Conference Paper

How Do Free Cash Flow and Dividend Policy Affect Stock Return?

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Abstract

This research investigates the effect of free cash flow and dividend policy with various measures of stock return and announcements for three days. The use of analytical paths using SMARTPLS programme resulted in the previously hypothetical findings that the information of free cash flow stated in published financial statements is rarely used by Indonesian investors. The other result of this study showed the weakness of company governance and dividend signals.

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Received: 23 January 2018
Accepted: 5 April 2018
Published: 23 April 2018

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the 1st IRCEB Conference Committee.

1. Background of the Study

Free cash flow is valid to use by companies. According to the hypothesis of free cash flow tested at Turkish exchanges [6], debt and dividend financing are quintessential to control manager's action. The result of Kadioglu & Yilmaz's research showed significant correlation between free cash flow and debt and dividend financing. The previous research of free cash flow that caused agency problem can be decreased through a new stock purchase announcement [10]. The result indicated an abnormal return occurs because of a new stock purchase.

Several previous research of the same aforementioned issue said that the problem can be decreased by repurchasing company's stock. This is considered as one of the methods to reduce the wasted funds to fund net present value project. It will be better for companies that experience agency problems to do repurchase announcement because investors will give their response to the stock market [7]. A previous research about overinvestment showed a significantly positive result that the occurrence of the announcement of company's stock repurchase triggers the reaction of the market [12].

An agency problem caused by free cash flow was also detected in a Chinese oil company in which most of the stock was owned by the governmental institution [15]. This happened because of the ownership structure and governmental factors. If the stockholder has an expectation that the manager might misuse the company's free

cash flow by issuing new stocks in the type of common stock, the stockholder or the investor will respond it with negative signals because this will only be profitable for the manager than for the investors [8].

A research done in America's Value Investment Survey showed that companies which have high free cash flow are characterized as having much treasury to fund their investment. A research that investigated free cash flow hypothesis in companies that had huge free cash flow showed a result that supported the hypothesis. Companies that have high dividend yield or high stock repurchases' percentage will have positive excess returns after being listed in Value Line list Investment Survey for two years. The published free cash flow in the said survey company in America results in an act of reducing capital spending, increasing dividend rate, and slowing rates of net share issuances in the years following their appearance on the Value Line list [11].

This study was validated through several phases: (1) testing the effect of free cash flow towards stock returns after publication, (2) testing the effect of free cash flow towards stock returns after General Meetings of Shareholders, and (3) testing the effect of free cash flow towards stock returns through dividend policy.

2. Research Hypothesis

H_1: Investors positively react to the announcement of free cash flow.

H_2: Investors positively react to the announcement of a cash dividend.

H_3: Investors positively react to the announcement of free cash flow through cash dividend.

3. Literature Review

3.1. Dividend Policy

The manager also plays a role to determine the proportion of dividend distribution [3]. In a research done in a Canadian company, a manager took part in a dividend distribution voting. The result showed that the cash dividend decreased as the manager's vote increased. On the other hand, dividend payout is never be done while the manager has the absolute voting control in a company. Research findings showed that 53 out of 63 companies only shared dividend yield zero or shared no dividend at all while the company was controlled by owners as the manager. Yahyaee, Pham,

& Walter (2011) stated that announcement of a dividend increase will also increase stock returns while the announcement of shared dividend decrease will decrease stock returns. Taxes affect neither dividend nor capital gain because, in Oman, stockholders are not a tax subject. Tax can only be applied to corporate income.

Companies that own policy changes on shared dividend rates will affect changes in stock price [2]. In another research, dividend policy supported free cash flow hypothesis to reduce agency problem and the dividend policy contributed bigger effects in reducing agency problem than leverage. The median of dividend policy is 71% and it is bigger than the rates of company's loan usage [1].

3.2. Free Cash Flow

Jensen (1986) stated that free cash flow is cash flow in excess of that required to fund all projects that have positive net present value when discounted at the relevant cost of capital. A conflict of interests that happens between managers and stockholders when the company generates free cash flow is considered severe. The agency problem caused by free cash flow can be reduced by paying a dividend or using the funds taken from loans. The act of controlling managers' financial policies through loans or dividend mechanism will be irrelevant if the company is in the state of growth and has a high investment potency [9].

3.3. Stock Returns

Stock returns are derived from the capital gain or capital loss plus the dividend yield. Capital gain or capital loss is the result of the difference between the current stock price and the previous stock price and then divided by the previous period.

3.4. Population and Sample

The population of this research was the listed companies in Indonesia Stock Exchange from 2013-2015 that were consistently sharing the dividend for three years in a row. The sample consisted of 95 companies per year and after three years of research, the final sample consisted of 285 companies.

3.5. Data Analysis Methods

To evaluate the investors' reaction towards free cash flow and dividend announcement, the steps done were as follows:

First, determining the time horizon of the period as three days ($_{t+1,t+2,t+3}$). This was based on researcher's assumption that that was the longest time the investor still utilized the information of free cash flow and dividend announcement given the rapid and vast information that can be accessed by the investors by the time the research was conducted.

Second, calculating the free cash flow, dividend, and stock returns.

The formula for free cash flow (Prihadi, 2012):

Free Cash Flow to The Firm = (NOPAT +Depreciation) – Gross Investment + Δ NOWC

The formula of free cash flow is based on Free Cash Flow to The Firm because it is addressing the company's fundraising parties which are creditors and investors.

Cash dividend formula (Gumanti, 2013):

Dividend Payout Ratio = $\frac{Dividend\ \ per\ Share}{Earning\ Per\ Share}$

Stock returns formula (Jogiyanto, 2014:264):

Return total = $\frac{P_{1}-P_{1-t}}{P_{t-1}} + dividend\ \ yield$

Third, categorizing positive and negative free cash flow during the 3-year period and dividing them into financial and non-financial sectors.

Fourth, analyzing the data using SmartPLS v.s 2.0

4. Research Findings

4.1. Data Analysis

The category of companies that had positive free cash flow was 32 issuers and that had negative free cash flow was 63 issuers in 2013. Meanwhile, in 2014 and 2015, there were 31 issuers who had positive free cash flow and 64 issuers who had negative free cash flow.

4.2. Hypothesis Testing

1. The effect of free cash flow on CAR of publication stock by including dividend yield in the calculation process. Based on the test using SmartPLS, it was generated

that free cash flow variable significantly affects stock returns during CAR $_{t+2}$ (the second day).

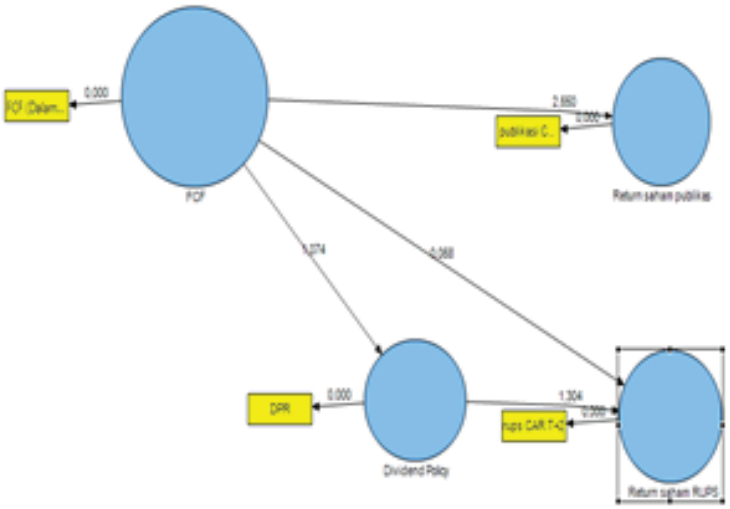

Figure 1: Structural Equation Model with CAR.

Empirical equation model:

Model 1 = publication stock returns = 0.049073 FCF

Model 2 = DPR = 0.049881 FCF

Model 3 = stock returns of GMS = -0.003181 FCF + 0.0042630 DPR

Testing evaluation model was done using PLS with goodness of fit model obtained from R Square value.

Table 1: R Square.

Exogenous Variable	R^2
Dividend Policy (Z)	0.002488
GMS stock returns (Y2)	0.007288
Publication stock returns (Y1)	0.002408
$R_m^2 = 1 - -((1 - R_Z^2) * (1 - R_{Y2}^2)) R_m^2 = 1 - -((1 - 0.002488) * (1 - 0.007288))$ = 0.009758	

An R-square variable of stock returns after the publication is 0.002408. This indicates that publication stock returns can be explained by free cash flow of 0.2408%. This shows that the diversity of dividend policy can be explained by free cash flow of 0.2488%. An R-square variable of stock returns after the GMS is 0.00728. This may indicate that the diversity of stock returns after the GMS can be explained by free cash flow and dividend policy of 0.728%.

According to the aforementioned R-square value, it can be concluded that the factors affecting the exogenous variable are 100% not influenced by the variables used in the study.

Table 2: Direct and Indirect Influence.

X	Y	Z	Coefficient		
			Direct	Indirect	Total
FCF	Publication returns	-	0,049073*		0,049073
FCF	Dividend	-	0,049881		0,049881
FCF	GMS Return	Dividend	-0,003181	0,0042630	-0,001082
Dividend	GMS Return	-	0,085467		0,085467
P.S: * (significance) 5%					

Based on the table above, it can be concluded that the one and only which is significant is the free cash flow towards the stock returns after publication. The coefficient of free cash flow's direct influence towards publication stock returns is 0.049073. It means that if the free cash flow increases for 1 million, then the publication stock returns will also increase for 4.9%.

4.3. Significance Testing

The path coefficient value in hypothesis testing is shown by t-statistic value and it should be above 1.96 for hypothesis testing with the alpha of 5%. Significant testing is performed through bootstrapping procedure and the decision-making basis of t-statistic value should be greater than the 1.96 table to acquire a significant test.

Table 3: Significance Level.

Variable Relations	T Statistics (|O/STERR|)
Dividend Policy -> GMS Stock Returns	1.304125
FCF -> Dividend Policy	1.074348
FCF -> GMS Stock Returns	0.068430
FCF -> Publication Stock Returns	2.650130

2. The influence of free cash flow towards publication stock returns by dividend yield is included into the calculation. Based on the calculation using SmartPLS, it

is known that free cash flow significantly affects returns when it is returned $_{t+2}$ or the second day.

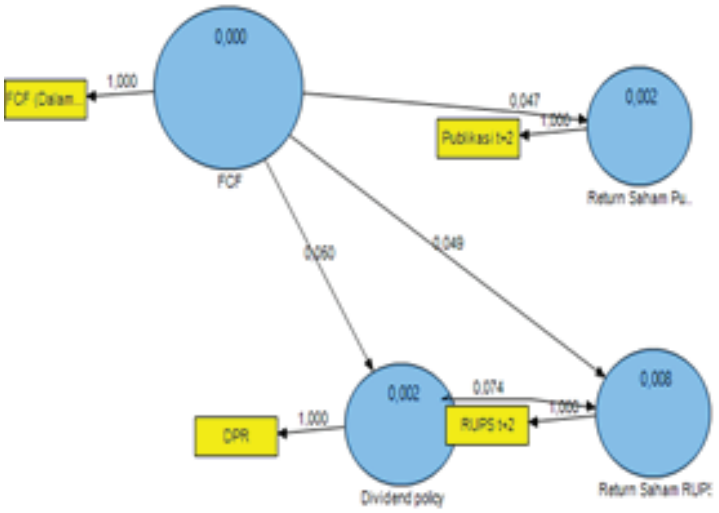

Figure 2: Structural Equation Model with Daily Returns.

Empirical equation model:

Model 1 = publication stock returns = 0.046547 FCF

Model 2 = GMS stock returns = 0.049 FCF

Model 3 = GMS stock returns = 0.060 FCF + 0.074 Cash Dividend

Table 4: R square.

Exogenous Variable	**R^2**
Dividend policy (Z)	0.002488
Publication stock returns (Y1)	0.002167
GMS stock returns (Y2)	0.008209
$R_m^2 = 1 - -((1 - R_Z^2) * (1 - R_{Y2}^2))R_m^2 = 1 - -((1 - 0.002488) * (1 - 0.008209))$ = 0.010677	

An R-square variable of stock returns after publication is 0.002167. This indicates that publication stock returns can be explained by free cash flow of 0.2167%. An R-square variable of dividend policy values 0.002488. This indicates that the diversity of dividend policy can be explained by free cash flow of 0.2488%. An R-square variable of stock returns after GMS is 0.008209. This indicates that the diversity of stock returns after GMS can be explained by free cash flow and dividend policy of 0.8209%.

According to the said R-square value, it can be concluded that the factors affecting the exogenous variable are 100% not influenced by the variables used in the study.

Table 5: Coefficients Path.

	Dividend policy	FCF	Publication Stock Returns	GMS Stock Returns
Dividend policy				0,074020
FCF	0,049881		0,046547	0,048693

In this significance test, it is known that only the influence of free cash flow towards the stock returns on the second day that is significant. The t-statistics is 2.622552 > 1.96 with the alpha of 5%.

Table 6: The Level of Significance Return of the Second Day.

Variable Relations	T Statistics (|O/STERR|)
Dividend policy -> GMS Stock Returns	0.986937
FCF -> Dividend policy	1.046544
FCF -> Publication Stock Returns	2.622552
FCF -> GMS Stock Returns	0.566852

According to the information of significant influence above, a comparative table of daily returns and Cumulative Abnormal Return (CAR) is made.

Table 7: The Difference of Significance Level and R^2.

Events Period	Stock Returns		Cumulative Abnormal Return	
	Significance	R Square	Significance	R Square
T_{+1}	1.081255	0.000393	1.081255	0.000393
T_{+2}	**2.622552***	0.007288	**2.650130***	0.002167
T_{+3}	0.029381	0.000001	0.003181	0.000000
P.S: * (significance) 5%				

Table 7 shows that free cash flow affects stock returns and cumulative abnormal returns only on its second day. The result of this test proves robust or the consistency of free cash flow's influence test results towards stock returns. This is regarded as information that affects the stock market in Indonesia on the second day after the company publishes the financial statements rather than after the GMS approving the

financial statements as for management accountability in performance over a period as well as deciding the amounts of dividends to be distributed.

5. Discussions

The effect of free cash flow on stock returns is only on the second day. This shows that there is signaling intact to investors only on the second day because the predicted component calculation in the financial statements that become the information of the free cash flow is responded and reacted significantly positive on the day. This response is considered normal considering free cash flow calculation is not popular yet and investors require sufficient time to analyze one. This is in accordance with a study in USA showing that companies' FCF has positive abnormal returns [4]. Based on the two previous types of calculation, it has the same result which is affecting the second day. This indicates investors' stock returns respond to a sell or a purchase on the second day. It is estimated that on the first-day investors are still taking other factors besides companies' free cash flow indicators into consideration as the basis to analyze companies' future prospects and they also utilize other commonly used measurements and available rates such as profitability, solvency, liquidity, and market size.

On the other hand, the dividend policy of cash dividend does not consider the amount of free cash flow. It is assumed that this is used to maintain the stability of dividend payment which has been set as the target of issuer every period. These results support the proposition proposed by the weak company's governance, government ownership, and dividend signals [13].

6. Conclusions

The effect of free cash flow on stock returns significantly affects the second day after the publication of financial statements only. In addition, the dividend policy that is issued by the issuers shows the weak governance of the company, government ownership, and dividend signals. The cumulative and non-cumulative calculation of stock returns which include dividend yield calculation significantly influence the stock returns $_{t+2}$. The suggestion for future research is it would be better to prolong the period up to more than 5 years so that it can be known whether the consistency of the influence on stock returns is significant or not.

References

[1] Agrawal, A. Jayaraman, N. 1994. *The Dividend Policies of All Equity Firms: A Dirict Test of Free Cash Flow Theory.*Managerial and Decision Economics, Vol. 15, No. 2 (Mar-Apr), pp 139-148.

[2] David, J. D., Diane, K.D., Atulya, S. 1994. *The Information Content of Dividend Changes: Cash Flow Signaling, Overinvestment, and Dividend Clienteles*. The Journal of Financial and Quantitative Analysis, Vol. 29, No. 4 (Dec., 1994), pp. 567-587.

[3] Eckbo, E., B. Verme, S. 1993. *Managerial Shareownership, voting power and cash dividend policy.*Journal of Corporate 1 (1994) 33-62.

[4] Hackel, K.S., J. Livnat, and A. Rai, (2000). A Free Cash Flow Investment Anomaly, Journal of Accounting, Auditing and Finance, 15 (1), (Winter), 1–24.

[5] Jensen, M.,C. (1986). *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers.* The American Economic Review, Vol. 76, No. 2.

[6] Kadioglu, E. Yilmaz, E., A. 2016. Is the free cash flow hypothesis valid in Turkey? Borsa _Istanbul Review (2017),http://dx.doi.org/10.1016/j.bir.2016.12.001.

[7] Lo, K. H., Wang, K., Yeh, C, T. 2008. *Stock Repurchase and Agency Problems: New Evidence in Taiwan's Stock Market*. Emerging Market Finance & Trade, Vol.44, No 1 (Jan-Feb), pp. 84-94.

[8] Mann, S.V., Sicherman, N.W. 1991. *The Agency Cost of Freee Cash Flow: Acquisition Activity and Equity* Issues. Journal of Business.

[9] Smith, R.l., Kim,J.H. 1994. *The Combined Effect of Free Cash Flow and Financial Slack ob Bidder and Target Stock Return.* The Jounal of Business, Vol. 67, No. 2 (Apr., 1994), pp. 281-310.

[10] Vafeas, N. Joy, O., M. 1994. *Open Market Share Repurchase and the free cash flow hypotesis G35.* Economics Letters 48 (1995) 405-410.

[11] Vogt, S.C., Vu, J.D,. 2000. *Free Cash Flow And Long-Run Firm Value: Evidence From The Value Line Investment Survey.* Journal of Managerial Issues.

[12] Wang, C.S., Strong,N., Tung, Samuel., Lin,S. 2009. *Share Repurchases, the Clustering Problem, and the Free Cash Flow.* Journal Financial Management, Vol. 38, No 3 (Autumn, 2009), pp 487-505.

[13] Yahyaee, K., H. Pham, M., T. Walter, S.,T. 2010. *Dividen Stability in a unique environment.*Managerial Finance Vol.36, No. 10 (2010) 903–916

[14] Yahyaee, K., H. Pham, M., T. Walter, S.,T. 2011. *The information content of cash dividend announcement in a unique environment.*Journal of Banking & Finance 35 (2011) 606–612.

[15] Zhang, D., Cao, H., Dickinson, D.,G. Kutan, A., M. 2016. *Free cash flows and overinvestment: Further evidence from Chinese energy firms.* Energy Economics 58 (2016)