. It is known as “under-pricing”. Experimental evidences show that the stock pricing less than initial public offering is a kind of ideological phenomenon and is generalized in stock exchange of whole countries approximately (Subadar, Brooks & Sannassee, 2012).

Nowadays, earning management is one of the most discussable subjects in accounting researches. From the point of behavior, these researches are very important because investors really care about earning number as the one of the important factors in decisions. Many researches show that a little sustainable fluctuation in earning is the result of its quality (Fan, 2007). So, investors invest confidently in companies which have sustainable profitability. When companies are under increasing economic inappropriate pressure, managers ask from accounting unit to improve the last line of financial statement (profit) and thereby, change the informational content. In this situation, it doesn’t seem that accounting with all flexibilities is able to provide useful data for manager (Boulton et al., 2011).

Hence, Chiraz and Anis (2001) investigated the relation between earning management and the performance of French IPO companies. They realized that companies with strict earning management suffered from poor performance in initial offering. So after initial offering, managers will be removed from the future program list. Nagata and Makino (2013) investigated the relation between earning management and under-pricing for countries in Japan.
The results show that strict earning management is the reason of increasing suspicious of IPO companies and breaking down of prices.

Zalooki and Miller (2013) suggested IPO companies which tend to increasing earning management have an unpleasant action based on market compared with companies which have conservative earning management. But these conditions are in the time of economic crisis just for IPO companies.

Generally, what we want in this study is the investigation of the relation between earning management and pricing less than initial public offering in companies’ listed Tehran stock exchange. It seems that findings are so useful for companies’ required and non-required managers, institutional, potential and actual investors, and independent auditors.

**METHODOLOGY**

**Methods**

The current study is designed by post events approach (via past information). On the other hand, the current study is a kind of descriptive and co relational research. The current study also is a kind of quantitative research based on data nature and is a kind of applied research based on targets as well. Due to examine the research hypothesis, the nature of information and data is based on real past quantities information.

**Hypothesis**

- There is a significant relation between earning management and pricing less than initial public offering of companies listed Tehran stock exchange.

**Population and statistical sample**

All listed companies in Tehran stock exchange are selected as statistical population during 2006 to 2011. The sample is selected by elimination systematic sampling according to below:

1. The company must be manufacturing company.
2. The financial year must end to the last day of a year.
3. The companies’ stock must be traded in stock exchange.
4. The company mustn’t change the activity or financial year during financial years.
5. The required company’s information must be available.

According to these limitations we select 331 companies from 421 companies listed Tehran stock exchange via systematic method and 74 companies are collected by Cochran technique as final sample. Cochran technique is described as below:

\[
 n = \frac{(331)(1.96)^2 \times (0.5)(0.5)}{(331)(0.1)^2 + (1.96)^2 (0.5)(0.5)} \approx 74
\]

In the above formula, the maximum permissible error (d) is equal to 0.1, the coefficient of confidence is equal to 0.95, t=1.96 and p, q values are 0.5 for each one. And the population size is considered N. p valued 0.5 because if p=0.5 so n would be maximized and it causes that sample get larger enough.

**The operational definition of research variables**

**The operational definition of dependent variable (under-pricing IPO)**

In order to calculate the under valuation most of the prior studies used first return concept (the return released at the first day of trading). But there is initial offering in Tehran stock exchange based on the existence of fluctuation domain limitation of daily price and different mechanism. The return in first trading day doesn’t show the rate of under-pricing correctly. So with emphasizing on first return concept, in order to minimizing these effects, we calculate under-pricing during longer period. (Until the market get to the real price.) due to determine the first return period , first we find the extra mean of the return for public initial offering market during 30 days of trading day after offering and consider the first period which extra market return is positive and unequal to zero as the first return period. Then after determining the first return period of initial public return, the adjusted market returns of initial public offering in Tehran stock exchange will be provided as below (Rahmani & Fallah Nezhad, 2009).

\[
 MAR = \frac{P_{1t} - P_0}{P_0} - \frac{M_{1t} - M_0}{M_0}
\]

\[P_0 = \text{last price in offering day}\]

\[P_{1t} = \text{last price in last period of first return}\]

\[M_0 = \text{total index in offering day}\]

\[M_{1t} = \text{total index in the last period of first return}\]
The operational definition of independent variable (earning management)

In the current study due to measurement of earning management, the Jones modified model is used, because this model is able to solve the solutions in current research. The model is:

\[ \frac{TAC_{it}}{TA_{it-1}} = \alpha_0 \left( \frac{1}{TA_{it-1}} \right) + \frac{\alpha_1 (\Delta REV_{it} - \Delta REC_{it})}{TA_{it-1}} + \frac{\alpha_2 (PPE_{it})}{TA_{it-1}} + e_{it} \]

- \( TAC_{it} \): Sum of the accruals (income before extraordinary items minus operating cash flow) of firm \( i \) as of year \( t \)
- \( TA_{it-1} \): sum of the assets of firm \( i \) as of year \( t-1 \)
- \( \Delta REV_{it} \): The income variation of firm \( i \) during \( t-1 \) to \( t \) period
- \( \Delta REC_{it} \): The accounts and notes receivable variation of firm \( i \) during \( t-1 \) to \( t \) period
- \( PPE_{it} \): The gross amount of property, machinery and equipment of firm \( i \) as of year \( t \).

These estimating coefficients regarding subject firm regression is represented as below, in order to managed-accruals for each sampled firm by subtracting unmanaged-accruals from whole accruals:

\[ TEAM_{it} = \frac{TAC_{it}}{TA_{it-1}} - \alpha_0 \left( \frac{1}{TA_{it-1}} \right) + \frac{\alpha_1 (\Delta REV_{it} - \Delta REC_{it})}{TA_{it-1}} + \alpha_2 \left( \frac{PPE_{it}}{TA_{it-1}} \right) \]

- \( TEAM_{it} \): managed accruals of firm \( i \) as of year \( t \) that is equal to the sum of the optional accruals.

The operational definition of control variables

- Firm size (SIZE): the book value of total assets.
- Profitability (PROFIT): net income divided by the book value of total assets.
- Firm age (AGE): the numbers of years that companies accepted in Tehran stock exchange.
- Return of asset (ROA): total assets / (financial expenses + net income)
- Financial leverage (LEV): the sum of the current and long-term liabilities divided by owner’s equity.

Research model

\[ IP0 \text{ under pricing} = \beta_0 + \beta_1 (EM) + \beta_2 (SIZE) + \beta_3 (PROFIT) + \beta_4 (AGE) + \beta_5 (ROA) + \beta_6 (LEV) + \varepsilon_{it} \]

- \( IP0 \): initial public offering under-pricing
- \( EM \): earning management

Data analyzing method

This paper uses combined data to test the hypotheses. In this method, time series data (years under investigation) and cross-section (the surveyed companies) are combined to each other. Combined data is further used due to increasing number of observations, enhancing the degree of freedom, reducing variance heterogeneity and studying dynamic changes. In order to efficiently estimate a regression model using combined data, one of the common effects, fixed effects and random-effects models are selected using appropriate tests. Tests used to select one of the top models are F Limer test for choosing between models of common effects and fixed effects, if you select the fixed effects model, the Housman test will be used to choose between fixed effects and random effects models. Autocorrelation will be reviewed except disturbing the model, the heterogeneity of variance and normality of the data. To illustrate the explanatory power of the explanatory variables, coefficient of adjusted determination (Adjusted R$^2$) will be used, to evaluate being significant variables, t-statistics and to assess the overall adequacy of the model, Fisher statistical. The statistical analysis will be performed using EXCEL and EVIEWS 7 software.

RESULTS

Descriptive statistics

<table>
<thead>
<tr>
<th>variable</th>
<th>min</th>
<th>Max</th>
<th>mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under-pricing IPO</td>
<td>-0.426</td>
<td>0.571</td>
<td>0.063</td>
<td>0.291</td>
</tr>
<tr>
<td>Earning management</td>
<td>0.057</td>
<td>0.638</td>
<td>0.349</td>
<td>0.528</td>
</tr>
</tbody>
</table>
In this section, we estimate Heteroskedasticity which is caused by companies’ different features. If there is homogeneity in cross-sectional units but the variance in all over the units was different so there is group wise Heteroskedasticity. Therefore, the results show that $H_0$ which is about Heteroskedasticity must be approved.

Table 2. The results of Heteroskedasticity test via Wald modified statistic.

<table>
<thead>
<tr>
<th>explanation</th>
<th>$\chi^2$</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7415</td>
<td>-9287.36</td>
<td>Wald modified statistic</td>
</tr>
</tbody>
</table>

The determination of model estimating – significance test of fixed effect method

F-test

Table 3. The results of F-test.

<table>
<thead>
<tr>
<th>explanation</th>
<th>F</th>
<th>df</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>1.911524</td>
<td>73</td>
<td>*0.004</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>141.316745</td>
<td>73</td>
<td>*0.003</td>
</tr>
</tbody>
</table>

Hausman test

Table 4. The results of Hausman test.

<table>
<thead>
<tr>
<th>explanation</th>
<th>F</th>
<th>df</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>7.715624</td>
<td>9</td>
<td>*0.007</td>
</tr>
</tbody>
</table>

According to F and Hausman test, the probability provided from both test is less than 0.05. So fixed effects method in regression model must be used.

The examination of research hypothesis

Table 5. The regression of hypothesis test.

<table>
<thead>
<tr>
<th>variable</th>
<th>Effect coefficient</th>
<th>Estimation deviation</th>
<th>t statistic</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>0.351</td>
<td>0.512</td>
<td>2.005</td>
<td>*0.009</td>
</tr>
<tr>
<td>Earning management</td>
<td>0.172</td>
<td>0.662</td>
<td>2.187</td>
<td>*0.005</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.415</td>
<td>0.371</td>
<td>-1.629</td>
<td>*0.048</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.261</td>
<td>0.429</td>
<td>1.264</td>
<td>0.086</td>
</tr>
<tr>
<td>Firm age</td>
<td>-0.377</td>
<td>0.528</td>
<td>-1.947</td>
<td>*0.013</td>
</tr>
<tr>
<td>Asset return</td>
<td>-0.169</td>
<td>0.336</td>
<td>-1.125</td>
<td>0.076</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-0.262</td>
<td>0.706</td>
<td>-2.279</td>
<td>*0.003</td>
</tr>
</tbody>
</table>

* Error level 0.05

Table 6. Capability of explanation and significance of the entire model.

<table>
<thead>
<tr>
<th>R determination coefficient</th>
<th>Adjusted determination coefficient</th>
<th>DW</th>
<th>ANOVA</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.536</td>
<td>0.524</td>
<td>1.581</td>
<td></td>
<td>9.625</td>
<td>0.000**</td>
</tr>
</tbody>
</table>

** 1% error level
According to tables 1-5, the assumption of the lack of correlation between errors isn’t rejected because the result of Durbin-Watson test is between 1.5 and 2.5. So we can use regression. According to the significance of F-test (9.625) in error level less than 0.01 and also independent, dependant and control variables, we conclude that the current research regression model is suitable and independent and control variable are able to explain initial public offering under-pricing variations. The adjusted-coefficient of determination is 0.524 that shows 52.4 percent of whole dependant variable variations depend on control and independent variable. Also, the effect coefficient of earning management variable on initial public offering under-pricing is 0.172 so it shows that earning management affects on initial public offering under-pricing positively and directly. On the other hand, according to significance of t-test for earning management on initial public offering under-pricing (0.005), \( H_0 \) is rejected with confidence level 95% and the error level less than 0.05. Therefore, there is a significance relation between earning management and pricing less than initial public offering in the listed companies of Tehran stock exchange. The regression model is written as below:

\[
IPO_{\text{underpricing}} = 0.351 + 0.172(EM) - 0.415(SIZE) + 0.261(PROFIT) - 0.377(AGE) - 0.169(ROA) - 0.262(LEV) + \varepsilon_t
\]

DISCUSSION AND CONCLUSIONS

The current study, investigated the relation between earning management and pricing less than initial public offering in the listed companies of Tehran stock exchange. The results show that there is a significance and positive relation between earning management and pricing less than initial public offering in the listed companies of Tehran stock exchange. So that, if earning management has a single increasing, pricing less than initial public offering increases more. According to this, whole potential and actual investors, agents, firm managers, auditors, accouters and stake holders can use these results for decisions.

REFERENCES


