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Research paper

Equity Issue and a Long-Term Effect of Equity Market Timing on Capital Structure

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Abstract

After the research about a short term effect of equity market timing on capital structure, the author is motivated to do research about a long term effect of equity market timing on capital structure of the firms which is listed in Indonesia Stock Exchange. The main problems on this research are to understand whether firms use equity market timing theory when issuing equity, and whether equity market timing has a long term effect on its capital structure. Then the purpose of this study is to examine the problems of this research. There are two hypothesis in this research. First, firms use equity market timing when issuing equity, and second, equity market timing has a long term effect on capital structure of firms in Indonesia. This research uses non-financial companies listed on the Indonesia Stock Exchange over the period of 2001 to 2011 as the sample. The data used in this research are panel data. The sample choosing is based on sample non-probability sampling using purposive sampling in form of judgment sampling. The research model used in this study is a distributed-lag regression model. The results of this research show that firms use equity market timing when issuing equity, and equity market timing does not have a long term effect on capital structure of firms in Indonesia. Thus, because there is deviation on the capital structure, then there is an indication that the firms will perform the process of speed adjustment towards the targeted capital structure, the optimum capital structure.

Keywords: *Equity issue; capital structure; equity market timing.*

1. Introduction

1.1. Background

Baker and Wurgler (1) present capital structure theory that is different from the prior one. They state that market timing theory is contradictory with trade-off and pecking order theories. According to this equity market timing theory, firms issue share equity depending on the relative price. When the price of the equity is higher than the price of other securities, firms tend to issue equity. In other words, this theory suggests that firms tend to issue equity when the market price of equity is higher than the book value of equity, and tend to repurchase equity when the market price is low. Moreover, on the external funding policies, firms tend to do external funding when the equity price is low and tend to debt when otherwise.

Equity market timing has a short and a long-term effect on capital structure (2, 3). A short-term effect of market timing on capital structure is the effect of last year's equity market price on the current capital structure, or the effect of current equity market prices on the capital structure one year later. A long-term effect of market timing on capital structure is when the historical market value (price) in several years prior affecting current capital structure. In order to determine a long-term effect of equity market timing on capital structure, Baker and Wurgler (1). Weigl (3) use the historical market-to-book ratio and show that the historical market-to-book ratio as a proxy for historical market value is negatively related to capital structure in the current period. Even when capital structure declines, the firms do not rebalance its capital structure to get to the targeted capital structure, i.e. the optimum capital structure. Conversely, on the theory of dynamic trade-offs, firms will always rebalance or make a process of speed adjustment to get to the targeted capital structure, the optimum capital structure (4).

Based on the research about the usage of equity market timing on capital structure, Baker and Wurgler (1) conclude that capital structure is the cumulative outcome of attempts to time the equity market. Many researchers have conducted research on equity market timing and its a short-term effect on the firms' capital structure in Indonesia. Therefore, this research is mainly focused on a long-term effect of equity market timing on capital structure in Indonesian firms.

There are several researchers that disagree with the findings of Baker and Wurgler (1), one of them is (5). Despite the same research object as their research, he concludes that the historical average market-to-book ratio does not cause the capital structure to decrease due to market equity timing events. He finds that the effect of issuing equity on leverage is small and transient. Nonetheless, he suggests that issuing equity is done when the market-to-book ratio is high. He states that the proxy of market timing does not significantly influence long-term effects on capital structure. The finally, he concludes that the historical market value, calculated by the weighted average market-to-book ratio of external financing, has a significant effect on current funding and investment decisions. He argues that the weighted average market-to-book ratio contains information on growth opportunities not captured by the current market-to-book ratio.

Most of the above empirical studies support Baker and Wurgler (1). Therefore, this study refers as they have done. There are several studies of equity timing markets and short-term effects on the

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firm's capital structure in Indonesia, but empirical studies of equity market timing and long-term influence on capital structure is not sufficient, and the findings are different from one to another. With a limited sample, (6)has examined a long-term effect of market timing on capital structure on manufacturing firms whose IPOs were 2000-2008 listed on the Indonesia Stock Exchange. The results show that equity market timing is used in corporate financing and equity market timing has a long-term effect. On the contrary, using a sample of Indonesian companies whose IPOs, 2001-2002, the finding of (7) shows that equity market timing is not persistent for the long-term impact of corporate capital structure in Indonesia.

1.2. Research Problems and Purposes

This research is done on non-financial firms listed in Indonesia Stock Exchange. Based on the background explained above, the main problems of this research are 1) whether firms use equity market timing theory when issuing equity, and 2) whether equity market timing has a long term effect on capital structure of firms in Indonesia. In addition to that, the main purpose of this research is to test these problems on non-financial firms listed in Indonesia Stock Exchange between 2000-2011.

1.3. Research Contribution

The results from this research are expected to give theoritical, empirical, and practical benefit for firms management, investor, economic analyst, and academician that explains which capital structure theory that is applied on firms in Indonesia in doing firm's external funding. Moreover, it is also expected to help the investors as consideration factor on deciding when they purchase or sell equity.

2. Literature Review and Hypotheses Development

2.1. Theory Review

Market-to-book ratio (M/B) of equity has two roles in empirical studies. First, M/B is used as proxy of equity market timing to measure market misvaluation. Elliot et al., (8) say that if M/B is bigger than 1 (one) which indicate over-valuation and vice versa. Managers issue equity when equity price is irrationally high caused by the high M/B . Managers repurchase equity when equity price is irrationally low caused by the low M/B .

Second, M/B can be used as proxy of future growth probability in trade-off theory that assume efficient market. Firms with high M/B will have higher growth because they prefer low leverage to keep their funding flexible {Mahajan, 2007 #19;Myers, 1984 #23. However, this research will use M/B as the first role that is to measure equity market price and market misvaluation.

Baker and Wurgler {Baker, 2002 #28} and the other researchers that use market-to-book ratio as a proxy to measure whether market timing is used when issuing equity. Firms tend to issue equity when the lagged M/B is high and repurchase when otherwise. Then, historical market-to-book ratio is used to capture effect cumulatif outcome of equity market timing on capital structure. The cumulative outcome is a long-term effect of equity market timing on capital structure. If equity market timing does have a long-term effect, it means that historical market-to-book ratio has negative effect on leverage.

2.2. Hypothesises Development

2.2.1. Equity Market Timing is Used When Issuing Equity

Baker and Wurgler (1) state that when stock price is high, firms do external funding using equity since by the higher stock price, the cost of equityy is lower. Thus, the stock market price does have negative effect on leverage or capital structure. This finding is supported by the research done by (9). They find that stock price represented by market-to-book ratio has a negative effect on leverage. Rajan and Zingales (9)predict that firms with high market-to-book ratio have higher financial distress. This argument is in line with the trade-off theory that firms with high market-to-book ratios mean high growth and investment that can lead to low free cash flow. To avoid financial distress, firms with high market-to-book ratio choose low leverage (10). Leverage is used to represent the capital structure. According to (4), their research is also supported by the finding of (11) that state that there are positive effects of market-to-book ratio on equity issue.

According to Rajan and Zingales (9), the other argument of the negative effect of market-to-book ratio on leverage is the firm's tendency to issue equity when its stock value is relatively higher than the book value. This argument is relevant with that of (1, 3-5, 12), replicate the work of (9), and find that market value represented by market-to-book ratio does have negative effect on leverage both measured by book leverage and market leverage. This findings show that equity market timing is used when deciding firm's external funding.

The results of research conducted both by (2, 13) indicate that there is a tendency when hot market, both on the IPO and SEO (seasoned equity offering), the company issued more equity than the cold market, which means that there is an equity market timing. Accordingly, the company uses equity market timing when issuing the equity. Hot market shows its market value is high and cold market shows its market value is considered low by the market. According to (14, 15) that the firm's hot market has positive effect on equity issuance activity.

Using a distributed-lag regression model, (3) shows that lagged market-to-book ratio has a positive effect on equity issuance. Therefore, based on the results of the research mentioned above, this research proposes hypothesis 1 (H1) which can be formulated as follows:

H_1: Firms in Indonesia use equity market timing theory when issuing equity

2.2.2. A Long-Term Effect of Equity Market Timing on Firm's Leverage

To determine a long-term effect, (16) use a regression model involving current data on the dependent variable and lagged or pasted time on the independent variable (explanatory). A long-term effect of market timing on capital structure is the influence of historical market conditions several years ago on the current capital structure. According to Baker and Wurgler(1) that high market value of equity and historical market value can decrease leverage. The value of the historical equity market means the market value of equity in a long-term (several years). Equity market timing affects leverage, and the effect is negative due to the high historical market value being the company's consideration for issuing equity (17). In examining the effect of historical market value on leverage, Baker and Wurgler(1) use determinants affecting capital structure, as introduced by (9), as control variables.

Bruinshoofd and Haan (18) conduct a study of a long-term effects of equity market timing on capital structures in several countries, i.e. companies in the United States, United Kingdom and in continental European countries. United Kingdom (UK) is a union of United Kingdom countries consisting of England, Scotland, Wales and Ireland. Continental European countries are European countries outside the UK. They test a long-term effect of equity market timing on capital structure using historical market value, that is, by using historical market-to-book ratio historical as proxy. Their results state that in US firms, equity market timing has a long-term effect on capital structure, but on firms in the UK and in continen-

tal European countries, equity market timing does not have a long-term effects on capital structure.
Huang and Ritter (19) support(1), and the results of their study show that historically, equity issue affected by an equity risk premium affects the capital structure and the firm adjusts slowly toward targeted leverage. The gradual adjustment process shows that there is a long-term effect of equity market timing on capital structure. Xu(4) states that market timing measured by historical market-to-book ratio does have negative effect on capital structure of firms in US, while it does not negative effects on that of firms in Canada. Thus, on firms in US, equity market timing does have long-term effect on capital structure, while it does not on firms in Canada.
Manurung (20) studies about optimum capital structure of manufacture firms listed in Indonesia Stock Exchange (ISE) using data from 1990 untul 2010. The study shows that there are no optimum capital structure since there are no a process of speed adjustment towards the optimum capital structure. In addition to that, it shows that there are indication that equity market timing theory is occurred and equity market timing does have long-term effect on capital structure. By using the manufacture firms in period 2001-2008 as the sample, (21) undertake research about the adjustment process towards optimum capital structure. Their research results show that there are some that acquired the optimum capital structure from the dynamic adaptation process. However, on other industries, there are some research results showing that there are some process adjustments on capital structure that are slow and indicating that equity market timing does have long-term effect on capital structure. Based on the research above, this research proposes hipothesis 2 (H2) as follows:
H2: Equity market timing has a long-term effect on capital structure of the firms in Indonesia.

3. Methodology

3.1. Research Data and Sample

The sample of this research is non-financial firms listed in Indonesia Stock Exchange (ISE) from period 2001-2011. The sample choosing is based on sample non-probability sampling using purposive sampling in form of judgment sampling (22). The data are obtained especially from the firms financial reports. The statistical summary, consisting the relation between firms characteristic and the funding policy from the same period, is presented in this research.
This research uses panel data or pooled data, which is the combination of time series and cross-section data. While testing the hipotheses, equity market timing is not only be tested on IPO (initial public offering), but also on SEO (seasoned equity offering) and right issue as well.

3.2. Operational Definition and Variable Measurement

The hipotheses will be tested using a distributed-lag regression model. Capital structure is measured by leverage and it will be the main variable or dependent variable since all of the market timing test is used to see the effect of equity market timing on capital structure or leverage. When firms issue equity, the leverage will decrease and vice versa. In order to get the best result, lagged leverage (leverage on period t-1) is used as a control variable to test a long term effect of equity market timing on capital structure. Lagged leverage has a negative effect on current capital structure or leverage (period t).
To test market timing, net equity issue is needed as the dependent variable regarding hipothesis 1 (H1) test, whether firms use equity market timing when doing net equity issue. Equity market value or price is measured by lagged market-to-book ratio (M/B) and this research expects a result that lagged M/B has a positive effect on net equity issue.
Hipothesis 2 (H2) test uses historical M/B as independent variables which are measured by equity finance weighted average (eqwa) and notated as M/B_{EQWA}. In this research, historical M/B is expected to have a negative effect on capital structure. Asset tangibility is net plant, property, and equipment notated by (PPE). Lagged PPE divided by total assets (PPE/A) is used as a control variable and is expected to have a positive effect on capital structure since the tangible asset itself can be used as debt guarantee.
Profitability is measured from earnings before interest, taxes, and depreciation (EBITDA) divided by total book assets (A) and is expected to have negative effect on capital structure as implemented in pecking order theory. When firms need funds and have profitability, their funding needs will be made by retained earnings. When retained earning rises, leverage decrases. Size is measured from net sales, and in test model, size is measured by log net sales (log S). Lagged (log S) is expected to have a positive effect on capital structure since this variable could be the proxy to decreace loss probability. Retained earnings is also one of the control variable to test the robustness on the first hipothesis (H1). The result test of hipothesis could be stated as robust only when it is still consistent even after this new control variable is added in the test.
In summary, notation, formula and variable definition used in this research are presented in Table 1 bellow:

Table 1: Notation, Formula, and Variable Definition

Num	Notation/Formula	Definition
1	A	Total book assets = total debt plus book equity
2	*BL*	*Book leverage* is total debt (D) divided by total book assets (A)
3	D	*Total liability*, is total debt which are printed in the balance sheet, and total debt = short-term debt + long-term debt
4	E	Equity (*book equity*), is the equity value which are in the balance sheet
5	e/A	Net equity issue (e) = (the change book equity – the change in retained earnings) then divided by total book assets (A).
6	EBITDA/A	Earnings before interest, taxes, and depreciation (EBITDA) divided by total book assets (A)
7	L	*Leverage*, either *book leverage* (BL) or *market leverage* (ML).
8	Log (S)	The logarithm of net sales
9	M	Market value of asset = total debt + market capitalization
10	*M/B*	Market-to-book ratio = *market equity* divided by *book equity*, as the proxy to measure equity market, and often labeled as the equity market timing proxy
11	M/B_{EQWA}	Historical M/B that attained from M/B equity finance weighted average
12	*ML*	Market leverage = total debt divided by total asset market value
13	PPE/A	Net property, plant, and equipment (PPE) divided by total assets (A)
14	RE/A	retained earnings (RE) divided by total assets (A)

3.3. Research Model and Hipothesis Test

3.3.1. The First Hypothesis (H1) Model: Firms Use Equity Market Timing on Net Equity Issue

Derived from several empirical study results, H1 test model is that lagged market-to-book ratio has a positive effect on net equity issue. By using panel data, the distributed-lag regression formula on H1 test is as follows:

$$\left(\frac{e_t}{A_{i,t}}\right) = \alpha_0 + \alpha_1\left(\frac{M}{B}\right)_{i,t-1} + \alpha_2\left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_3 \log(S)_{i,t-1} + \alpha_4\left(\frac{PPE}{A}\right)_{i,t-1} + \epsilon_{i,t-1} \quad (1)$$

With t test, H1 regression formula model (1) is supported if statistically $\alpha_1 > 0$, which means there is a significant negative effect from lagged market-to-book ratio on net equity issue

3.3.2. The Second Hypothesis Model (H2): A Long-Term Effect of Equity Market Timing on Leverage

Xu (4) test the long-term effect of equity market timing on capital structure using historical market value measured by the weighted average of historical market-to-book ratio. Based on the research, this research uses equity finance weighted average market-to-book ratio (MB_{EQWA}) as proxy of weighted average of historical market-to-book ratio.

$$MB_{EQWAt} = \frac{\sum_{s=0}^{t-1}[e_s \times (MB\ Ratio)_s]}{\sum_{r=0}^{t-1} e_r} \quad (2)$$

Notation e is the net equity issue. Period r or s = 0 shows the period when firms start IPO or shows the first period.

H2 test also use distributed-lag regression model analysis which involves present data as dependent variable, lagged/past data as independent variable. Since it is used to test the long-term effect, the lagged data for the independent variable consist of several years of data. On the other hand, the independent variable used to test H2 is the historical market value measured from historical market-to-book ratio (historical M/B) from more than 1 year. To test H2, this research uses two model. The first model of H2 is based on (4) and(17) that the historical M/B has a negative effect on firm's leverage. The distributed-lag regression formulation the first step model is as follows:

$$L_{i,t} = \alpha_0 + \alpha_1 MB_{eqwa,i,t} + \alpha_2\left(\frac{M}{B}\right)_{i,t-1} + \alpha_3\left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_4 \log(S)_{i\ t-1} + \alpha_5\left(\frac{PPE}{A}\right)_{i,t-1} + \epsilon_{i,t} \quad (3)$$

Through t test, the first step H2 test model is supported when the distributed-lag regression model formula (3) statistically $\alpha_1 < 0$ and it means that there is a significant negative effect from equity finance weighted average of market-to-book ratio ($MB_{EQWA,t}$) on book leverage in period t. The second model use the cumulative change of leverage as dependent variable, historical market value of stock equity as the independent variable, and other several control variables (1, 2). The historical market value is also measured by historical M/B from several years before.

When equity market timing has a long-term effect on capital structure, the cumulative change of leverage should reflect the effect of market condition or equity market value from several years after IPO continuously (2). Therefore, second step H2 test model is *historical M/B* having a negative effect on firm's the cumulative change of leverage.

Regression model formula of the second step H2 is as follows:

$$L_{i,t} - L_{i,th2000} = \alpha_0 + \alpha_1 MB_{eqwa,i,t} + \alpha_2\left(\frac{M}{B}\right)_{i,t-1} + \alpha_3\left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_4 \log(S)_{i,t-1} + \alpha_5\left(\frac{PPE}{A}\right)_{i,t-1} + \alpha_6 L_{th2000} + e_{i,t} \quad (4)$$

Notes:

The cumulative change on leverage (L) in form of $BL_{i,t} - L_{i,th2000}$ = the cumulative change of book leverage is the dependent variable. By using t test, the second step H2 test on formula (4) is supported when statistically $\alpha_1 < 0$ and it means there is a significant negative effect of historical market-to-book ratio from period t on the cumulative change of leverage.

4. Results and Findings

4.1. Research Sample Description

The sample choosing is based non-probability sampling using purposive sampling in forms of judgment sampling(22). Numbers of the firms in this sample are 246. The sample of this research is non-financial firms listed in Indonesia Stock Exchange (ISE) from period 2001-2011 without concerning about the IPO. This research uses panel data, the combination of time series and cross section data. The data used to perform hypothesis analysis are derived from the annual report and the Indonesia Capital Market Directory (ICMD) provided by ISE.

4.2. Research Variable Description

Table 2 below presents the statistics descriptions of variables used in this research on firms listed in ISE in 2001-2011. The average of net equity issue divided by total asset (e/A) is 0.0373 meaning that in general the net equity issue divided by total assets is 3.73%. The average of market-to-book ratio is (M/B) is 1.6280 which means in general the market-to-book ratio is 1.6280. The positive value of net equity issue average is suspectedly caused by the market-to-book ratio average being more than one. Thus, there are indication of firms using equity market timing when issuing equity. Average earnings before interest, tax, and depreciation divided by total assets (EBITDA/A) is 0.0882. Average log of sales [Log(S)] is 5.7046, which means in general the log of sales is 5.7247, and is equal IDR 530,517,848,900. The average net property, plant, and equipment divided by total assets (PPE/A) is 0.3593, meaning that in general it is 35.93%. Average BL is 0.5259, which means that in general the book leverage (BL) is 52.59%. Average ML is 0.2747, which means that in general market leverage is 27.47%. The average BL is bigger than the average ML because the average M/B is bigger than 1.

Table 2: Statistics Variable Description (Panel Data Sample 246 Firms)

Variable	Mean	Maximum	Minimum	Std. Dev.
e/A	0.0373	0.9960	-0.9883	0.1326
M/B	1.6280	21.2000	0.0300	2.0282
EBITDA/A	0.0882	0.8982	-0.9155	0.1144
Log(S)	5.7247	8.2110	1.9912	0.8364
PPE/A	0.3593	6.6086	0.0000	0.2701
BL	0.5259	0.9990	5.80E-08	0.2300
ML	0.2747	0.9975	0.0001	0.2331
M/Beqwa	2.0966	23.6471	2.75E-11	3.2609
ΔBL	-0.0011	0.9147	-0.9955	0.1869
ΔBL_{th2000}	0.0095	0.9934	-0.9864	0.3053
ΔML_{th2000}	0.0048	0.9975	-0.9596	0.3436

Table 2 presents the summary of statistic variables description in this research using 246 firms as the sample.

4.3. H1 Test Result and Discussion: Lagged Market-to-Book Ratio Has Positive Effect on Net Equity Issue

Table 3 shows the panel data regression results consisted from common effect, fixed effect, and random effect. Through Restricted F and Hausman test, the chosen and the best estimator is fixed effect. The selected estimator has been tested with a series of classical assumption tests and the results have passed. The dependent variable used in this model is net equity issue (e/A).

Table 3: Hypothesis 1 Test Results using Common Effect, Fixed Effect, and Random Effect

$$\left(\frac{e_{i,t}}{A_{i,t}}\right) = \alpha_0 + \alpha_1\left(\frac{M}{B}\right)_{i,t-1} + \alpha_2\left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_3 \log(S)_{i,t-1} + \alpha_4\left(\frac{PPE}{A}\right)_{i,t-1} + \propto_5 BL_{i,t-1} + \epsilon_{i,t}$$

Independent Variable	Coef. Mark	Common Effect		Fixed Effect		Random Effect	
		Coef.	Prob.	Coef.	Prob.	Coef.	Prob.
Constant		0.0638	0.0000	0.0895	0.0344	0.0652	0.0000
$(M/B)_{i,t-1}$	+	0.0030	0.0022***	0.0047	0.0001***	0.0030	0.0019***
$(EBITDA/A)_{i,t-1}$	-	-0.0328	0.0803*	0.0160	0.6013	-0.0298	0.1204

LOG (S) $_{i,t-1}$	-	-0.0110	0.0000***	-0.0239	0.0011***	-0.0116	0.0000***
(PPE/A) $_{i,t-1}$	-	-0.0098	0.1619	-0.0171	0.1374	-0.0102	0.1575
BL $_{i,t-1}$	+	0.0262	0.0046***	0.1104	0.0000***	0.0298	0.0016***
Adjusted R^2		0.0184		0.0602		0.0187	
Statistics F		8.0416	0.0000***	1.5022	0.0000***	8.1474	0.0000***
Number of Observations		1,873		1,873		1,873	
Notes: Fixed effect is chosen and H1 is proven because $\alpha_1 > 0$ statistically as expected.							

Table 4: The First H2 Test Results (The Book Leverage as The Dependet Variable)

$$BL_{i,t} = \alpha_0 + \alpha_1 MB_{eqwa,i,t} + \alpha_2 \left(\frac{M}{B}\right)_{i,t-1} + \alpha_3 \left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_4 \log(S)_{i,t-1} + \alpha_5 \left(\frac{PPE}{A}\right)_{i,t-1} + \epsilon_{i,t}$$

Independent Variable	Coef. Mark	Common Effect		Fixed Effect		Random Effect		Fixed Effect Cross-Section Weighted (GLS)	
		Coef.	Prob.	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.
Constant		0.0785	0.041	0.5213	0.000	0.3709	0.000	0.0650	0.005
M/Beqwa	-	0.0043	0.006	0.0062	0.129	0.0054	0.042	0.0052	0.000
(M/B) $_{i,t-1}$	-	0.0024	0.401	-0.0002	0.892	0.0002	0.894	0.0020	0.157
(EBITDA/A) $_{i,t-1}$	-	-0.4436	0.000***	-0.1818	0.000***	-0.2187	0.000***	-0.4509	0.000***
LOG (S) $_{i,t-1}$	+	0.0763	0.000***	-0.0037	0.742	0.0224	0.017***	0.0767	0.000***
(PPE/A) $_{i,t-1}$	+	0.0713	0.000***	0.0535	0.002***	0.0566	0.000***	0.0877	0.000***
Adjusted R^2		0.1109		0.6966		0.0234		0.3271	
Statistics F		40.0700	0.000***	19.538	0.000***	8.5303	0.000***	153.274	0.000***
Observation Number		1,567		1,567		1,567		1,567	
Notes: The chosen method is fixed effect cross-section weighted (GLS), and the first H2 test result with BL as dependent variable is shown not proven because $\alpha_1 > 0$ statistically which is not as expected.									

Table 5: The Second H2 Test Result (The Cumulative Change of Book Leverage as The Variable Dependent)

$$BL_{i,t} - BL_{i,2000} = \alpha_0 + \alpha_1 MB_{eqwa,i,t} + \alpha_2 \left(\frac{M}{B}\right)_{i,t-1} + \alpha_3 \left(\frac{EBITDA}{A}\right)_{i,t-1} + \alpha_4 \log(S)_{i,t-1} + \alpha_5 \left(\frac{PPE}{A}\right)_{i,t-1} + \alpha_6 BL_{i,2000} + \epsilon_{i,t}$$

Independent Variable	Coef. Mark	Common Effect		Fixed Effect		Random Effect		Fixed Effect Cross-Section Weighted (GLS)	
		Coef.	Prob.	Coef.	Prob.		Coef.	Prob.	Coef.
Constant		-0.0221	0.670	-0.2418	0.024	-0.1247	0.117	-0.0320	0.1347
M/Beqwa	-	0.0029	0.193	0.0212	0.000	0.0088	0.015	0.0041	0.0020
(M/B) $_{i,t-1}$	-	-0.0003	0.929	-0.0049	0.176	-0.0042	0.225	0.0022	0.3153
(EBITDA/A) $_{i,t-1}$	-	-0.2229	0.000***	-0.0623	0.405	-0.1078	0.114	-0.1854	0.0000***
LOG (S) $_{i,t-1}$	+	0.0023	0.795	0.0338	0.073*	0.0176	0.197	0.0030	0.4264
(PPE/A) $_{i,t-1}$	+	0.0386	0.110	0.0125	0.630	0.0226	0.349	0.0573	0.0000***
Adjusted R^2		0.0077		0.5287		0.0049		0.0458	
Statistics F		3.0099	0.010**	531.16	0.000***	2.2965	0.043**	13.4268	0.000***
Observation Number		1,293		1,293		1,293`		1,293	
Notes: The chosen method is fixed effect cross-section weighted, and the second H2 test result with BL-BL_{2000} as dependent variable is shown not proven because $\alpha_1 > 0$ statistically which is not as expected.									

Table 4.2 presents the results summary of regression estimates to test H1. Through Restricted F and Hausman test, the chosen and the best estimator is fixed effect. *** = supported statistically with 1% significance, ** = supported statistically with 5% significance, and * = supported statistically with 10% significance.

On Table 3, the determintant coefficient (Adjusted R^2) on fixed effect is 0.0602 showing that the total of dependent variable variation, net equity issue, could be explained by the 6.02% independent variable variation. On the table, the probability of statistics F on fixed effect is smaller than 5% significance. Therefore, this model could be used to predict the dependet variable, net equity issue, statistically (Kuncoro, 2007).

H1 test results based on t test show that the lagged M/B does have positive effect on net equity issue statistically. The positive effect shows that when lagged M/B rises it will lead equity issue rises as well, and vice versa. This result is in line with the results of the study done by (1-3, 15).

4.4. Hypothesis H2 Test Result: Equity Market Timing Having Long-Term Effect on Leverage

First H2 test with book leverage as dependent variable starts with processing the data to obtained the panel data regression estimation using common effect, fixed effect, and random effect. Trough restricted F and Hausman tests, the chosen and best estimator is fixed effect cross-section weighted (GLS). This estimator has passed the classical assumption tests. The dependent variable used in this model is book leverage (BL).

On Table 4, the determinant coefficient (Adjusted R^2) on fixed effect cross-section weighted is 0.3271 showing that the total variation of BL as the dependent variable could be explained by the variation of the independent variable in amount of 32.71%. Presented in the table, the probability of statistics F on fixed effect cross-section weighted is 0%. It means statistically, the model could be used to predict the book leverage as the dependent variable (23). The regression coefficient α_1 is not relevant with the first H2 test so that M/B_{EQWA} does not have negative effect on leverage. Hence, The first H2 is not statistically proven.

To understand the consistency and persistence of a long-term effect of equity market timing, it is required to do the second H2 test. Table 5 presents the second H2 test regression results consisted from common effect, fixed effect, random effect, and fixed effect weighted (GLS) methods. The dependent variable used is the cumulative change of book leverage on book leverage in 2000 ($BL_{i,t}$ - $BL_{i,2000}$). Through Restricted F and Hausman test, the chosen and best estimator is fixed effect cross-section weighted. This estimator has passed the classical assumption tests.

Table 4 presents the results summary of regression estimation to test the first H2 with book leverage as dependent variable.There are three panel data regression estimator which are common effect, fixed effect, and random effect. Through Restricted F test and

Hausman test, the chosen and the best estimator is fixed effect cross-section weighted (GLS). *** = supported statistically with 1% significance, ** = supported statistically with 5% significance, and * = supported statistically with 10% significance.

Table 5 presents the results summary of regression estimation to test the second H2 with book leverage cumulative change as dependent variable.There are three panel data regressions estimator which are common effect, fixed effect, and random effect. Through Restricted F and Hausman test, the chosen and the best estimator is fixed effect cross-section weighted. *** = supported statistically with 1% significance, ** = supported statistically with 5% significance, and * = supported statistically with 10% significance.

On Table 5, the determinant coefficient (*Adjusted* R^2) on *fixed effect cross-section weighted* is 0.0458 and showing that the total variation of $BL\text{-}BL_{2000}$ as the dependent variable could be explained by the independent variable in the amount of 4.58%. Derived from the table, the probability on statistics F on the methods is 0%, which means that statisically, the model could be used to predict the dependent variable. Through t test, the positive regression coefficient is not as the same as what it is expected. Therefore, second H2 test with the cumulative change of book leverage as dependent variable is not proven.

The first and second H2 test is to test that equity market timing has a long-term effect on firm's capital structure. Based on H2 tests from both steps, every regression coefficient on the historical M/B does not have negative effect on both the leverage and the cumulative change of leverage. This research result is not relevant to the research done by (1, 19).

The H2 test results in this research are in line with the results of the study done by (2, 7, 24), that market timing does not have a long-term effect on capital structure. (18) say that on firms in UK and continental Europe, equity market timing does not have a long-term effect on capital structure. The findings of (7) show that equity market timing is not persistent for a long-term impact of corporate capital structure in Indonesia. The results of this study are also similar to the research undertaken by (4) at Canadian firms and (12) at Tunisia firms and Frenc firms. Therefore, this research can be concluded that capital structure of the firms in Indonesia is not showing the cumulative outcome of attempts to time the equity market.

According to (4), when market timing does not have long-term effect on leverage, the firms undertake the process of speed adjustment toward the targeted capital structure, i.e. optimum capital structure. When there is deviation on the capital structure, the firms will perform the process of speed adjustment towards the targeted capital structure. The process shows the trade-off theory as one of the theories of capital structure. This effect of trade-off theory is relevant to research results achieved by (25, 26).

Darminto and Manurung (25)state that the determinant factors of capital structure according to trade-off theory affect the capital structure of firms in Indoensia. Research done by Surwanti (26) about process of speed readjustment towards targeted capital structure of firms in Indonesia. Her research states that dynamic trade-off theory is applied in Indonesian firms because there is indication that the process of speed adjustment towards targeted capital structure, the optimum capital structure. Based on this research, there is indication that firms in Indonesia use two capital structure theory simultaneously, which are equity market timing and trade-off theory in deciding their capital structure policy. The use of two or more theories simultaneously is relevant to research result done by (27) stating that the capital structure theories are not mutually exclusive.

4.5. Robustness Test

To test the consistency and persistence of this research results, retained earnings are added as the control variable for H1 test model, and replacing the dependent variable with market leverage for H2 test model. The test result on H1 regression model after adding the independent variable is still consistently proven. Moreover, the test result on H2 regression model after replacing the dependent variable with market leverage is also consistenly not proven. Based on that robustness test, this research results are robust that firms Indonesia use equity market timing on net equity issue, and equity market timing does not have a long-term effect on leverage or capital structure of firms in Indonesia.

5. Conclusion

Through the H1 test, the results show that H1 is statistically, consistenly, and significantly proven that firms in Indonesia use equity market timing when issuing equity. Through H2 test, the historical market value represented by MB_{EQWA} does not have a negative effect on the book leverage and on the cumulative change of book leverage. The robustness tests on H1 and H2 are the same and consistent with the prior test. Therefore, this research concludes that firms in Indonesia use equity market timing on net equity issue, and equity market does not have a long-term effect on leverage or capital structure of firms in Indonesia.

According to Xu (4), when market timing does not have a long-term effect on leverage, firms do the process of speed adjustment towards the targeted capital structure, which is optimum capital structure. The process shows the trade-off theory as one of the theories of capital structure. This effect of trade-off theory is relevant to research results achieved by (25, 26).

5.1. Implication

The empirical finding of this research brings out two implication, theoritical and practial implications. First, theoritical implication. This research could explain equity market timing, a capital structure theory, and its effect on capital structure of firms in Indonesia. Second, practical implication. The results of this research are expected to provide direction and guidance for corporate management in Indonesia, especially in issuing equity. To sustain the firms objective achievement which is maximizing firms value, the management should issue equity only when the stock price is high and repurchase it when the stock price is low.

5.2. Limitation and Suggestion

This research does not use sample industrial firms in detail. The tests about equity market timing and its effect on capital structure of firms in Indonesia should also be conducted on firms based on each industry group. Therefore, it is expected to enhance the empirical support to test market timing theory and its effect on capital structure of the firms in Indonesia.

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