“Tema: 6 (Rekayasa Sosial dan Pengembangan Perdesaan)”

DOES FUNDAMENTAL FINANCIAL CONSTRAINT AFFECTED INVESTMENT? (AN EMPIRICAL EVIDENCE FROM INDONESIA)

Oleh

Rio Dhani Laksana, S.E., M.Sc.
Faculty of Economics and Business, Jenderal Soedirman University,
Purwokerto, Indonesia
E-mail: riodhani@unsoed.ac.id

ABSTRACT

This study was made due to inconsistency findings of the research differences in financial constraint conditions that affect the sensitivity of the influence of investment companies in the Indonesian Capital Market. The research focus on the novelty of measuring instruments (proxies) of fundamentals financial constraint on investment and its effect on corporate investment. Financial constraint measurement tool used only dividend to see condition of funding constraint in company and developed in this research. For estimation, the probability of financial constraint is used as an objective criteria to differentiate a group of firms based on funding constraints to see its effect on investment. The research using regression model on hypothesis test with data from 2010 to 2015. Using panel data regression (except prediction model of Fundamental Financial Constraint). The results of this study is to provide a new proxy in finance management research in measuring the financial constraint based on the fundamental aspects of investment. The test results found that mispricing rate has a positive effect on the investment and firms with low (high) fundamental financing constraints were identical to overvalued stocks and overvalued firms were more likely to overinvest than firms with undervalued stocks that underinvest. This study is expected to be used as a basis for policy making in relation to the use of funds for investment decisions of companies in the Indonesian capital market. For investors a picture of the fundamental influence of financial constraint can provide a positive signal in increasing the value of their investments in the Indonesian capital market.

Keywords: financial constraint, investment, capital market

INTRODUCTION

In efficient market conditions, the value of the stock will fully illustrate the fundamental condition of the company. However, many studies have shown that capital markets are not efficient (Scheinkman and Xiong 2003) and consequently the movement of firm stock values is not entirely a reflection of the company's fundamental conditions but also non-fundamental factors, such as market participants' sentiments by this investor sentiment keynes Derived from irrational elements of investors such as investor or overconfidence bias (Daniel and Titman 2004) or systematic mistakes made by investors when valuing these shares or asymmetric information between managers and investors.
(Tobin, 2015). These things can then cause the stock value to overvalued or undervalued (mispricing / misvaluation).

Testing the relationship between investment, mispricing and Fundamental Financial Constraints in various combinations has been done more in the United States (Chen et al., 2007). Most research studies on previous funding structures that examine the relationship between investment and mispricing in the stock market in the United States tend to have lower volatility than other capital markets. As a result the investment bubble impact looks lower (Chirinko and Schaller 2001) & (Kang 2009).

Financial constraint describes the condition of companies facing difficulties in finding funding from available sources For companies having low financial constraints they do not rely too much on their shares, so mispricing (overvalued or undervalued) conditions will not significantly affect their investment decisions. Conversely, a firm's investment decision with a high financial constraint can be more sensitive to its share value. Hermeindito (2014) points out that the investment decisions of firms are more sensitive to liquidity in financially constrained companies. Based on the above description and the results of empirical research, this study aims to examine the effect of mispricing on investment companies through fundamental financial constraints on manufacturing companies in Indonesia.

RESULTS AND DISCUSSION

This study will use data from 2010 to 2015, all data required in this study will be obtained from Bloomberg data, OSIRIS capital market database of Indonesia Stock Exchange. Analysis of this research data will issue a sample of companies belonging to the financial industry because the company generally has a relatively small physical capital investment (Chang et al., 2004).

This study adopted a sample classification approach based on a financial constraint approach that refers to the study by (Chang et al. 2007). The research used the initial classification of samples based on dividend payout status. Companies paying dividends are categorized as low financial constraints (FCRs), whereas firms that do not pay dividends are included in the category of high financial constraint (FCT). Furthermore, to predict the Fundamental Financial Constraints on their arrival they use some relevant financial variables to predict dividend levels. This process is referred to as objective multivariate classification. This is done to correct the initial classification based on the
dividend payout. This research will use modified logit model to get correction or prediction classification based on the consideration that logit model is more loosely to assumption of multivariate normal distribution.

Logit analysis model for financial constraint prediction (FC) based on financial variables. Current Ratio and Profitability base financial constraint's.

\[
F_{Ci} = \ln \left( \frac{P_i}{1 - P_i} \right) = \alpha_0 + \beta_1 CR + \beta_2 PROFIT + \beta_3 PLB + \beta_4 SLACK + \beta_5 LD + \epsilon_{i,t}
\]

\[
Z = \alpha_0 + \beta_1 KP_{i,t}
\]

\[
P_i = \frac{1}{1 + e^{-Z}} = \frac{e^Z}{1 + e^Z}
\]

Dimana:

- \(F_{Ci}\) = Financial constraint based on logit model
- \(CR\) (Current Ratio) = Current asset / Current Debt
- PROFIT = Operation earning / Total asset
- PLB (change of earning) = Positive changes: 1, Negative Profit Change: 0
- SLACK = [Cash + Short Term Investment + Inventory + Receivables – Short Term Debts] / Assets
- LD = Retained earning / Asset
- \(Pi\) = Probability
- \(e\) = eksponsensial Value

The result of the fundamental probability estimation of financial constraint in equation (iii) is used as an objective criterion to distinguish a group of companies based on financial constraint. If the probability of \(Pi\) is greater than the probability of cut off (\(Pi > Pc\)) then the firm falls into the category of FCR (1), if \(Pi < Pc\), the company falls into the FCT category (0). Determination of cut off value (dividing probability) is based on observation of the actual dividend policy. For example, based on actual observations found that 35% of firms enter the FCR and 65% enter the FCT, then the cut off value is 35%. This classification process will then result in two groups of companies, namely groups with high financial constraints (FCT) and companies with low financial constraints (FCR).

Sensitivity Financial constraint

The sensitivity of Mispricing’s influence to the level of corporate investment will be different due to the condition of Fundamental Financial Constraint companies. Where the sensitivity will be seen greater in companies with Fundamental Financial Constraint higher than companies with Fundamental Financial Constraint. In this test, the company will be classified into two groups as a company with Fundamental Financial
Constraint trend (FFCL, dummy = 1) and a company with Fundamental Financial Constraint (FFCH, dummy = 0). This classification process is done in two stages, the first stage is based on the dividend payout status (pay dividend / FFCL, dummy = 1 and pay no dividend / FFCH, dummy = 0) and the second stage is the classification of correction using logit model by considering the variables, Variables that affect the condition of Fundamental Financial Constraint companies. The Fundamental Financial Constraint Company status will be used as a moderating variable (with dummy variable) between Mispricing and Investment. Observation of actual dividend policy on 568 observations indicates that 30% of companies (157 observations) were included in the group with Fundamental Financial Constrain (FFCL) and 70% (411 observations) included in the Fundamental Financial Constraint group (FFCH). So the cut-off value to be used is 30%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefisien</th>
<th>Wald statistic</th>
<th>Nagelkerke’ R square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1,426</td>
<td>40,436***</td>
<td>0.235</td>
</tr>
<tr>
<td>CR</td>
<td>-0,064</td>
<td>1,564</td>
<td></td>
</tr>
<tr>
<td>PROFIT</td>
<td>3,666</td>
<td>11,562***</td>
<td></td>
</tr>
<tr>
<td>PLB</td>
<td>-0,133</td>
<td>0,416</td>
<td></td>
</tr>
<tr>
<td>LD</td>
<td>1,526</td>
<td>24,389***</td>
<td></td>
</tr>
<tr>
<td>SLACK</td>
<td>1,084</td>
<td>3,834**</td>
<td></td>
</tr>
</tbody>
</table>

** = Significant $\alpha = 5\%$

*** = Significant $\alpha = 1\%$

The result of logit model regression in Table 4.6 (full result in Appendix 5) shows that the R square value of 23.5 percent and the variables that can be used to predict the Fundamental Financial Constraint company's status are: PROFIT, LD and SLACK, as the Fundamental Financial Constraint:

$$K_{P_i} = \ln \left( \frac{P_i}{1 - P_i} \right) = -1,426 + 3,666 \text{PROFIT} + 1,084 \text{SLACK} + 1,526 \text{LD}$$

Based on the above model the number of observation predictions included in the classification of companies with Fundamental Financial Constraint Low (FFCL) as much as 322 observations (55%) while those included in the classification of companies with Fundamental Financial Constrain High (FFCH) is 267 (45%) Observation. When compared with the actual observation then the overall model above has a prediction ability to a large enough data that reaches 73%.
In testing the hypothesis, the number of observations on the classification of funding constraints (589 observations) used will be adjusted to the number of observations contained in other variables. The adjustment process resulted in the number of observations to be used as many as 452 observations with details: Companies with low Fundamental Financial Constraint (FFCL) of 280 observations (66.%) and companies with Fundamental Financial Constraint (FFCH) as many as 153 observations (34.%).

Table 1.3 above shows the mean of all variables (except for mispricing variables) having significant differences based on the Fundamental Financial Constraint status (test results are seen in appendix 8e). The average investment rate of companies with Fundamental Financial Constraints (FFCL) is almost three times higher and the level of investment is also FFCH. The average investment of FFCL companies reaches 42.5 percent and tends to be overinvested because the average total investment is only 33.4 percent, otherwise the FFCH company has an average investment of only 15.7 percent or about 53 percent Lower than the average investment of 33.4 percent (annex 8c and 8d). This may indicate that the FFCL company is more willing to invest than the FFCH
company or because the FFCL company has a greater investment opportunity than the FFCH company.

The investment variation of FFCL corporation actually looks lower that is only 19.8 percent compared with FFCH company which reached 33.1 percent. The high variation in investment in FFCH companies may indicate that the range between the ideal level of investment and the average achieved today is still quite high (compared to FFCL firms) due to limited access to funding sources. This can be seen in the average FFCH firm's lower average investment grade of 53 percent of the average total sample over the FFCL company which is 27.2 percent higher than the total average.

FFCL companies that have an average grade of mispriced higher than FFCH companies can be interpreted to be a better trust and perception of investors to FFCL companies than FFCH companies. This can also be seen by the low variations in cash flow and company sales because variations in cash flow are also often used as an indicator of investor investment risk and on the other hand sales are the main cash source. While low Leverage signifies the less interest the company will incur for the debtor and consequently the greater the cash available for the stock investor.

The FFCL company also appears to have a higher average cash flow (Cashflow), business life-cycle (Year) and Cash rate than the FFCH company. But it has lower debt capacity (Leverage) and Sales. Lower FFCL corporate debt capacity is understandable because companies with such a status are characterized by lower debt capacity than FFCH firms, while a higher level of sales at FFCH companies may indicate an effort by the FFCH company to further increase sales of improving the ability Internal funding because they have limited access to high external funding. Testing uses two test models namely the main model and robustness test model but with additional variable moderation Fundamental Financial Constraint as variable moderation.
1.4. Regression Model Result

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable Dependent</th>
<th>Variable Independent</th>
<th>Coefisien</th>
<th>t statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>Investment (INV)</td>
<td>Constanta</td>
<td>0,119</td>
<td>4,421***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mispricing</td>
<td>0,036</td>
<td>3,462***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cashflow</td>
<td>0,143</td>
<td>1,759*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Year</td>
<td>0,001</td>
<td>1,120</td>
</tr>
<tr>
<td></td>
<td>Robustness Test</td>
<td>KP&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0,257</td>
<td>9,272***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KP*MIS</td>
<td>-0.029</td>
<td>-1,902*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Konstanta</td>
<td>0,494</td>
<td>10,178***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mispricing</td>
<td>0,031</td>
<td>3,355***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cashflow</td>
<td>0,124</td>
<td>1,696*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Year</td>
<td>0,001</td>
<td>1,335</td>
</tr>
<tr>
<td></td>
<td>Robustness Test</td>
<td>Leverage</td>
<td>-0.328</td>
<td>-8,174***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cash</td>
<td>0,164</td>
<td>1,242</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sales</td>
<td>-0.327</td>
<td>-5,868***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KP&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0,125</td>
<td>4,535***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KP*MIS</td>
<td>-0.022</td>
<td>-1,630</td>
</tr>
</tbody>
</table>

Significant α = 10 %
** = Significant α = 5 %
*** = Significant α = 1 %
a = dummy variable: FFCL = 1, FFCH = 0

Table 1.4 shows that the independent variables of mispricing and the status of Fundamental Financial Constraints have an influence on the level of investment in both models. If we compare the results of the model hypothesis with the main model in the first hypothesis, it is seen that the status of Fundamental Financial Constraint strengthens the effect of mispricing on the level of investment. The regression coefficient of mispricing variables increased from 0.021 to 0.036. This indicates that the status of Fundamental Financial Constraint (level of funding availability) affects the level of investment company.

However, the interaction testing between the two indicates that the role of moderation of the Fundamental Financial Constraintanya status is valid on the main model. The negative modeled coefficient of negative (KP * MIS) in both models indicates that companies with low Fundamentals of Financial Constraints (FFCL) have a mispricing effect of the sensitivity to lower investment rates of firms Which has a high Fundamental Financial Constraint (FFCH), but because in statistical tests, generally the best estimate is the result of estimation derived from the model that has the most control variables.
CONCLUSION

The research shows that the independent variables of mispricing and the status of Fundamental Financial Constraints have an influence on the level of investment in both models. If we compare the results of the model hypothesis with the main model in the first hypothesis, it is seen that the status of Fundamental Financial Constraint strengthens the effect of mispricing on the level of investment. The regression coefficient of mispricing variables increased from 0.021 to 0.036. This indicates that the status of Fundamental Financial Constraint (level of funding availability) affects the level of investment company.

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REFERENCES


