



The persistent effect of equity market timing on capital structure during right issue

Wihandaru Sotya Pamungkas^{1*}

Edi Supriyono²

Meika Kurnia Puji Rahayu³

^{1,2,3}Faculty of Economics and Business,
Universitas Muhammadiyah Yogyakarta,
Indonesia.

¹Email: wihandaru@umy.ac.id

²Email: edisupriyono@umy.ac.id

³Email: meika_kurnia@umy.ac.id

Licensed:

This work is licensed under a Creative
Commons Attribution 4.0 License.

Keywords:

Book leverage

Capital structure

Market leverage

Persistent market timing equity

Right issue.

JEL Classification:

G32.

Received: 10 August 2022

Revised: 30 December 2022

Accepted: 16 January 2023

Published: 13 February 2023

(* Corresponding Author)

Abstract

This research aims to find empirical evidence of the persistent effects of market timing equity on capital structure (CS) in Indonesia as measured by book leverage (BL) and market leverage (ML) due to inconsistent results of previous studies, both inside and outside Indonesia. The data was collected from companies that published the right issue (RI) from 2000 to 2019 and listed on Indonesia Stock Exchange. The companies which were used as sample, they had leverage higher than 1. The hypothesis was examined using two types of regression analysis: ordinary least squares regression to examine cross-section and Fama-McBeth regression for testing the panel data. The results of this research uncovered the persistent effect of equity market timing on the capital structure using BL and ML at RI+1, RI+2, RI+3, RI+4, RI+5, and in total, from RI+1 to RI+5. Moreover, a two-pair sample t-test was used to analyze the issuance of new shares or new debt. The results revealed that when RI+1 used ML and RI+3 used BL and ML, the company issued new shares (NEI) in large numbers, so debt issues (NDI) decreased. Further, this research is beneficial for companies to determine the right time during a rights issue to obtain a high share price so that the cost of share capital remains low.

Funding: This research is supported by Universitas Muhammadiyah Yogyakarta (Grant Number: 550/PEN-LP3M/II/2021).

Competing Interests: The authors declare that they have no competing interests.

1. Introduction

Market timing theory is an essential aspect of the company's funding policy because it is related to the cost of capital (Baker & Wurgler, 2022; Jegadeesh, 2000; Loughran & Ritter, 1995). Baker and Wurgler (2022) have summarized the research results that, first, the company issues new shares under favorable market conditions because investors place more emphasis on considering profit prospects and management's assessment of market conditions, i.e., overvalued or undervalued. Second, companies issue new debt under unfavorable market conditions.

Therefore, this research is based on the inconsistent results of previous studies, both inside and outside Indonesia. For example, the research results in Indonesia conducted by Saad and Siagian (2011) unveiled no persistent effect of market timing on CS at IPO+2 (two years after the Initial Public Offering) and IPO+3, while at IPO+4 to IPO+10, there was a persistent effect of market timing. Meanwhile, Fahima, Suharto, and Sulistyowati (2016) uncovered a persistent effect of market timing on CS at IPO+1 and IPO+2, while at IPO+3 to IPO+10, there was no persistent effect of market timing.

On the other side, the results of the study outside Indonesia by Baker and Wurgler (2022) demonstrated that in the United States, there was a persistent effect of market timing on CS from IPO+2 to IPO+10, which was measured using BL and ML. Mahajan and Tartaroglu (2008), utilizing panel data, also uncovered that from IPO+2 to IPO+8 in G7 countries, there was a persistent effect of market timing on CS, determined by employing BL and ML, except for Germany and Italy.

Using a sample from 1992 to 2007, Russel and Hung (2013) obtained the results that the historical market-to-book ratio of the previous year measured using a yearly timing proxy and it had a negative effect on BL at IPO+3, whereas using a long-term timing proxy, it had a positive effect on BL at an IPO+2 up to IPO+10. This

finding concluded that there was no persistent effect of market timing on CS in China. In addition, [Ma and Rath \(2016\)](#), employing a sample from 2001 to 2010, revealed that the historical market-to-book ratio of the previous year measured using the EFWAMB (external finance weighted average market-to-book ratio) proxy had a negative effect on BL and ML. In this regard, EFWAMB is the weighted average market-to-book ratio using the weighting of net equity issues and net debt issues with the sum of net equity issues and net debt issues. The findings, however, indicated that in China, there was a persistent effect of market timing on CS. Hence, [Russel and Hung's \(2013\)](#) findings differ from [Ma and Rath's \(2016\)](#) findings.

On the other hand, [De Bie and De Haan \(2007\)](#) sampled companies in the Netherlands employing BL and ML. [Högfeldt and Oborenko \(2005\)](#) took a sample of companies in Sweden measured using BL and ML. [Xu \(2009\)](#) also calculated a sample of companies in Canada utilizing BL and ML. All of them did not find the persistent effect of market timing on CS.

The current study took a sample of companies that conducted rights issue, it differs from previous research with the following considerations. First, based on literature researches in Indonesia, there has been no research on the persistent effect of equity market timing on CS using a sample of companies that conducted rights issue. Second, old shareholders have the opportunity to buy shares first. Third, stock prices are known to the public so that adverse selection and high prices can be avoided. Fourth, the company conducts a rights issue because it requires significant funds for expansion. Fifth, the old shareholders as controlling shareholders are not willing to issue a large number of new shares after the rights issue because they face a dilemma; if they do not buy the new shares offered, it causes dilution in their ownership ([Högfeldt & Oborenko, 2005](#)). Conversely, when buying new shares offered, there is no guarantee that the company has good prospects in the future. Based on this description, this study aims to answer the research question, i.e., whether equity market timing has a persistent effect on the capital structure of companies conducting rights issue in Indonesia.

2. Literature Review

The primary capital structure theories are the tradeoff theory (TOT), pecking order theory (POT), and market timing theory (MTT) ([Huang & Ritter, 2005](#)). TOT explains that a company tries to adjust its debt level to obtain a targeted debt level for tax savings while avoiding financial difficulties ([Stiglitz, 1969](#)). Underleveraged companies can increase their debt to a certain extent, while overleveraged companies can reduce their debt levels by increasing retained earnings when stock prices are low ([Hovakimian, Opler, & Titman, 2001](#)) and issuing new shares when stock prices are high ([Hovakimian et al., 2001](#); [Jalilvand & Harris, 1984](#)). High and low stock prices can also affect the speed of adjustment to the target debt level ([Hovakimian et al., 2001](#); [Jalilvand & Harris, 1984](#)).

Then, POT elucidates that the company's funding policy follows a hierarchy (order). The first is internal funding sources. Second, if it is insufficient, companies use external funding sources in the following order: long-term debt, convertible bonds, and issuance of new shares as a last resort to avoid information asymmetry ([Myers, 1984](#); [Myers & Majluf, 1984](#); [Myers, 2001](#)). Information asymmetry can cause stock prices fall so that the cost of share capital increases.

POT implies that companies do not consider or have leverage targets but consider risk so that they prioritize internal funding sources ([Myers, 1984](#); [Myers & Majluf, 1984](#)). In this case, the need for funds is determined by investment (increase in fixed assets and working capital) and dividend payments ([Shyam-Sunder & Myers, 1999](#)). POT is a correction of TOT.

POT also assumes that managers act by the interests of shareholders and ignore the differences in interests between old and new shareholders. Shareholders are also passive and act rationally by changing the portfolio if it is not per company policy ([Myers, 2001](#)).

Meanwhile, MTT explicates that the capital structure is the cumulative result of the company's efforts in the past in determining the right time to enter the market so that the company issues new shares under favorable market conditions ([Baker & Wurgler, 2022](#)). MTT is a correction of POT, i.e., the issuance of new shares is not the last resort if the company can determine the right time or favorable market conditions to avoid information asymmetry.

Since asymmetric information causes low common stock prices, it will increase the cost of capital from the common stock. According to MTT, the firms conduct the emission of new stock when the stock price is high, causing the cost of capital of common stock decrease. This decreasing cost of capital will increase the firm's value based on the value of earning capitalization with a constant earning value presumption.

Furthermore, the persistent effect of equity market timing on CS in companies conducting rights issues can occur because, first, after the right issue, the company meets its funding needs by prioritizing the issuance of new shares over the issuance of new debt. After all, the market value of equity is relatively more significant than the book value of equity. It increases the historical market-to-book ratio.

The historical market-to-book ratio measured by the equity finance weighted average market-to-book ratio (EQFWAMB) is the weighted average market-to-book ratio, using the weighting of new share issuance by the sum of new share issuance and new debt issuance as written in the EQFWAMB formula. The issuance of new shares when EQFWAMB is high causes book equity to increase even more due to an increase in excess par value so that leverage decreases. An increase in excess par value implies a decreased cost of common stock.

Second, the company does not adjust the capital structure to obtain the targeted capital structure (Baker & Wurgler, 2022; Xu, 2009). Third, share ownership is not concentrated in the majority shareholder (Högfeldt & Oborenko, 2005), while in Indonesia, institutional ownership as the controlling shareholder is 70.56% (Pamungkas, Haryono, Djuminah, & Bandi, 2017). In a concentrated ownership structure, the majority shareholder is not willing to issue a large number of new shares through a rights issue because the old shareholders (incumbents) face a dilemma; if they do not buy the shares offered, it will result in dilution even though they get the transfer of profits from the new shareholders. Otherwise, they are worried they will not get the expected return if they buy new shares.

Fourth, after the company issues a large number of new shares, the stock price does not decrease, so the value of the market-to-book ratio remains high (Alti, 2006). It implies that EQFWAMB remains high. Fifth, the company does not have financial constraints, so access to the capital market is easier (Saad & Siagian, 2011). Companies with financial constraints and substantial amounts of new shares can cause the market price to decline because investors think the company has a high risk.

2.1. Hypothesis of the Study

Hovakimian et al. (2001) and Jalilvand and Harris (1984) argued that companies issue new shares if the share price is high. In contrast, Hovakimian et al. (2001) stated that companies increase retained earnings if the stock price is low. In addition, Stein (1996) asserted that favorable market conditions are a good time to issue new shares and its profit can be used to finance investments. Baker, Stein, and Wurgler (2003) also affirmed that companies issue new shares because they need funds to finance investments.

Minton and Schrand (1999) expressed that after making investments and experiencing fluctuations in operating cash flows, the company can cause the weighted cost of capital to increase. This increase in the cost of capital is because creditors charge a higher interest rate to offset the risk of financial difficulties. Thus, to avoid this, the company should use funds from share capital by issuing new shares, but managers must be able to determine the right timing. This opinion aligns with the theory of market timing.

Based on MTT, companies issue new shares when market conditions are favorable and buy back shares in unfavorable market conditions (Baker & Wurgler, 2022). The research results by Baker and Wurgler (2022), Mahajan and Tartaroglu (2008), and Saad and Siagian (2011) have proved that there was a persistent effect of market timing on the capital structure of companies conducting IPOs. Furthermore, Bougatef and Chichti (2010) and Mahajan and Tartaroglu (2008) found a persistent effect of equity market timing on the CS of companies conducting IPOs.

The persistent effect of equity market timing on the CS can be identified by looking at the negative effect of the previous year's EQFWAMB on current leverage (Baker & Wurgler, 2022). Leverage can be measured using BL and ML. As previously mentioned, the EQFWAMB method uses the weight of new share issuance by new share issuance and new debt issuance to calculate the weighted average market-to-book ratio. In this regard, when EQFWAMB is high, issuing additional shares lead book equity to become even higher due to an increase in excess par value, lowering leverage. The increase in excess par value implies a reduction in the price of common stock, which lowers the total cost of capital.

EQFWAMB, with a negative effect on leverage, can occur since the proportion of new share issuance is significantly more vital than the proportion of new debt issuance. It leads book equity to increase so that leverage decreases. Based on this description, the following hypotheses could be formulated.

H₁: Persistent equity market timing has a negative effect on CS as measured by BL.

H₂: Persistent equity market timing has a negative effect on CS as measured by ML.

2.2. Research Model

The research model in Figure 1 illustrates the effect of EQFWAMB_{t-1} on Leverage_{t-1} using the control variables: tangibility_{t-1}, profitability_{t-1}, and size_{t-1}. The negative effect of EQFWAMB_{t-1} on Leverage_{t-1} indicates a persistent effect of equity market timing on capital structure.

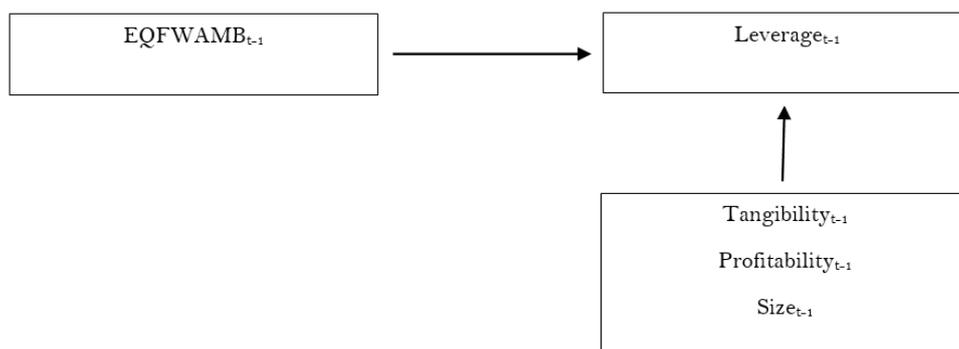


Figure 1. Research model.

3. Methodology

3.1. Population and Sample

This study used a population of companies that carried out rights issues from 2000 to 2019. Meanwhile, the samples in this study were companies outside the financial sector. It was because companies outside the financial sector had not any leverage higher than 1 starting from the pre-right issue (pre-RI) to five years after the rights issue (RI+5).

3.2. Variable's Measurement

The dependent variable used leverage, measured based on BL_t and ML_t . First, BL_t was determined using the formula [(book debt) divided (total debt)]. Second, ML_t was calculated utilizing the formula [(book debt plus market equity) divided (total assets)]. Meanwhile, the main independent variable employed EQFWAMB_{t-1}, was calculated using the following formula (Hovakimian, 2006; Xu, 2009).

$$EQFWAMB_{t-1} = \sum_{s=0}^{t-1} \frac{NEI_s}{\sum_{r=0}^{t-1} NEI_r + NDI_r} \times \left(\frac{M}{B}\right)_s$$

Description:

- NEI : Net equity issues.
- NDI : Net debt issues.
- M/B : Market-to-book ratio.
- s : Now.
- r : Yesterday.
- t-1 : One year before.

NEI_t was calculated using the formula [(book equity_t minus book equity_{t-1}) minus (retained earning_t minus retained earning_{t-1}) divided (total assets_t)]. NDI_t was computed employing the formula [(book debt_t minus book debt_{t-1}) divided (total assets_t)]. The minimum EQFWAMB_{t-1} value was 0. The way to do it is if a negative value was obtained, it was changed to a value of 0 (Baker & Wurgler, 2022; Hovakimian, 2006; Xu, 2009).

Furthermore, the control variable referred to by Baker and Wurgler (2022), consisting of the market-to-book ratio (MB_{t-1}), was calculated using the formula [(equity market value_{t-1}) of division (equity book value_{t-1})]. Tangibility ($TANG_{t-1}$) was measured employing the formula (property, plant, and equipment_{t-1}) and then divided (total assets_{t-1}). Profitability ($PROF_{t-1}$) was estimated utilizing the formula (earnings before interest, tax, and depreciation_{t-1}) and then divided (total assets_{t-1}). Meanwhile, Size_{t-1} was analyzed using the sales \log_{t-1} .

3.3. Analytical Data

Data analysis for hypothesis testing used multiple regression analysis. The partial hypothesis test was at RI+1, RI+2, up to RI+5, employing OLS (ordinary least square) multiple regression analysis, and on panel data, it utilizes Fama-McBeth OLS multiple regression analysis (Baker & Wurgler, 2022). The OLS Fama-McBeth multiple regression analysis uses the HAC (heteroskedasticity and autocorrelation consistent covariance matrix) method to overcome the autocorrelation caused by the calculation of EQFWAMB_{BL_{t-1}} or EQFWAMB_{ML_{t-1}} (Widarjono, 2009).

Then, the heteroskedasticity employed the Harvey method, as depicted in Table 1, which has a prob value > 0.05; thus, there is no heteroskedasticity. The regression equations are as follows. Regression Equation 1 was used to assess hypothesis 1, especially on the variable $b_1EQFWAMB_{BL_{t-1}}$, and regression Equation 2 was used to test hypothesis 2, using the variable $b_1EQFWAMB_{ML_{t-1}}$. Further, EQFWAMB_{BL} and EQFWAMB_{ML}, respectively, showed leverage using BL and ML measurements and others.

$$BL_t = b_0 + b_1EQFWAMB_{BL_{t-1}} + b_2MB_{BL_{t-1}} + b_3TANG_{BL_{t-1}} + b_4PROF_{BL_{t-1}} + b_5SIZE_{BL_{t-1}} + e \tag{1}$$

$$ML_t = b_0 + b_1EQFWAMB_{ML_{t-1}} + b_2MB_{ML_{t-1}} + b_3TANG_{ML_{t-1}} + b_4PROF_{ML_{t-1}} + b_5SIZE_{ML_{t-1}} + e \tag{2}$$

Table 1. Heteroskedasticity test results.

Dependent variable	RI+1	RI+2	RI+3	RI+4	RI+5	RI+1 – RI+5
BL	0.6956 (0.6276)	1.3400 (0.2513)	2.1169 (0.0678)	1.2392 (0.2954)	1.1734 (0.3273)	1.8050 (0.1097)
ML	0.1927 (0.9649)	0.3722 (0.8670)	1.1416 (0.3422)	0.9750 (0.4362)	0.8537 (0.5148)	1.7120 (0.1296)

Note: Row 1 and 2 indicate the F-statistic and prob.

4. Results and Discussion

4.1. Descriptive Statistics

Table 2 shows descriptive statistics using dependent variable BL and Table 3 uses dependent variable ML the result are at RI+1, NDI_BL was 1.7129%, NEI_BL was 1.8503%, NDI_ML was 4.7917%, and NEI_ML was 1.3865%. It showed that when leverage used the BL measurement, the company increased debt by 1.7129% and issued new shares by 1.8503%, while when using the ML measurement, the company added 4.7917% debt and issued new shares by 1.3865%. Because the stock price at the time of RI was enormous, the company's market capitalization was immense. The average values of MB_BL and MB_ML, at the time of RI+1, RI+2, RI+3, RI+4, RI+5, and RI+1, were higher than 1, indicating that the stock market value was more significant than the book value. It implied that the value of MB_BL was higher than MB_ML. At RI+3, NDI_BL was -0.9276%, NEI_BL was 3.2715%, NDI_ML was -1.1174%, and NEI_ML was 3.4139, denoting that the company reduced its debt by issuing large shares.

Table 2. Summary of descriptive statistics.

Dependent variable: BL						
Variable	RI+1	RI+2	RI+3	RI+4	RI+5	RI+1 – RI+5
NDI_BL	1.7129	1.5962	-0.9276	0.1315	0.5870	0.6692
	8.7935	9.0039	9.6784	9.2122	8.3146	9.0512
NEI_BL	1.8503	2.5873	3.2715	2.0263	1.7817	2.3166
	10.5405	9.3663	13.5151	8.7347	16.9036	11.9592
BL	45.3055	47.3133	46.4558	45.6340	46.2572	46.1967
	20.3427	21.3250	20.5558	19.6450	19.6469	20.3085
EQFWAMB_BL _{t-1}	1.5311	1.7090	1.6309	1.6600	1.3234	1.5785
	2.7393	3.2267	2.8562	2.8811	1.1978	2.7116
MB_BL _{t-1}	1.7404	1.6473	1.6867	1.7946	1.4935	1.6754
	1.9831	1.7338	1.8112	1.8415	1.3001	1.7625
TANG_BL _{t-1}	39.5542	40.6936	38.6556	37.2886	39.8826	39.2523
	25.1350	25.3519	25.2394	24.0002	25.2750	25.0763
PROF_BL _{t-1}	8.4334	8.8107	8.5826	8.8198	8.7013	8.6637
	7.9025	9.2310	10.3165	9.6097	7.6961	8.9885
SIZE_BL _{t-1}	11.9760	12.0834	12.1288	12.1562	12.1603	12.0953
	0.8580	0.8649	0.8879	0.8499	0.8455	0.8621
N	144	140	129	121	110	644

Note: Row 1 and 2 show the mean and standard deviation.

Table 3. Summary of descriptive statistics.

Dependent variable: ML						
Variable	RI+1	RI+2	RI+3	RI+4	RI+5	RI+1 – RI+5
NDI_ML	4.7917	0.2035	-1.1174	1.9309	1.1197	1.4613
	14.8142	13.3851	14.8224	12.5855	13.5698	14.0130
NEI_ML	1.3865	2.6429	3.4139	1.6670	1.9719	2.2120
	9.0596	9.4045	13.4500	9.0757	16.6818	11.7198
ML	43.6303	43.8209	43.7109	44.7645	46.0312	44.3214
	23.6727	24.7448	23.5154	24.0992	23.5738	23.8779
EQFWAMB_ML _{t-1}	1.5251	1.6648	1.3853	1.4299	1.3785	1.4837
	2.7218	3.2174	1.9788	1.9902	1.2590	2.3781
MB_ML _{t-1}	1.7231	1.5451	1.5759	1.6821	1.5229	1.6130
	1.6314	1.5713	1.3228	1.5728	1.3358	1.4975
TANG_ML _{t-1}	39.2950	40.7872	39.5440	36.3052	39.4767	39.1398
	24.9532	25.4149	25.1358	24.2328	25.3101	24.9856
PROF_ML _{t-1}	8.4819	8.8170	9.1889	9.0291	8.3577	8.7729
	7.9000	9.2791	11.6538	11.5399	7.9968	9.7431
SIZE_ML _{t-1}	11.9739	12.0745	12.1557	12.1385	12.1481	12.0927
	0.8596	0.8718	0.8182	0.8616	0.8473	0.8527
N	146	138	128	120	114	646

Note: Row 1 and 2 display the mean and standard deviation.

4.2. Regression Analysis Results

The following regression analysis used the BL and ML dependent variables. The results are shown in Tables 4 and 5.

Table 4. Regression analysis results.

Dependent variable: BL						
Variable	RI+1	RI+2	RI+3	RI+4	RI+5	RI+1 – RI+5
C	-115.0944 (0.0000)	-118.5261 (0.0000)	-95.4852 (0.0001)	-78.7203 (0.0024)	-48.0726 (0.0902)	-88.3659 (0.0000)
EQFWAMB _{t-1}	-1.5060 (0.0204)	-1.2705 (0.0393)	-1.5259 (0.0343)	-1.2587 (0.0448)	-4.1971 (0.0060)	-1.4212 (0.0019)
MB _{t-1}	1.3529 (0.1249)	1.8777 (0.1040)	0.4100 (0.7133)	-0.1152 (0.9108)	-0.9568 (0.4898)	0.7319 (0.1884)
TANG _{t-1}	0.1259 (0.0360)	0.0707 (0.2679)	0.0037 (0.9540)	-0.0241 (0.7185)	0.0606 (0.3968)	0.0432 (0.3818)
PROF _{t-1}	-0.2702 (0.1966)	-0.5777 (0.0028)	-0.4897 (0.0047)	-0.2664 (0.1872)	-0.0348 (0.8905)	-0.3911 (0.0085)
SIZE _{t-1}	13.1638 (0.0000)	13.8315 (0.0000)	12.1861 (0.0000)	10.6855 (0.0000)	8.1577 (0.0005)	11.3537 (0.0000)
R ²	0.2985	0.2790	0.2861	0.2146	0.1900	0.2220
F-statistic	11.7433 (0.0000)	10.3690 (0.0000)	9.8568 (0.0000)	6.2834 (0.0000)	4.8786 (0.0005)	36.4089 (0.0000)
N	144	140	129	121	110	644

Note: Rows 1 and 2 present the regression coefficients and prob.

It was shown that EQFWAMB_BLt-1 at RI+1, RI+2, RI+3, RI+4, RI+5, and RI+1 to RI+5 had negative regression coefficient values and probability values below 5%. It implies these values when RI+1, RI+2, RI+3, RI+4, RI+5, and RI+1 to RI+5, hypothesis 1 (H1) is supported. These findings suggest that in Indonesia, there was a persistent impact of market timing equity on CS in companies conducting rights issues using BL measurements.

Table 5. Regression analysis results.

Dependent variable: ML						
Variable	RI+1	RI+2	RI+3	RI+4	RI+5	RI+1 – RI+5
C	-105.7048 (0.0001)	-131.1969 (0.0000)	-59.6886 (0.0795)	-58.3084 (0.0842)	-21.2799 (0.4973)	-80.6244 (0.0004)
EQFWAMB _{t-1}	-2.0284 (0.0199)	-1.2601 (0.0430)	-1.5813 (0.0179)	-1.8958 (0.0071)	-3.7012 (0.0177)	-1.2594 (0.0149)
MB _{t-1}	-1.5625 (0.2791)	-3.7744 (0.0030)	-6.0194 (0.0001)	-6.2139 (0.0000)	-7.0782 (0.0000)	-4.5483 (0.0000)
TANG _{t-1}	0.0383 (0.6075)	0.0870 (0.2557)	-0.0583 (0.4163)	0.0217 (0.7829)	0.0433 (0.5714)	0.0181 (0.7252)
PROF _{t-1}	-0.3706 (0.1345)	-0.6657 (0.0004)	-0.4178 (0.1046)	-0.1806 (0.3477)	-0.4058 (0.1288)	-0.3906 (0.0168)
SIZE _{t-1}	13.0984 (0.0000)	15.3440 (0.0000)	9.9723 (0.0005)	9.6452 (0.0004)	6.9835 (0.0068)	11.3184 (0.0000)
R ²	0.2783	0.3641	0.3081	0.3149	0.2976	0.2852
F-statistic	10.7968 (0.0000)	15.1131 (0.0000)	10.8627 (0.0000)	10.4813 (0.0000)	9.1526 (0.0000)	51.0757 (0.0000)
N	146	138	128	120	114	646

Note: Rows 1 and 2 reveal the regression coefficients and prob.

The result of the table above is EQFWAMB_MLt-1 at RI+1, RI+2, RI+3, RI+4, RI+5, and RI+1 to RI+5 had a negative regression coefficient value and a probability value below 5%. It indicates that when RI+1, RI+2, RI+3, RI+4, RI+5, and RI+1 to RI+5, hypothesis 2 (H2) was supported. These findings demonstrate that in Indonesia, there was a persistent influence of market timing equity on CS in companies conducting rights issues using ML measurements.

The persistent effect of equity market timing on CS could occur because the company issued new shares (NEI_BL), which were more significant than issuing new debt (NDI_BL) as in Table 2, except at RI+4, and the magnitude of NEI_ML was smaller than NDI_ML as presented in Table 3. The analysis results of the average discrimination test of two pairs of sample groups, namely NEI_BL and NDI_BL, indicated that the probability value was 0.922 at RI+1, 0.446 at RI+2, 0.015 at RI+3, 0.120 at RI+4, 0.560 at RI +5, and 0.016 at RI+1 to RI+5 in Table 6. These results denotes that at the time of RI+3 and RI+1 to RI+5, the company issued new shares with a significantly greater value than issuing new debt.

Table 6. Discrimination test results on the means of two paired sample groups.

Dependent variable: BL								
Variable	Mean NEI_BL	Std. deviation NEI_BL	Mean NDI_BL	Std. deviation NDI_BL	Paired differences			Prob.
					Mean	Std. deviation	Std. error mean	
RI+1	1.8503	10.5405	1.7129	8.7935	0.1374	16.8650	1.4054	0.922
RI+2	2.5873	9.3663	1.5962	9.0039	0.9911	15.3388	1.2964	0.446
RI+3	3.2715	13.5151	-0.9276	9.6784	4.1991	19.2480	1.6947	0.015
RI+4	2.0263	8.7347	0.1315	9.2122	1.8949	13.3201	1.2109	0.120
RI+5	1.7817	16.9036	0.5870	8.3148	1.1947	21.4170	2.0420	0.560
RI+1 – RI+5	2.3166	11.9592	0.6692	9.0512	1.6474	17.3405	0.6833	0.016

The test results of the NEI_ML with NDI_ML obtained a probability value of 0.025 for RI+1, 0.089 for RI+2, 0.012 for RI+3, 0.853 for RI+4, 0.684 for RI+5, and 0.311 for RI+1 to RI+5 as in Table 7. These results indicate that during RI+1 and RI+3, the company issued new shares with a significantly greater value than issuing new debt.

Table 7. Discrimination test results on the means of two paired sample groups.

Dependent variable: ML								
Variable	Mean NEI_ML	Std. deviation NEI_ML	Mean NDI_ML	Std. deviation NDI_ML	Paired differences			Prob.
					Mean	Std. deviation	Std. error mean	
RI+1	1.3865	9.0596	4.7917	14.8142	3.4053	18.1735	1.5040	0.025
RI+2	2.6429	9.4045	0.2035	13.3851	-2.4394	16.7359	1.4247	0.089
RI+3	3.4139	13.4500	-1.1174	14.8224	-4.5313	20.1681	1.7826	0.012
RI+4	1.6670	9.0757	1.9309	12.5855	0.2638	15.5808	1.4223	0.853
RI+5	1.9719	16.6818	1.1197	13.5698	-0.8522	22.3249	2.0909	0.684
RI+1 – RI+5	2.2120	11.7198	1.4613	14.0130	-0.7507	18.8012	0.7397	0.311

Therefore, companies after one year of a rights issue (RI+1) up to RI+5 had the opportunity to issue a large number of new shares, but only during RI+3 using the BL measurement in Table 6 and RI+1 and RI+3 employing the ML measurement in Table 7. It was because, first, the decision to conduct a rights issue was the authority of the shareholders. Second, shareholders in Indonesia mainly were owned by institutional ownership, which reached 70.5621% (Pamungkas et al., 2017). Third, as the majority shareholders, institutional shareholders had a vital role in overseeing management to protect investments (Cornett, Markus, Sauders, & Tehranian, 2007).

Fourth, the old shareholders faced a dilemma; if they did not buy shares, it resulted in diluted ownership even though they obtained a transfer of profits from new shareholders (Högfeldt & Oborenko, 2005). However, when buying shares, there was a concern that the company would not be able to provide a return in accordance with the expected return. Fifth, the old shareholders knew the condition of the company and market conditions. Sixth, the company conducted a rights issue if significant funds are required to expand and improve its capital structure; it was supported by the findings of NDI_BL and NDI_ML, respectively, of -0.9276% and -1.1174%.

5. Concluding Comments

The persistent effect of market timing on CS and on companies conducting rights issues occurred in Indonesia, but companies did not issue new shares yearly through rights issues. It is because, firstly, the right issue decision is the authority of the shareholders, not of the management. Second, the old shareholders are worried that dilution will occur even though they get the transfer of profits from the new shareholders. Third, shareholders in Indonesia are owned primarily by institutional ownership. Fourth, the company issues many new shares since it needs funds for expansion. In this study, the company issued a large number of new shares through a right issue at RI+3 (three years after the right issue).

However, this study has limitations, i.e., ignoring companies that carried out corporate actions, such as stock dividends, stock splits, share repurchases, and issuance of new shares through non-rights public offerings. For this reason, further research can control corporate actions.

References

- Alti, A. (2006). How persistent is the impact of market timing on capital structure? *The Journal of Finance*, 61(4), 1681-1710. <https://doi.org/10.1111/j.1540-6261.2006.00886.x>
- Baker, M., Stein, J. C., & Wurgler, J. (2003). When does the market matter? stock prices and the investment of equity-dependent firms. *The Quarterly Journal of Economics*, 118(3), 969-1005.

- Baker, M., & Wurgler, J. (2022). Market timing and capital structure. *The Journal of Finance*, 57(1), 1–32.
- Bougatef, K., & Chichti, J. (2010). Equity market timing and capital structure: Evidence from Tunisia and France. *International Journal of Business and Management*, 5(10), 167–177. <https://doi.org/10.5539/ijbm.v5n10p167>
- Cornett, M. M., Markus, A. J., Saunders, A., & Tehranian, H. (2007). The impact of institutional ownership on corporate operating performance. *Journal of Banking & Finance*, 31(6), 1771–1794. <https://doi.org/10.1016/j.jbankfin.2006.08.006>
- De Bie, T., & De Haan, L. (2007). Market timing and capital structure: Evidence for Dutch firms. *De Economist*, 155(2), 183–206. <https://doi.org/10.1007/s10645-007-9054-1>
- Fahima, N., Suharto, S. M., & Sulistyowati, C. (2016). Equity market timing and capital structure. *Journal of Theoretical and Applied Management*, 9(2), 73–79.
- Högfeltdt, P., & Oborenko, A. (2005). *Does market timing or enhanced pecking order determine capital structure?* Retrieved from European Corporate Governance Institute (ECGI) Research Paper, No. 072.
- Hovakimian, A., Opler, T., & Titman, S. (2001). The debt–equity choice. *The Journal of Financial and Quantitative Analysis*, 36(1), 1–24.
- Hovakimian, A. (2006). Are observed capital structures determined by equity market timing? *Journal of Financial and Quantitative Analysis*, 41(1), 221–243. <https://doi.org/10.1017/s0022109000002489>
- Huang, R., & Ritter, J. R. (2005). Testing the market timing theory of capital structure. *Journal of Financial and Quantitative Analysis*, 1(2), 221–246.
- Jalilvand, A., & Harris, R. S. (1984). Corporate behavior in adjusting to capital structure and dividend targets: An econometric study. *The Journal of Finance*, 39(1), 127–145. <https://doi.org/10.1111/j.1540-6261.1984.tb03864.x>
- Jegadeesh, N. (2000). Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations. *Financial Management*, 29(3), 5–30. <https://doi.org/10.2307/3666227>
- Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of Finance*, 50(1), 23–51. <https://doi.org/10.1111/j.1540-6261.1995.tb05166.x>
- Ma, S., & Rath, S. (2016). Market timing of offerings: Evidence from Chinese listed firms. *Australasian Accounting, Business and Finance Journal*, 10(2), 21–53. <https://doi.org/10.14453/aabf.v10i2.3>
- Mahajan, A., & Tartaroglu, S. (2008). Equity market timing and capital structure: International evidence. *Journal of Banking & Finance*, 32(5), 754–766.
- Minton, B. A., & Schrand, C. (1999). The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing. *Journal of Financial Economics*, 54(3), 423–460. [https://doi.org/10.1016/s0304-405x\(99\)00042-2](https://doi.org/10.1016/s0304-405x(99)00042-2)
- Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575–592. <https://doi.org/10.2307/2327916>
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. [https://doi.org/10.1016/0304-405x\(84\)90023-0](https://doi.org/10.1016/0304-405x(84)90023-0)
- Myers, S. C. (2001). Capital structure. *The Journal of Economic Perspectives*, 15(2), 81–102.
- Pamungkas, W. S., Haryono, T., Djuminah, & Bandi. (2017). *The effect of investment opportunity set, dividend payout, and capital structure moderated by institutional ownership toward stock price to Indonesia Stock Exchange*. Paper presented at the The 3rd International Conference on Management Science.
- Russel, P., & Hung, K. (2013). Does market timing affect capital structure?: Evidence for Chinese Firms. *Chinese Business Review*, 12(6), 395–400. <https://doi.org/10.17265/1537-1506/2013.06.002>
- Saad, P. D. M., & Siagian, H. (2011). Investor sentiment, financial constraints, and equity market timing. *Finance and Banking Journal*, 13(1), 1–15.
- Shyam-Sunder, L., & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51(2), 219–244.
- Stein, J. C. (1996). Rational capital budgeting in an irrational world. *The Journal of Business*, 69(4), 429–455. <https://doi.org/10.1086/209699>
- Stiglitz, J. E. (1969). A re-examination of the modigliani-miller theorem. *The American Economic Review*, 59(5), 784–793.
- Widarjono, A. (2009). *Econometrics: Introduction and its applications*. Yogyakarta: Ekonisia.
- Xu, Z. (2009). The impact of market timing on Canadian and US firms' capital structure (No. 2009-1). Bank of Canada.