




# “Market reaction and fundamental signal in Indonesia”

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# MARKET REACTION AND FUNDAMENTAL SIGNAL IN INDONESIA

## Abstract

The random reaction in capital market by different perceptions and other factors makes it difficult for investors to get their optimum return. The objective of this study is to provide an empirical evidence about how the market will react by fundamental signal from the perspective of life cycle theory, free cash flow theory, and bird in the hand theory. The study presents the analysis of covariate for hypotheses testing with 241 firms as the sample which are listed in Indonesia Stock Exchange for period 2010–2015. This study finds that the life cycle theory and free cash flow theory are not absolute theories to explain the market reaction for any firms, because each firm has its own characteristics. The findings show that share prices shall react differently depending on each characteristics of the firm. The bird in the hand theory seems applicable in any case of firms, since the informational contents by dividend can deliver good signal to investors in capital market. Excluding the smaller and younger firms, this study proves that dividend is still a better way in determining the reaction of share prices, since each type of firms has its own types of dividend payers with different share prices.

**Keywords** share prices, life cycle, free cash flow, bird in the hand

**JEL Classification** G11, G14, G30, G35, G41

## INTRODUCTION

Generally, most investors tend to invest their funds for overvalued shares for the purpose of getting better dividends or capital gains in term to reach optimum return of shares. Since the firms are viewed as "black box" by investors (Asquith & Mullins, 1986; Zingales, 2000), then, while setting investment portfolio, the investors are normally using fundamental approach by capturing the signals of firms' financial performance. Unfortunately, the ideal objectives by investors to get optimum return are not easy to reach, since market's reaction is randomly caused by different perceptions and other factors.

There are several theories that can be related with the issues behind the market reactions which fluctuates the share prices, such as life cycle theory (Grullon, Michaely, & Swaminathan, 2002; DeAngelo, DeAngelo, & Stulz, 2006) which have close relationship with bird in the hand theory in context to explain the information asymmetry (Bhattacharya, 1979; Easterbrook, 1984; La Porta, De Silanes, Shleifer, & Vishny, 2000), and agency conflict in the context of free cash flow theory (Jensen, 1986; Myers, 2001).

As an emerging market, Indonesia has many firms with many varying characteristics where some special characteristics are size, firm age, and the most important is the types of dividend payers. These characteristics can become references to help the investors to determine their preferences on investment decision from the perspective of fun-

damental factors. Limited to the sample, the movement of average share prices (measured in Rupiah) in Indonesia tends to decrease for the period 2010–2015. The phenomenon can be described as follows: starting in year 2010, the average share price for Rp. 4,403,85 down to Rp. 3,410.90 in year 2011 and keep down to Rp. 2,553.82 in year 2012 and Rp. 2,320.44 in year 2013, but then up in year 2014 to Rp. 2,663.82 and down again to Rp. 2,169.65 in year 2015.

The objective of this study is to provide the empirical evidence about how the market will react by fundamental signal and proceeds as follows: section 1 reviews the relevant literatures and develops the hypotheses for the study, section 2 explains the research method for this study, section 3 shows the results and discusses the findings, and final section concludes this study and exposes its limitations.

## 1. LITERATURE REVIEW

Under life cycle theory, firms are basically at mature level which means firms have less investments, high profits, and large free cash flows (Grullon, Michaely, & Swaminathan, 2002; DeAngelo, DeAngelo, & Stulz, 2006). Moreover, the findings by Grullon, Michaely, and Swaminathan (2002) and DeAngelo, DeAngelo, and Stulz (2006) supported by Fairchild, Guney, and Thanatawee (2014) show that firms at mature level have high possibility to increase the wealth of their investors by distributing the earnings in form of dividends rather than immature firms which still have limited resources and still require more investments which make them tend to retain the earnings for investors.

Based on this review, the study suspects that, if the firms are at mature level and have an ability to increase the wealth of investors, then these firms should have better profits, large retained earnings, and more liquids to attract or give a good news to the investors who expect good returns to buy their shares which gives an impact for increasing the share prices. The hypothesis for testing the effect by characteristics of mature firms on share prices under life cycle theory was developed as follows:

- H1: *liquidity has a significant effect on share price.*
- H2: *profitability has a significant effect on share price.*
- H3: *retained earnings ratio has a significant effect on share price.*

Furthermore, while firms are at mature level, such firms usually face a condition called agen-

cy conflict in case of overinvestment which is broadly defined as free cash flow theory (Myers, 2001). Jensen (1988), Aivazian, Ge, and Qiu (2005), and Fairchild, Guney, and Thanatawee (2014) propose that conflict between managers (or insiders) with shareholders (or investors) begins when firms have an excessive cash and available to spend investments with positive net present value, but then the managers behave to spend it on unprofitable investments for their own benefit. Easterbrook (1984), Jensen (1986), and Brav, Graham, Harvey, and Michaely (2005) suggest that to prevent or to solve the conflict, shareholders decide to increase debt and simultaneously demand for dividends.

Myers (2001) explains that existence of debt can offer good or bad news for investors, where bad news are assumed when the firms face the financial distress, and good news are assumed when the firms are under conflict and at mature level. Myers (2001) proposes that, although debt can contain good or bad news, but its effect for share prices is insignificant, as confirmed by Mikkelsen and Partch (1986) and Shyam-Sunder (1991). In contrast, the investors shall capture the good news when investors assume the insiders to put the debt on investments with positive net present value in terms of increasing the firm value (Ross, 1977). Based on this review, the study suspects that, if the firms are at mature level and investors respond the debt as a good news for increasing the firm value, then debts shall affect the share prices in capital market. The hypothesis for testing the effect by debts on share prices under free cash flow theory was developed as follows:

- H4: *debt ratio has a significant effect on share price.*

**Table 1.** Summary of hypotheses development for testing the relationship of market reaction and fundamental signal

Independent variables	Predicted sign	Theories
Liquidity (CR)	+	Life cycle
Profitability (ROA)	+	Life cycle
Retained earnings ratio (RETA)	+	Life cycle
Debt ratio (LTDAR)	+	Free cash flow
Dividend (DIV)	+	Bird in the hand

Note the work of Easterbrook (1984), it seems that the wealth of shareholders is the main reason which underlies for both of life cycle theory or free cash flow theory, and dividend is a better way to align the interests between insiders and managers. Dreman and Lufkin (2000) prove that dividend can offer the good news which affects the psychology of investors and creates the overreaction on share prices in capital market, as Bhattacharya (1979) and Easterbrook (1984) mention dividend as bird in hand as long as the shareholders are not selling their shares. Based on this review, then the study suspects that, if dividends viewed as a good news for investors, then dividends shall affect the share prices in capital market. Also, if the investors are looking for better dividends as optimum return then the share prices for each dividend payers are different. The hypothesis for testing the effect by dividends on share prices under bird in the hand theory was developed as follows:

*H5: dividend has a significant effect on share price.*

*H6: types of dividend payers have a significant effect on share price.*

Table 1 presents the summary of hypothesis development for testing the effects of independent variables on share prices based on relevant empirical evidences of previous studies in terms of giving some empirical evidence about relationship between market reaction and fundamental signal under theories of life cycle, free cash flow, and bird in the hand.

## 2. RESEARCH METHOD

### 2.1. Sample

This study takes 241 firms which are listed in Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)) for the period 2010–2015 as the sample as shown in Table 2. Because of different financial report structure, this study excluded the finance sector and the property, real estate, and building construction sector.

**Table 2.** Sample

Sectors	Samples	Observed
Agriculture	14	84
Mining	23	138
Basic industry & chemicals	49	294
Miscellaneous	32	192
Consumer goods industry	29	174
Infrastructure, utilities, and transportation	23	138
Trade, service, investment	71	426
Total	241	1446

### 2.2. Variable definitions

This study uses share prices as dependent variable which is measured by closing price at the end of year after corporate action (symbolized by Price). The independent variables for this study are liquidity (*CR*) measured by total current assets divided by total current liabilities, profitability

(*ROA*) measured by ratio of net profit to total assets, retained earnings ratio (*RETA*) measured by ratio of retained earnings to total assets, debt ratio (*LTDAR*) which measured by ratio of total long term debts to total assets, dividend (*DIV*) measured by average of cash dividends in current observation, and types of dividend payers (*Payers*) measured by dummy with categories of higher dividend payers, lower dividend payers, and non-dividend payers. In terms of running the analysis for hypothesis testing, dependent variable and independent variables (except for dividend) have been normalized with natural logarithm.

### 2.3. Regression model

This study conducts the analysis of covariate for hypotheses testing with significance at 0.05. In terms of distinguishing the results, this study controls the sample based on firm size and firm age. The firm size is measured by average natural logarithm of total assets and cut off by median value to get larger firms and smaller firms, whereas firm age is a difference between current year of observation (year of 2015) with established year of each firm and also cut off by median value which giving older firms and younger firms. Based on calculation, median value of firm size is 14.38, while median value of firm age is 33 years, which shows that larger firms are the firms above 14.38, while smaller firms are the firms below or equal 14.38, whereas older firms are firms above 33 years, while younger firms are firms below or equal 33 years. The regression model for this study is:

$$\begin{aligned} Price = & \alpha + \beta_1 \cdot CR + \beta_2 \cdot ROA + \\ & + \beta_3 \cdot RETA + \beta_4 \cdot LTDAR + \beta_5 \cdot DIV + \\ & + \beta_6 \cdot Payers + \varepsilon. \end{aligned} \quad (1)$$

## 3. RESULTS AND DISCUSSIONS

### 3.1. Descriptive statistics

Table 3 presents descriptive statistics for each type of the firms after controlling their size and age. The mean value of the share prices for larger and older firms are higher rather than the other firms,

which means the shares of these firms are more attract the investors in capital market. Compared to other firms, although the mean value of some fundamental factors for larger and older firms is not so high, their retained earnings ratio shows higher mean value rather than the other firms, which means these firms are at mature level. Perhaps, the mature firms are considered as the most important condition and attract the investors in determining their preferences to invest.

### 3.2. Larger and older firms

Table 4 shows liquidity (*CR*), retained earnings ratio (*RETA*), dividend (*DIV*), and types of dividend payers (*Payers*) for larger and older firms are significant, which makes the hypothesis for *H1*, *H3*, *H5*, and *H6* are accepted. Consistent with Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo, and Stulz (2006), and Fairchild, Guney, and Thanatawee (2014), the significant and positive effect by liquidity (*CR*) and retained earnings ratio (*RETA*) are applicable withing life cycle theory. Although profitability (*ROA*) has insignificant effect, positive sign for this variable is still consistent with life cycle theory. According to on these results, larger and older firms in any types of dividend payers are possibly the firms at mature level and have tendencies to increase the wealth of their investors.

Under the life cycle theory, it can be assumed that if these firms are at mature level, then the investors possibly ignore the profitability (*ROA*) which reflects firm's current profit and more consider distributable earnings as the most important factor. Consistent with descriptive statistics, the characteristics of mature firms can offer a good signal which makes the investors tend to put more interest and overvaluing their shares in capital market and that is why these firms have higher share prices rather than other firms.

Since debt ratio (*LTDAR*) has an insignificant effect, larger and older firms in any types of dividend payers don't tend to be in conflict between insiders and their shareholders which makes free cash flow theory unable to be applied on these firms. This result is inconsistent with Jensen (1988), Myers (2001), Aivazian, Ge, and Qiu (2005), and Fairchild, Guney, and Thanatawee (2014), but

**Table 3.** Descriptive statistics

Types of firms	Variables	Min.	Max.	Mean
Larger and older firms ( $N = 348$ )	<i>Price</i>	50.00	62050.00	4158.4741
	<i>CR</i>	0.04	10.64	1.8322
	<i>ROA</i>	-0.64	0.72	0.0621
	<i>RETA</i>	-3.86	0.79	0.1973
	<i>LTDAR</i>	0.01	2.14	0.2260
	<i>DIV</i>	0.00	2053.67	139.8863
Larger and younger firms ( $N = 372$ )	<i>Price</i>	50.00	50750.00	3191.9355
	<i>CR</i>	0.13	15.00	1.8238
	<i>ROA</i>	-0.38	0.61	0.0585
	<i>RETA</i>	-9.40	1.80	0.0379
	<i>LTDAR</i>	0.00	1.41	0.2394
	<i>DIV</i>	0.00	1674.43	80.3839
Smaller and older firms ( $N = 354$ )	<i>Price</i>	35.00	274950.00	3791.4633
	<i>CR</i>	0.00	464.88	4.4772
	<i>ROA</i>	-1.28	3.47	0.0649
	<i>RETA</i>	-75.11	1.33	-0.7488
	<i>LTDAR</i>	0.00	4.83	0.2081
	<i>DIV</i>	0.00	10531.15	411.4074
Smaller and younger firms ( $N = 372$ )	<i>Price</i>	43.00	13900.00	661.8038
	<i>CR</i>	0.00	247.36	7.0576
	<i>ROA</i>	-1.73	2.63	0.0295
	<i>RETA</i>	-32.28	104.77	-0.1396
	<i>LTDAR</i>	0.00	2.19	0.1727
	<i>DIV</i>	0.00	85.00	4.5491

consistent with Mikkelson and Partch (1986), and Shyam-Sunder (1991). This result also implies that increasing the debt ratio for larger and older firms will not give any signal to make their investors react in capital market.

Furthermore, consistent with Dreman and Lufkin (2000), the positive and significant effect by average cash dividends (*DIV*) proves that dividends significantly affect the psychology of the investors

to react in market. In assumption if shareholders are not selling their shares, the bird in the hand effect will exist and give significant impact on share prices as suggested by Bhattacharya (1979) and Easterbrook (1984). Supporting the bird in the hand effect, the significant effect by dividend payers (Payers) shows that the shares of larger and older firms have significantly different prices for each dividend payers which are higher dividend payers, lower dividend payers, and non-dividend

**Table 4.** Analysis of covariate to test the market reaction on fundamental signal

Independent variables	Larger and older firms	Larger and younger firms	Smaller and older firms	Smaller and younger firms
Intercept	768.902	928.446	770.316	1283.365
CR	29.606*	6.151*	14.294*	5.821*
ROA	2.891	0.821	12.661*	17.283*
RETA	5.773*	2.003	2.181	1.680
LTDAR	3.379	2.741	15.739*	1.987
DIV	110.548*	80.945*	75.813*	8.308*
Payers	53.322*	159.848*	108.590*	3.399
Adjusted R2	0.452	0.485	0.503	0.140

Note: Dependent variable is share prices. The corrected models have significant F-value for all models.

payers, in condition when the investors are looking for better dividends as optimum return.

### 3.3. Larger and younger firms

Table 4 shows that liquidity (*CR*), dividend (*DIV*), and types of dividend payers (*Payers*) for larger and younger firms are significant, thus hypothesis for *H1*, *H5*, and *H6* are accepted. Inconsistent with Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo, and Stulz (2006), and Fairchild, Guney, and Thanatawee (2014), the larger and younger firms are not mature firms, since their profitability (*ROA*) and specially their retained earnings ratio (*RETA*) are insignificant, although these variables have positive sign, which makes these firms not to meet the criteria under life cycle theory.

Debt ratio (*LTDAR*) for larger and younger firms in any types of dividend payers has insignificant effect which implies these firms don't tend to be in internal conflict and free cash flow theory is unsuitable. This result is inconsistent with Jensen (1988), Myers (2001), Aivazian, Ge, and Qiu (2005), and Fairchild, Guney, and Thanatawee (2014), but consistent with Mikkelson and Partch (1986), and Shyam-Sunder (1991) which gives an implication that increasing the debt ratio will not give any signal to make investors react on their share prices.

The positive and significant effect by average cash dividends (*DIV*) is consistent with Dreman and Lufkin (2000), which means dividends can offer a good signal in market and affect the psychology of the investors. The significant effect by dividend payers (*Payers*) shows that the shares of larger

and younger firms have a significant difference of prices for each dividend payers, while investors are looking for better dividends as optimum return. These results are supporting the findings of Bhattacharya (1979) and Easterbrook (1984) in context of bird in the hand under assumption if the shareholders are not selling their shares.

### 3.4. Smaller and older firms

Table 4 shows liquidity (*CR*), profitability (*ROA*), debt ratio (*LTDAR*), dividend (*DIV*), and types of dividend payers (*Payers*) for smaller and older firms are significant, which makes the hypothesis for *H1*, *H2*, *H4*, *H5*, and *H6* are accepted. Note the work of Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo, and Stulz (2006), and Fairchild, Guney, and Thanatawee (2014), the insignificant effect of retained earnings ratio (*RETA*) shows for smaller and older firms possibly do not meet criteria as mature firms under life cycle theory. More complex, since their liquidity (*CR*) and profitability (*ROA*) show significant effect, these firms are likely close to mature level or growth level as proposed by Grullon, Michaely, and Swaminathan (2002). Descriptive statistics shows the share prices for these firms are higher after the share prices of larger and older firms.

Furthermore, the positive and significant effect by debt ratio (*LTDAR*) shows the smaller and older firms have tendency under internal conflict although these firms are not at mature level, which means this result is still consistent with Myers (2001) in the context of free cash flow theory. The result also confirms that smaller and older firms

are at growth level, in assumption when these firms are in condition for expanding and allocate their debts for financing profitable investments as suggested by Grullon, Michaely, and Swaminathan (2002). In addition, since debt as the source of fund for investment, it means shareholders are tend to use debt as a tool to control the behavior of insiders while planning and deciding the capital expenditures as proposed by Easterbrook (1984), Jensen (1986), and Brav, Graham, Harvey, and Michaely (2005). If this is the case, the result is supporting the findings by Ross (1977), because investors shall capture the increasing for debt ratio by these firms as the good signal for future dividends.

Similar with larger and older firms and larger and younger firms, the result for average cash dividends (*DIV*) shows positive and significant effect on share prices. Moreover, the result also shows that share prices between dividend payers (*Payers*) for smaller and older firms are different at significant rate. These results implies that information contents by dividends can offer the good signal to investors and significantly affect their psychology in capital market as predicted by Bhattacharya (1979) and Easterbrook (1984), and Dreman and Lufkin (2000) in context of bird in the hand theory.

### 3.5. Smaller and younger firms

Table 4 shows that liquidity (*CR*), profitability (*ROA*), and dividend (*DIV*) for smaller and younger firms are significant, which makes the hypothesis for *H1*, *H2*, and *H5* are accepted.

Similar with smaller and older firms, the result for smaller and younger firms shows these firms are not at mature level since retained earnings ratio (*RETA*) has insignificant effect but only liquidity (*CR*) and profitability (*ROA*) show the significant effect, which makes life cycle theory cannot be applied as suggested by Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo, and Stulz (2006), and Fairchild, Guney, and Thanatawee (2014).

In context of free cash flow theory, since debt ratio (*LTDAR*) for smaller and younger firms in any types of dividend payers has insignificant effect then these firms are possibly not under conflict between insiders and shareholders as suggested by Jensen (1988), Myers (2001), Aivazian, Ge, and Qiu (2005), and Fairchild, Guney, and Thanatawee (2014). Reversely, this result is consistent with Mikkelson and Partch (1986), and Shyam-Sunder (1991) which implies the increasing for debt ratio on these firms shall not give any signal to make investors react on their share prices.

Consistent with Bhattacharya (1979), Easterbrook (1984), and Dreman and Lufkin (2000), the result shows that dividends as bird in the hand can play its role to deliver a good signal and affecting the psychology of the investors to react on shares in capital market. Uniquely, the result shows insignificant difference of share prices between dividend payers (*Payers*) which implies that shares for these firms in any types of dividend payers have homogeneous valuations by investors.

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## CONCLUSION

This study finds that the life cycle theory and free cash flow theory are not absolute theories to explain the market reaction for any firms because each firms have their own characteristics. The findings show that share prices shall react differently depending on each characteristics of the firm. Based on characteristics, the study shows that the larger and older firms are mature firms with higher share prices but not under internal conflict, the larger and younger firms are not at mature level and not under internal conflict, the smaller and older firms are firms at growth level or close to mature level and under internal conflict, and the smaller and younger firms are not the firms at mature level and not under internal conflict.

The bird in the hand theory seems applicable in any case of firms since the informational contents by dividend can deliver good signal to investors in capital market. Excluding the smaller and younger firms, this study proves that dividend is still a better way in determining the reaction of share prices, since each type of firms have their own types of dividend payers with different share prices. This study



suggests to research the behavior for each type of dividend payers for each types of firms (exclude smaller and younger firms) which affect their share prices in capital market. Although the findings for this study are not absolute, since it is limited to the samples in certain periods, but hope fully the evidences shall become reference for next studies in the same area.

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