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Testing of Herding and Capital Structure Decisions on the Indonesia Stock Exchange: An Observation of Infrastructure & Property Firms

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ABSTRACT: The purpose of this study is to examine the phenomena of herding behavior and capital structure decisions at IDX by taking samples of firms in the infrastructure and property industry sectors in 2018-2021. The basis for determining the research model from Brandea and Pop (2019) which uses panel data regression based on Leary and Robert (2014) research regarding the peer effect motive in herding behavior and capital structure decisions. The results of this study show that there is still herding behavior and capital structure at IDX, especially in infrastructure and property industrial firms with the expansion of findings from Brandea and Pop (2019) that it is not only size as a determining factor but also profit and growth. The implication is that it is still possible for infrastructure and property firms to conduct herding as long as they are able to maintain their optimum capital structure.

KEYWORDS: Herding behavior, capital structure decisions, infrastructure & property firms in the IDX

I. INTRODUCTION

One of the fundamental problems of financial management decisions is to determine the optimal combination of capital structures. Various theories of capital structure, both traditional and behavioral approaches, try to explain the various techniques and determinants of the optimal combination of capital structures. However, the results of the research have been varied and no agreement has been reached on what factors actually determine this optimum combination of capital structures. The research by Brandea and Pop (2019) is based on a behavioral approach that tries to reveal the aspect of manager bias in determining capital structure decisions, namely herding behavior and finds that for the research object of firms listed on the Romanian stock exchange, herding behavior in capital structure decisions occurs and the strongest determining factor is size (firm size). This indicates that financial managers of firms on the Romanian stock exchange are interested in herding behavior in capital structure decisions because they want to give a positive signal to investors and creditors that their firm has more power in terms of fixed assets which are often used as collateral in bank loan applications and bond issuance ratings still good in the eyes of investors, namely bond ratings with a value above BBB+. Meanwhile, several research results in Indonesia still discuss herding and investment decisions and relatively few discuss herding and capital structure (financing) decisions. Considering in the financial management literature that there is a close relationship between investments and financing decisions, the author's research will re-examine herding behavior and capital structure (financing) decisions on the grounds that the stock exchange conditions in Indonesia are the same as those in Romania, namely emerging market and tend to be inefficient. One of the hallmarks of inefficiency is mispricing in IPO (initial Public Offering) cases between firms (prospective issuers); investors and underwriters. This mispricing is very likely to occur by the stock exchange authorities in order to maintain the liquidity of the capital market. With this high liquidity, the firm's willingness to conduct an IPO will always be maintained.

Continuing the research from Brandea and Pop (2019), this research will re-examine herding and capital structure decisions using panel data regression which is more directed at one industrial sector which is suspected to have very high herding characteristics on the Indonesian stock exchange, namely infrastructure & property. As is known, this industrial sector includes the most dynamic industrial behavior, namely the actions of the leader firm will trigger the same action from the follower firm. For example, when there is pricing of building materials, determining trends in housing and building models and socializing investment instrument models related to property, such as REITs (Real Estate Investment Trusts) and Proptech which are currently

booming in Indonesia. Thus, the purpose of this study is to re-examine the phenomenon of herding behavior and capital structure decisions based on the Brandea and Pop (2019) study in the infrastructure & property industry on the IDX.

II. HYPOTHESIS DEVELOPMENT

This study will propose a theoretical framework for herding behavior and capital structure from Brandea and Top (2019) and Leary and Robert (2014). The financial manager of a firm has the option of optimizing the capital structure for the achievement of financial management objectives, namely maximizing firm value. The selection of the right funding mix between debt and equity will be based on the determination of the minimum weighted average cost of capital. This is of course by considering the accuracy of the funding sequence and the best target leverage according to Pecking Order Theory and Static Trade Off, respectively. Both theories of capital structure work on the basis of a traditional, rational approach.

However, in subsequent developments, a behavioral approach emerged in the behavioral theory of capital structure based on irrational thinking. Indeed, in Pecking Order Theory, which assumes asymmetric information between firm management and investors in the capital market, mispricing conditions in determining market prices and intrinsic value make financial managers of a firm sometimes take actions that tend to be irrational. This action is imitating the funding decisions made by other firms, in this case firms that are larger in size or which can also be firms that are market leaders in the industry. This act of imitation is often referred to as herding behavior which has so far been widely used in investment decisions in the capital market between investors who are less informed and investors who are fully informed. The motivation of financial managers who do herding in capital structure decisions is the fear that the funding mix that has been determined will not reach the optimal position as expected.

Several factors in Almanzan and Manzano (2002), Mackay and Phillips (2005) and Degryse, et.al. (2012) and the triggers for herding in this capital structure decision include profit; growth and size. Profit, size and growth are considered as triggers because the firm's goal is maximizing the value of the firm through achieving profit, increasing growth and increasing firm assets. Filbeck, et al. (1996) and Camara (2017) state that one of the most decisive factors for herding in capital structure decisions is the leverage position of firms that are competitors or peers in the industry. Thus, this study will propose an alternative hypothesis, namely:

H1. Herding behavior in capital structure decisions will be influenced by the leverage of similar firms in the industry (peer); firm size, profit and firm growth.

III. RESEARCH METHODS

III.1. Data

This study uses a sample of infrastructure and property firms listed on the Indonesia Stock Exchange in 2018-2021. The data is taken annually, which means using the firm's financial report data from the IDX Fact Annually as of December 31. This data source is used to determine 30 infrastructure and property firms that have various characteristics of leveraged data; size; profits and growth. The existence of diversity or variation in the characteristics of the data that becomes the research variable, both the dependent variable, namely leverage and the independent variable, namely size; profit and growth made the research team have to use a regression analysis method that is no longer OLS (Ordinary Least Square) but has to use a panel data regression analysis method that is GLS (General Least Square) which has the advantage of being able to overcome the problem of diversity in the characteristics of research data or often called the problem heteroscedasticity which is characterized by variations in cross section data between different firms.

III.2. Hypothesis Testing with Panel Data Regression

To test H1 in the hypothesis development section, this study proposes a simplified GLS panel data regression analysis model from the research model of Brandea and Top (2019) and Leary and Robert (2014). This research model reduces the three variables Brandea and Top (2019) and Leary and Robert (2014) namely Size.Avg, Profit.Avg and Growth. Avg. These three variables are not used in model (1) considering the limited number of samples of infrastructure and property firms on the IDX which is much smaller than the number on the Romanian and US stock exchanges. The model is as follows:

$$LEV_{it} = \beta_0 + \beta_1 LEV.AVG_{it} + \beta_2 SIZE_{it} + \beta_3 PROFIT_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \quad (1)$$

where:

$LEVi_t$ = leverage of infrastructure & property firms i-year t (measured by Debt-to-Equity Ratio)

$LEV.AVG_{it}$ = peer leverage of infrastructure & property firms i-year t (measured by Average Debt to Equity Ratio)

$SIZEi_t$ = Size of infrastructure & property firm I year t (measured by Logarithm of Total Assets)

$PROFIT_{it}$ = Profit of infrastructure & property firm i-year t (measured by Return to Equity)

$GROWTH_{it}$ = Growth of infrastructure & property firms i-year t (measured by Sales Growth)

β_0 = Constant or intercept
$\beta_{1;\ldots.4}$ = Coefficient of each independent variable
ε_{it} = Error term i in period t

IV. RESEARCH RESULTS AND DISCUSSION

IV.1. Descriptive Statistical Analysis

Based on table 1, a descriptive statistical profile is obtained from the five variables that are components in the GLS panel data regression analysis model, namely model 1. The descriptive statistical profile is based on two main components, namely the mean (1st moment), standard deviation (2nd moment) and 2 supporting components. namely the minimum and maximum. It can be seen from table 1, that the LEV variable has a mean value of 0.67 and a standard deviation of 3.32 and a maximum of 12.2 and a minimum of -22.7. The magnitude of the negative value on the minimum component indicates that there are firms experiencing financial distress and firms like this will not be able to make capital structure decisions independently; So thirsty for help from other firms. For LEV. AVG has a mean value, std dev. and the minimum and maximum data distribution are narrower range than LEV.

Table 1. Descriptive Statistical Analysis Results

Component	LEV	LEV.AVG	SIZE	PROFIT	GROWTH
Mean	0.67	0.54	8.11	-18.97	1.40
Maximum	12.20	3.67	12.42	24.73	10.19
Minimum	-22.70	-4.60	2.71	-2140.2	-9.36
Std. Dev.	3.32	1.96	2.30	195.97	1.99
Observations	120	120	120	120	120

Source: data analysis (2022)

From table 1 above, it can be seen that the SIZE variable has a mean value of 8.11 and std.dev 2.3. Then it can be seen that the profit and growth variables have varying mean values. A negative value in the mean for profit indicates that there are firms that have suffered losses due to the Covid-19 pandemic. And what's interesting is that the mean for growth is still positive, meaning that infrastructure & property firms still have good and promising business prospects. The biggest data variation is experienced by the PROFIT variable. This means that this sector firm has an unusually high profit fluctuation.

In general, if analyzed using the dimensions of normality of the data, only the SIZE variable is normal considering the mean value is far above the value of std.dev. For the other four variables, namely LEV, LEV.AVG; PROFIT and GROWTH which have a mean value that is smaller than the value of std.dev, it can be ascertained that they are not normal if the data normality test is carried out with the Jarque Berra TEST. This condition is not critical considering the period of the research data which is also abnormal due to the covid-19 pandemic and the use of GLS-type panel data regression which is prepared to overcome the problem of heteroscedasticity in this research variable.

IV.2. Hypothesis Testing with Panel Data Regression

IV.2.1 Using STATA

The first part of panel data regression testing was carried out by using the first part of running for panel data regression using STATA 9.0. The testing begins by typing command.com. edit to identify the 5 variables used, namely LEV., LEV.AVG, PROFIT; SIZE and GROWTH. After editing command.com, it is continued with command.com egen i to identify unit i (cross section namely property and infrastructure firms) and and egen t to identify unit t (time series, namely the research data period 2018-2021). The last command.com, namely iis i and iis t, is used to implement the i and t data so that they are ready for processing.

Table 2. The First Part of Running for Panel Data Regression using STATA 9.0

```
. edit
(5 vars, 120 obs pasted into editor)
. egen i = group (no)
. egen t = group (year)
. iis i
. tis t
```

After preparing the command.com menu in table 2 above, then the next step is to run panel data regression using the command.com: menu. Xtreg lev levavg size profit growth, re in table 3. This method was chosen because the type of panel data regression is random effect considering that the source of data variation is more dominated by the Covid-19 pandemic condition for the 2020-2021 period which has a negative impact on the average profit value as a variable. independent which is important for model 1. Table 3 shows the results of panel data regression testing with STATA. In general, it can be said that the test results are not very supportive of H1 because only LEV.AVG and GROWTH variables are significant at the 5% level. The other three independent variables, namely SIZE and PROFIT, are not even significant. The results of this test indicate that there has been a herding behavior in the capital structure decision but only triggered by growth. These findings support the Brandea and Top (2019).

Table 3. The Final Part of the Running Results for Panel Data Regression using STATA 9.0

```
. xtreg lev levavg size profit growth, re
Random-effects GLS regression              Number of obs     =       120
Group variable (i): i                      Number of groups  =        30
R-sq:  within = 0.0930                     Obs per group: min =         4
between = 0.9586                           avg =                     4.0
overall = 0.3782                           max =                       4
Random effects u_i ~ Gaussian              Wald chi2(4)      =     69.94
corr (u_i, X)      = 0 (assumed)           Prob > chi2       =    0.0000
------------------------------------------------------------------------------
lev             Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          levavg   .8845066   .1365993     6.48   0.000     .6167769    1.152236
size     .0279359   .1120115     0.25   0.803    -.1916027    .2474744
          profit   -.0001733   .0012831    -0.14   0.893    -.0026881    .0023415
          growth    .3039621   .1316968     2.31   0.021     .0458412    .5620831
          _cons   -.5782451    .950994    -0.61   0.543    -2.442159    1.285669
-------------+----------------------------------------------------------------
          sigma_              0
          sigma_e             2.9843646
rho                   0  (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

IV.2.2 Using EVIEWS

In panel data regression testing using EVIEWS 3.1 software in table 4, different results were found, namely all independent variables other than LEV.AVG were the trigger for herding behavior in capital structure decisions. This result reinforces the findings of the studies by Brandea and Top (2019) and Leary and Robert (2014) which means that in the sample of property and infrastructure holding firms on the IDX, they are accustomed to herding behavior in capital structure decisions. This condition is further exacerbated by the 2018-2021 data period plus the 2020-2021 COVID-19 pandemic. Property and infrastructure sector firms on the IDX are accustomed to herding behavior in capital structure decisions aimed at maintaining the optimum position of the capital structure. Compared to relying solely on one's own ability to manage the weighted average cost of capital and optimal leverage position. So it is much more effective and efficient to benchmark firms in the industry. The highly collegial situation of the property and infrastructure industry makes this herding of capital structure was possible.

Table 4. The Final Part of the Running Results for Panel Data Regression Using EVIEWS 3.1

```
Dependent Variable: LEV?
Date: 10/18/22   Time: 21:15
Included observations: 4
Number of cross-sections used: 30
Total panel (balanced) observations: 120
White Heteroskedasticity-Consistent Standard Errors & Covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	- 0.418024	0.020504	- 20.38756	0.00000
LEVAVG?	0.925192	0.008095	114.2983	0.00000
SIZE?	0.029554	0.02318	12.75202	0.00000
PROFIT?	- 0.000150	7.28E-06	- 20.64282	0.00000
GROWTH?	0.166999	0.007626	21.89936	0.00000
		Adjusted R-squared	0.975703	
Durbin Watson Stat	1.891661	Prob (F-statistics)	0.000000	
F-statistics	1195.658	Sum squared resid.		
S.E. of regression	2.366804	644.2025	0.	

V. CONCLUSIONS AND SUGGESTIONS

V.1. Conclusion

The purpose of this study is to re-examine the phenomenon of herding behavior in capital structure decisions according to the studies of Brendea and Top (2019) and Leary and Robert (2014). The results of the test using the GLS panel data regression method in property and infrastructure sector firms re-proven this phenomenon and even the results of research extending the results of the Brendea and Top (2019) study that it is not only size that triggers herding behavior in capital structure decisions but also profits and growth. This condition is supported by the highly collegial characteristics of the property and infrastructure industry that allow herding in various business decisions in addition to the capital structure decisions being investigated. The results of the study imply that firms can do herding provided that they are able to maintain the position of the optimum capital structure and have confidence that it is more expensive and inefficient to determine the optimum capital structure independently. Of course, the selection of the right peer effect and the flexibility of funding owned by the firm will be a factor in this success.

V.2. Limitations of the Research

This study has not used LEV.AVG in various industrial sectors such as the Pais (2017) and Orlando (2018) studies. This is due to the fact that the number of constituents (firms) in an industry listed on the IDX are not as uniform as well as the topic of research on herding behavior in capital structure decisions is still rarely done on the IDX so that maximizing the number of samples of firms in various conditions of different variations between crosses will increase the problem of heteroscedasticity. requires more varied types of panel data regression, such as GMM (General Methods of Moment) and SUR (Seemingly Unrelated Regression). Heteroscedasticity problems that occur in GLS also have the potential to trigger endogeneity problems.

V.3. Suggestions

In order to overcome the weakness of the LEV.AVG proxy above, the next research can use several types of industries that are similar to or related to property and infrastructure, meaning that they will have natural herding potential. The existence of several different types of industries will be more justifiable, so herding and non-herding are better because the key point for financial managers is to determine the optimum capital structure that will support the achievement of the goal of maximizing firm value. Herding or non-herding will only be a means from management to realize the firm's goals.

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REFERENCES

1) Almazan, A. and Manzano, C.A.M. (2002), “Intra-industry capital structure dispersion: how do capital structures differ among competitors?”, *McCombs Research Paper Series*, FIN-11-02, pp. 1-69.
2) Brendea, F. and F. Pop (2019), Herding Behavior and Financing in Romania,” *Managerial Finance* Vol. 45 No. 6, pp 716-72, https://doi.org/10.1108/MF-02-2018-0093
3) Camara, O. (2017), ”Industry Herd Behavior in Finance Decision Making, *Journal of Economics and Business* Vol. 94, pp.

32-42. https://doi.org/10.1016/j.jeconbus.2017.08.0011

4) Degrees, H., de Goeij, P. and Kappert, P. (2012), "The impact of firm and industry characteristics on small firms' capital structure", *Small Business Economics*, Vol. 4 No. 38, pp. 431-447. https://doi.org/10.1017/s11187-010-9281-8
5) Filbeck, G., R. Gorman and D. Preece (1996), "Behavioral aspects of the Intra-industry Capital Structure Decision", *Journal of Financial and Strategic Decisions*, Vol. 9, No. 2, pp. 55-67.
6) Leary, M. and M. Roberts (2014), "Do Peer Firms Affect Corporate Financial Policy?", *The Journal of Finance*, Vol. 69, No. 1, pp. 139-178. https://doi.org/10.1111/jofi.12094
7) Mackay, P. and G.M. Phillips (2005), "How Does Industry Affect Firm Financial Structure?" *Review of Financial Studies*, Vol. 18, pp. 1433-1466. https://doi.org/10.1093/rfs/hhi032
8) Orlando, G. (2018), Peer Effects on Capital Structure: Evidence from the Italian Market, *MBA Thesis in Finance*, University of Venice, pp.1-100.
9) Pais, M.F. (2017), Do Managers Herd when Choosing the Firm's Capital Structure? Evidence from a Small European Economy? Master Thesis in Finance, Universidade do Porto, pp. 1-47.
10) Safithri, A.L. dan B. Siregar (2010)," Herding pada Keputusan Struktur Modal," Jurnal Alkuntansi dan Manajmen Vol. 21 No.1, hal. 31-43.