The Role of Risk in the Association of Company Growth Signals and Investor Response

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Abstract - **This study aims to examine the role of risk factors in the relationship between investor responses and company growth signals through capital expenditure measures.**

Research respondents are segmented, only companies with the best stock performance in each sector in 2017. The observation period is 2017 to 2019.

In this research, the companies selected are the top 10 companies in each sector with the best stock performance in companies listed on the Indonesia Stock Exchange. The main variables are a growth signal which is proxied by growth in capital spending and capital expenditure, risk and investor response, which is proxied by CAR. Financial performance as measured by ROA is a control variable in this study.

The results show that the signal of growth as measured by capital expenditures responded positively by the market, the risk moderates this influence, companies with high risk will be responded negatively by investors and vice versa. This finding corrects previous findings that only looked at the signal aspect of growth, without linking it to risk. In addition, these findings reinforce the argument that investors buy the future of the company, not a momentary financial performance. This can be seen from the absence of ROA influence on investor response.

This study provides an insight that companies need to manage risk appropriately, because the risk aspect of the company is a crucial factor for investors. High risks will eliminate the benefits of strategic decisions in this case in the form of capital expenditures.

Keywords - **capital expenditure, growth signals, investor response, risk.**

I. INTRODUCTION

A company was forced to have an investment habit because of product lifecycle or trend in the community [1]. Company needed a new investment in order to change. Needs for a new investment caused a company intention to manage its cash flow so that it might not lose the chance to continuously grow and exist in the marketplace accordance to business development trend.

Generally, in a new investment project, both capital and R&D expenditure did not have any effect on financial performance yet, because in the installation of those capital and R&D expenditure, particular asset and R&D result had not supported the company revenue yet. On the other side, need for cash flow investment (CFI) was increased and affecting the whole company cash flow. Surprisingly, some companies' capital expenditures were positively appreciated by the investors. For example, shares of AMFG (PT Asahimas Flat Glass Industry) was recorded

having 86% increasing on July 1st, 2019, although its financial performance was only recorded of 3.4%. These ROA was under the average of basic industries' ROA at that time. At the same time, AMFG's capital expenditures were increased. It indicated that investors concluded the increasing of capital expenditures value over the average of IDX's basic industry sector or field; a good signal for AFMG's share price. The increasing of share price in advance of company performance showed an improvement; for the indication of capital expenditure's increasing put any investor expectations for a better company's future.

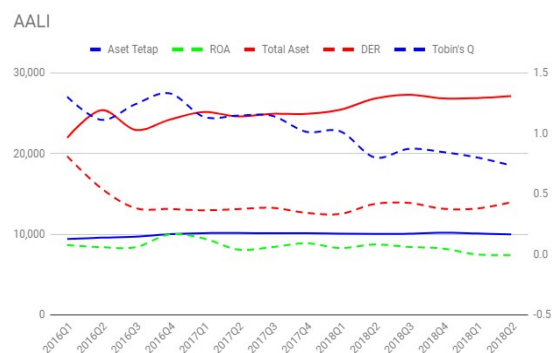**Figure 1a.** Plant Assets, ROA, DER, TQ of AFMG

Figure 1b. Plant Assets, ROA, DER, TQ of AALI

Fig. 1b. showed that the AALI's plant assets were stagnant, with an increasing in the total assets and a decresing in DER (cost of debt), while the Tobin's Q was decreasing; although the business' risk was decreasing, the share price was still decreased. The decreasing of share price when the DER was decreasing indicated that the investors were concerned about the future of the company because there were not any new investments in form of plant assets, hence there were no any better expectations on company's performance in the future.

Capital spending was the company's way to increase its

performance and competitiveness through plant assets investment or R&D expenditures [8]. It was important to create a continuously and overlapping company's growth cycle (S-curve) so that may remove any product bad effects in the declining phase.

Different with previous researches that aimed to associate the short-term performances with the increasing of share price [10], this research would show the facts that the investors more concerned with their future investments. Company's capital expenditures sent its life cycle signal, whether it will continuously grow or have any decreasing. The purpose of this research was to explore the investor's responses on company's capital expenditures through a pattern of share price movement in the long-term and using company's life cycle as the control variable. Investors' enthusiasm on the future of the company will abort all time beliefs through research's results that a bad-perform company would be negatively appreciated. Based on the above-mentioned facts, investor would prefer the future share price projection to the company's current financial performances.

II. REVIEW OF LITERATURES

Signaling Theory
According to signaling model [9], one of the company's objectives in its external financing to finance its expansion was giving signal to its investors that the fundamental of the company was strong; because only a really strong company that dare to bear financial distress risk when the portion of debt was high. Jensen and Meckling [7] in agency theory proposed an additional debt portion as a mechanism to reduce agency problem. Higher the debt, smaller the idle fund that could be use by the manager for any unnecessary expenditures.

The presence of the share price increasing when there was any debt increasing announcement (e. g. debt for equity exchange offer, debt finance share repurchases program, and debt financed cash tender offer) aimed to gain control over other companies. On the other hand, the debt decreasing (e. g. equity for debt exchange offer, IPO, and own-shares acquisition offering) would cut the share price [11].

Capital Spending
Primary triggers of modern economy were the use capital intensively new technology and production process. In order to reach that progress, company needed adequate finance resources, techniques, and human resources. In order to optimize the chances for the new investment, it was a must for company to have a capital spending, either through plant assets acquisition or R&D expenditures.

In signaling model, capital investment was a signal to confirm that company had a high prospective performances (profitability). In the information asymmetry capital market, it had an important role; any capital spending done by the manager could send a reliable signal of company cash flow.

A significant share price increasing reached when the company declared to increase its capital spending, including any expenditures for R&D; otherwise, the share price would negatively react when there where any reductions in capital spending [4]. A company that issued any new shares to finance company expansion would gain a fewer negative response than other settle companies that would declare to issue any new shares.

Company Live Cycle (S-curve)
Miller & Friesen [3] divided company life cycles into four stages, as described below:

1. Introduction stage. This was a learn phase where fixed costs often burdened the company revenues. Company had to start to invest in order to change its market position. The source of this initial investment was part of company's earning; it needed a constant additional investment. As a result, a negative cash flow from operation (CFO) and investment (CFI), while cash flow from finance (CFF) would be positive.

2. Growth stage. In this phase, company experienced a break-even point (CFO>0) yet the additional investment and a solid competitive advantage (CFI<0) were needed. Company had reached a fast revenue growth, but the earning was not enough to finance the investment (CFF>0).

3. Maturity stage. Company had positive earning (CFO>0). Even tough its market position was strong; company still had a potential development. Investment should be protected (CFI>0), although the amount of investment is proportionally lower than the previous stage. In this phase, revenue growth and innovation rate were decreased compare to the previous stage, so that the CFF<0.

4. Declining stage. In this phase, the sales were decreasing, and earning was negative because of the innovations were stopped. There was a decreasing of company assets' liquidity to continue the business and burden to pay the creditor (CFI>0). Dicinson (2011) found that the decreasing of CFF occurred when CFF>0 or CFF<0.

Coad et. al [21] used company's time of life to identify its life cycle, but it was not enough to become the proxy for company life cycle because of two reasons. First, company often operated in more than one industry, so it created any overlapping of its products life cycle [16]. Second, company in the different industry had different time related to its life cycle [1] so that the relations among the business life cycle stages and lifetime became explicitly unidentified.

Total Assets
Some empirical researches in corporate finance assumed that company size is the basic and important characteristic in determining dependent variable. Rajan & Zingales [5] found that company leverage was increased along with the company size. It was found in the merger and acquisition that small company had a higher abnormal announcement return than the bigger one. Moeller et. al [20] and [6] described that in the supply time, company size-based inverted U relation was found. Meanwhile, other researches found that banks were concerned on the risk of company's investment project [17 & 18]. Company size affected the mitigation of company cash flow deficiency. Bigger company would reduce less investment portion compare to smaller one when there was a cash flow deficiency.

III. RESEARCH FRAMEWORK

Capital expenditure indicated any probability of company growth, which was marked with the increasing of plant assets and R&D expenditures. The increasing of plant assets was perceived as a better future company productivity, and the growing of R&D expenditures indicated any innovations and improvements in output quality. Capital expenditure increasing also brought any expectations on the increasing of potential financial performances (ROA). The increasing capital expenditure, on the other hand, would affect the risk escalation. It would be positively reacted by the investors, because the increasing capital expenditure brought any hopes on better future of company. Otherwise, if its capital expenditure was stagnant or decreased, investors would be worried, and resulting in an unpromising future signal.
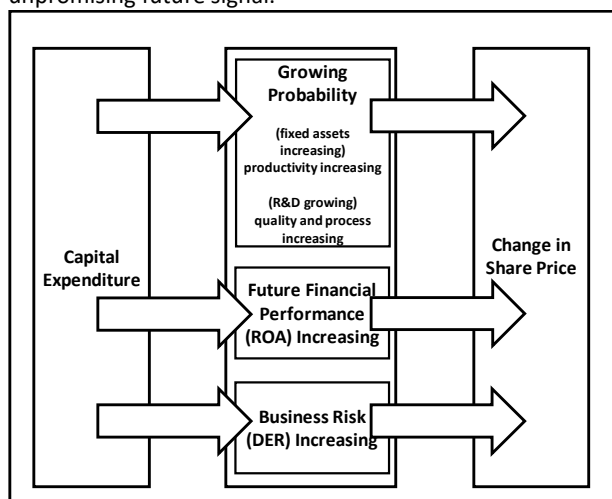

Figure 2. Research Framework

IV. RESEARCH HYPOTHESES

Based on abovementioned explanations, following were the research hypotheses of this research:

H1: plant asset growth affected share price

When there was a trend of capital expenditure increasing, it was predicted:

H2A: total asset is positively affected the share price

H2B: total plant asset is positively affected the share price

When there was a trend of capital expenditure decreasing, it was predicted:

H3A: total asset is positively affected the share price

H3B: total plant asset is positively affected the share price

V. RESEARCH METHODS

Research Type

This research aimed to identify the effect of capital spending on share price. Total assets, ROA, and DER were the control variables. The trend of capital spending growth was used as dummy variable. This research type was a quantitative causality using metric data in form of panel data. Data processing used Eviews software.

Population and Sample

This research population were company listed in Indonesia Stock Exchange (IDX) in the time range of January 1st, 2015 until second quarter of 2019. Financial sector was not participated because of the difference use of plant assets in its business process, compare to the others.

There were 644 companies listed in IDX until July 1st, 2019, and there were 320 companies that accomplished this research sampling measures.

Data Collection

Finance data and share price were recorded quarterly in order to identify the fluctuation of capital spending; more detail than the annual interval. Such financial data as ROA, DER, and capital spending were not presented directly in the financial statement, so that those data had to be counted on another from the financial statement. Share price was taken from Yahoo! Finance. Share capitalization was taken from official website of IDX, idx.co.id. Some additional data were taken from TICMI. Plant assets growth was equal to company's plant assets in a quarter minus plant assets from previous quarter.

Research Model

Research model were stated in these following equations:

$$TQ_{i,t} = \beta_0 + \beta_1 Log\ TA_{i,t} + \beta_2 Log\ FA_{i,t} + \beta_3 GFA_{i,t} + \beta_4 ROA_{i,t} + \beta_5 DER_{i,t} + \varepsilon_{i,t}$$
(1)

The sample would be tested separately further, based on the group of growth, which is the group that experienced increasing plant assets growth trend and decreasing ones with these following equations:

$$TQ_{i,t} = \varphi_0 + \varphi_1 Log\ TA_{i,t} + \varphi_2 Log\ FA_{i,t} + \varphi_3 ROA_{i,t} + \varphi_4 DER_{i,t} + \varepsilon_{i,t}$$
(2)

$$TQ_{i,t} = \theta_0 + \theta_1 Log\ TA_{i,t} + \theta_2 Log\ FA_{i,t} + \theta_3 ROA_{i,t} + \theta_4 DER_{i,t} + \varepsilon_{i,t}$$
(3)

Variables Explanation

1. Capital spending. Proxied with total assets **(TA)** and total plant assets or fixed assets **(FA)**. TA was measured using logarithm of TA, while FA using logarithm of FA.
2. Capital spending growth **(GFA)**. Measured using the accumulation capital spending in a period with the previous one, divided by prior period capital spending. Company with GFA increasing trend in a five years period is categorized as **growth** (scored as 1), otherwise, it was not growing (scored as 0).
3. Return on asset **(ROA)** as the financial performance indicator, which was measured using net income divided by TA.
4. Debt to equity ratio **(DER)** as the company risk indicator, which was measured using total liabilities divided by TA.
5. **Tobin's Q**. Proxied of change in share price because TQ combined TA based on investors' perspective. TQ was measured using market value of equity shares plus book value of liabilities.

VI. DISCUSSION

Tests of hypotheses was were using the assistance of Eviews software. Panel data with five years' time range, started from first quarter of 2015 until second quarter of 2019, with the total of 320 non-financial companies, resulted in total observation of 6,400. The tests were performed for all samples in order to identify whether the growth of plant assets would be appreciated by the

investors or not, using the first equation. Furthermore, the samples were clustered into two parts based on the trend of plant assets growth. Each part was tested separately. These separate tests of each part were performed to prove that the investors prefer to maintain company's potency in future earnings rather than relying on current earnings or performances. These hypotheses were taken in order to fix alleged quasi beliefs that share price would be determined by the current condition, instead of the future one.

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,262(a)	0,069	0,042	0,51198	2,191

a Predictors: (Constant), ROA, GFA, FATA, DER, RFATA, RGFA

b Dependent Variable: TQ

Based on the data presented in Table 1, it was concluded that the research model could explain the behavior and pattern of the dependent variable of 4,2%.

VII. CONCLUSION

Table 2. Test for Hypotheses

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-1,020	,383		-2,663	,008
	GFA	,457	,294	,394	1,555	,121
	FATA	1,071	,601	,356	1,782	,076
	DER	,925	,264	1,209	3,502	,001
	RFATA	-,586	,288	-,592	-2,035	,043
	RGFA	-,524	,235	-,959	-2,236	,026
	ROA	-1,542	1,331	-,084	-1,158	,248

a Dependent Variable: TQ

Table 2 described the result of this research. Based on the data, the proposed hypotheses could be explained as follows:

H1: based on the sig. value (more than 0.5), plant asset growth did not affect the change in the share price.

When there was a trend of capital expenditure increasing, it could be concluded as follows:

H2A: based on the sig. value (more than 0.5), total asset did not affect the change in the share price.

H2B: based on the sig. value (more than 0.5), total plant asset did not affect the change in the share price.

When there was a trend of capital expenditure decreasing, it could be concluded as follows:

H3A: based on the sig. value (less than 0.5), total asset is positively affected the share price.

H3B: based on the sig. value (less than 0.5), total plant asset is positively affected the share price.

Allegedly, it was presumed that the investors in IDX could be identified as conservative investors; they had not valued the financial performance based on the future indicators yet. They might did it using the bottom line of income statement as the basic indicator of company's performance.

REFERENCES

[1] Hasan, M. M., and Habib, A. "Corporate life cycle, organizational financial resources, and corporate social responsibility," Journal of Contemporary Accounting and Economics, vol. 13, no. 1, pp. 20-36, 2017.

[2] Shahzad, F., Lu, J., and Fareed, Z., "Does firm life cycle impact corporate risk taking and performance?" Article in press, 2019.

[3] Miller, D. and Friesen, P. H., "A longitudinal study of the corporate life cycle," Management Science, vol. 30 no. 10, pp. 1161-1183, 1984.

[4] McConnell, J. J. and Muscarella, C. J., "Corporate capital expenditure decisions and the market value of the firm," Journal of Financial Economics, vol. 14, pp. 399-422, 1985.

[5] Rajan, R. G. and Zingales, L., "What do we know about capital structure? Some evidence from international data," The Journal of Finance, vol. 50, no. 5, pp. 1421-1460, 1995.

[6] Vijh, A. M. and Yang, K., "Are small firms less vulnerable to overpriced stock offers?" Journal of Financial Economics, vol. 110, no. 1, pp. 61-86, 2013.

[7] Jensen, M. C. and Meckling, W. H., "Theory of the firm: Managerial behavior, agency costs and ownership structure," Journal of Finance and Economics, vol. 3, no. 4, pp. 306-360, 1976.

[8] Zhao, C., Qu, X., and Luo, S., "Impact of the Inno Com program on corporate innovation performance in China: Evidence from Shanghai," Technological Forecasting and Social Change, vol. 146, pp. 103-118, 2019.

[9] Engers, M., "Signaling with many signals," Econometrica, vol. 55, pp. 663-674, 1987.

[10] Cass, D. and J. E. Stiglitz, "The structure of investor preferences and asset returns and separability in portfolio allocation: A contribution to the pure theory of mutual funds," Journal of Economic Theory, pp. 122-160, 1970.

[11] Masulis, R. W., "The effect of capital structure change on security price: A study of exchange offers," Journal of Financial Economics, vol. 8, pp. 139-178, 1980.

[12] John, K., and Nachman, D. C., "Risk debt, investment incentives, and reputation in a sequential equilibrium," The Journal of Finance, vol. 40, no. 3, pp. 863-978, 1985.

[13] Miller, M. H., and Rock, K., "Dividend policy under asymmetric information," The Journal of Finance, vol. 40, no. 4, pp. 1031-1051, 1985.

[14] Ambarish, R., John, K., and William, J., "Method of signaling with dividend and investment," Journal of Finance, vol. 42, pp. 321-343, 1987.

[15] Catalini, C., and Tucker, C. E., "Seeding the S-Curve? The role of early adopters in diffusion. Available at SSRN: https://ssrn.com/abstract=2822729 or http://dx.doi.org/10.2139/ssrn.2822729, 2016.

[16] Dickinson, V., "Cash flow patterns as a proxy for firm life cycle," The Accounting Review, vol. 86, no. 6, pp. 1969-1994, 2011.

[17] Diamond, D. W., "Reputation acquisition in debt markets," The Journal of Political Economy, pp. 828-862, 1989.

[18] Flannery, M. J., "Asymmetric information and risky debt maturity choice," The Journal of Finance vol. 41, no. 1, pp. 19-37, 1986.

[19] Pillote, E., "Growth opportunities and the stock price response to new financing," The Journal of Business, vol. 65, no. 3, pp. 371-394, 1992.

[20] Moeller, S. B., Schlingemann, F. P., and Stulzm R. M., "Firm size and the gains from acquisitions," Journal of Financial Economics, vol. 73, pp. 201-228, 2004.

[21] Coad, A., Segarrac, A., and Teruel, M., "Innovation and firm growth: Does firm age play a role?" Research Policy, vol. 45, pp. 387-400, 2016.