THE EFFECTS OF LIFE CYCLE AND FREE CASH FLOW ON DIVIDEND OF AGRICULTURAL COMPANIES THAT LISTED IN INDONESIA STOCK EXCHANGE

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ABSTRACT

Company decision to give profits to their investors is based on several reasons including internal policy from the company. Therefore, this study discusses the effects of life cycle and free cash flow on dividend of agricultural companies that listed in Indonesia stock exchange. Independent variables; used are free cash flow, life cycle, firm size, leverage, assets growth, and investment opportunity set. The population in this study is Agricultural company listed on Indonesia Stock Exchange (BEI) in the period of 2015 - 2018. The sample collected using purposive sampling methods. Total of 21 companies were determined as samples. The method of analysis in this study is panel data regression with basis on fixed effect model. The result of this study indicate that the independent variables of free cashflow, life cycle, firm size, leverage, and investment opportunity set have positive impact toward dividend payout ratio while assets growth has negative impact on dividend payout ratio. The result of determination coefficient shows that the independent variables give affect 63.69% against dependent variable.

Keywords: free cash flow, life cycle, firm size, leverage, assets growth, investment opportunity set, dividend payout ratio, dividend policy.

INTRODUCTION

Clientele effect theory explained that investors, who have a greater preference for dividends, see dividends as more certain than capital gains (Keown, Martin, Petty, & Scott, 2003). Investors who prefer dividends expect that the level of dividend distribution and growth will be adjusted to the profits of the company. The relationship between stock prices and dividend policy is supported by the Bird in the Hand theory expressed by Gordon (1963) and Lintner (1962). According to the theory, dividend policy has a positive effect on companies stock price. However, this theory is refuted by the Dividend Irrelevant theory expressed by Miller and Modigliani (1961) which stated that stock price is influence by profit-making activities rather than dividen policy.

In the implementation, Black (1976) stated that dividend policy is like a puzzle, therefore dividend policy are significant in financial sector. Various studies on dividend behaviour have been conducted found an acceptable explanation on the imprtance of dividend policy (Black, 1976; Allen & Michaely, 2003). Dividend policy is made by managers by considering the determination of how much profit is distributed as dividends and how much portion is retained earnings (Levy and Sarnat, 1990; in Rosdini, 2009). Dividend distribution is largely influenced by the behaviour of investors who prefer high dividends, because dividends that distribute today are more valuable than the capital gains obtained later. On the contrary,

management needs to hold cash to pay off debt or increasing investment in form of expansion (Suharli & Rachpriliani, 2006).

On the other hand, management needs to implement optimal dividend policies to create a balance between current dividends and future growth (Brennan & Thakor, 1990) where it become the mechanism for controlling shareholders of the management (Suharli & Rachpriliani, 2006). Cash dividend policy according to (Kallapur & Trombley, 1999) demonstrated through dividend payout ratios and dividend yields. Payment of dividends, especially cash dividends to shareholders, is highly dependent on the cash position available. This is proven by research conducted by Sutrisno (2001) in Rosdini (2009) which stated that among several factors that influence the Dividend Payout Ratio, only cash position factor and Debt to Equity Ratio have a significant effect. Cash positions that are truly available to shareholders will be reflected in the free cash flow owned by the company.

Jensen (1986) defines free cash flow as cash remaining after all projects that generate positive net present value. Walsh (2003) in Gustiana (2009) defines free cash flow as discretionary cash flow available to companies. Free cash flow is cash from operating activities minus capital expenditures company spends to meet current production capacity. Free cash flow have a purpose for discretionary uses such as acquisition and capital expenditure with growth orientation, debt repayment, and payment to shareholders in the form of dividends. Companies with excess free cash flow will have better performance than other companies because they have cash available for growth, debt payments and dividends. They can benefit from various opportunities that other companies might not.

The expected results of this study is to investigate whether the availability of free cash flow of agricultural company influence cash dividend payment policies to shareholders. Since, agricultural company are seasonality, perishability, and variability thus making their free cash flow depends on their characteristics.

RESEARCH METHOD

Conceptual Framework

This study use six independent variables and one dependent variable. Independent variable consist of Free Cash Flow (X1), Life Cycle(X2), Firm Size (X3), Leverage (X4), Assets Growth (X5) and Investment Opportunity Set (X6). Dependent variable in this research is Dividend Payout Ratio (Y). Based on the background, formulation of problem, research purposes and previous research, the research model is as follow :

Figure 1. Conceptual Framework

Research Hypothesis

- H1: Free cash flow positively affects dividend payout ratio.
- H2: Company's life cycle positively affect dividend payout ratio.
- H3: Firm size positively affect dividend payout ratio
- H4: Leverage negatively affect dividend payout ratio
- X5: Assets growth negatively affect dividend payout ratio
- X6: Investment opportunity set positively affect dividend payout ratio

Data

Data obtained indirectly from third parties ; Indonesian stock exchange website, yahoo finance, BPS, Investing anf Wall Street Journal's. The data collection method used by researchers is the documentation method which is collecting data from audited financial statements of agricultural companies that listed in Indonesia Stock Exchange from 2015 to 2018.

Population and Sample

The population in this study is agricultural companies listed on the Indonesia Stock Exchange (IDX) from 2015 to 2018. Sample criteria to be examined include the following:

1. Agricultural companies listed in Indonesia Stock Exchange and publish their financial reports.
2. Agricultural companies that have variables related to research measured by Free Cash Flow, Life Cycle, Firm's Size, Leverage, Asset Growth and Investment Opportunity set.
3. Agricultural companies that publish financial reports from 2015 to 2018 in succession.
4. Agricultural companies that distribute dividends in 2015 to 2018 continuously.

Method of Analysis

1. Descriptive Statistics

The descriptive statistics are used to explain the mean, standard deviation, average, and minimum data values. This analysis allows the writer to view the raw data in a meaningful way by summing the data. Hence, the writer will define the uncertainty and error in the data as well as minimize the occurrence of the question of sample distribution.

2. Model Specifications

Random effect and fixed effect model validation were also employed to further verify the findings. The econometric model under analysis is:

$$Y_{it} = C_{it} + \beta_1.X_{1it} + \beta_2.X_{2it} + \beta_3.X_{3it} + \beta_4.X_{4it} + \varepsilon_{it}$$

Whereas:

- Y = Dividend Payout Ratio
- X_1 = Free Cash Flow
- X_2 = Company's Life Cycle
- X_3 = Firm's Size
- X_4 = Leverage
- i = each firm
- t = each period (year)

a. Common Effect Model

This method is the simplest of all panel data regression models, since it incorporates both cross section and time series data as a whole, without supervising the time and cross differences. The Ordinary Least Square (OLS) is the most common approach utilized in this model.

b. Fixed Effect Model

The Fixed Effect Model method uses an assumption that all intercepts are different from each cross section, while the slopes remain constant. In order to differentiate each cross data this technique uses dummy variable, so the intercept will also be different.

c. Random Effect Model

Random Effect Model assumes intercepts are different for each cross data, assuming the intercepts are random (stochastic) variables. The model will mostly be helpful if the sample was taken randomly to represent the research data against the population. This technique also assumes that the errors between the cross section and time series could be correlated.

3. Chow Test (F-statistics)

This test will assess if Fixed Effect is more suitable than Popular Effect. The outcome of this test could be interpreted with respect to the value of the F-probability. Therefore, we cannot dismiss null hypothesis if the significance is more than 5 per cent. If the value is less than 5%, thus we should reject the null hypothesis. The null hypothesis will consider the Standard Effect, while the Fixed Effect will accept the alternative hypothesis.

4. Hausman Test

Hausman created a method for determining whether Fixed Effect is more acceptable than Random Effect. The concept was based on Least Squares Dummy Variables (LSDV) on Fixed Effect will be more effective on Random Effect System rather than Generalized Least Squares (GLS). The null hypothesis thus supports the Random Effect, while the alternative hypothesis refuses the Random Effect.

RESULT AND DISCUSSION

Descriptive Statistics Analysis

Table 1. Descriptive Statistics

Item	Y	X1	X2	X3	X4	X5	X6
Mean	8.170206	0.108694	0.408830	155.9196	8.037809	6.795278	28.20391
Median	8.258682	0.083078	0.399475	150.2080	8.121480	6.782192	15.87897
Maximum	11.20482	0.411153	0.824523	196.5820	9.011524	8.983063	425.1109
Minimum	5.587249	-0.111843	-0.428340	122.0040	6.645091	4.189655	-
							1.758.262
Std. Dev.	0.941491	0.105345	0.214260	17.79342	0.535969	0.929144	50.99985
Skewness	-0.247253	1.137960	-0.532395	0.363321	-0.398995	-0.084940	5.912699
Observations	97	97	97	97	97	97	97

Source: Eviews 9.0 (Processed Data)

Based on table 3.1, number of total observations are 97, with 28 cross section data and 4-year period. The dependent variable Y represents the dividend payout ratio, which has minimum value by 5.587249 and the maximum value by 11.20482. It means the standard deviation of the agricultural companies' dividend payout ratio has minimum value by 5.587249 point, and maximum value by 11.20482 point. The average of the dividend payout ratio is 8.170206 which considered quite volatile. Moving on the skewness and kurtosis of the dividend payout ratio, it shows that the overall volatility of the sample is normally distributed, which means the level of the volatility is quite similar for all cross section.

Table 2. Common Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.013375	1.512326	5.298709	0.0000
X1	2.858055	0.869198	3.288151	0.0014
X2	0.551094	0.436721	1.261890	0.2102
X3	-0.004488	0.005584	-0.803781	0.4236
X4	0.243763	0.191075	1.275745	0.2053
X5	-0.253980	0.097019	-2.617845	0.0104
X6	0.003091	0.001760	1.756533	0.0824
R-squared	0.207954	Mean dependent var		8.170206
Adjusted R-squared	0.155151	S.D. dependent var		0.941491

Source: Eviews 9.0 (Processed Data)

Table 3.2 shows that the impact of free cash flow (X_1) is significant toward the dividend payout ratio, as the probability is lower than p-value (0.05 or 5%). The coefficient of free cash flow means every 1 point of change in free cash flow, there will be 2.85 point of change in dividend payout ratio. Free cash flow remains on operating costs and investments needed by agricultural company to maintain and increase cash flow. When a company has a free cash flow, the company is considered to have satisfactory financial flexibility. Managers will get pressure from shareholders to distribute dividends to avoid the possibility of managers making adverse investments (Mahadwartha, 2007).

In addition, the coefficient of leverage (X_4) is 0.243 and the probability is greater than 0.05. The result showed that leverage has no significant effect toward the dividend payout ratio, when the leverage increase by 1 point the dividend payout ratio will increase 0.243. This result supports the research of Puspita (2009) and Thanatawee (2011). The sixth variable, Investment opportunity set (X_6), has significant effect toward the dividend payout ratio because the probability is lower than 10% and the coefficient is 0.003.

In conclusion, investment opportunity set has positive relationship with dividend payout ratio and this result supporting a research from Andasawari *et al* (2013), Mahadwartha and Hartono (2002). Agricultural Companies that have high investment opportunities will be able to increase dividend payments. Therefore, significant level at 10% means high investment opportunities guarantee that the level of dividends paid is high.

Table 3. Fixed Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.538116	7.951842	-0.319186	0.7506
X1	0.093449	1.327054	0.070419	0.9441
X2	0.209025	0.836939	0.249749	0.8036
X3	0.017551	0.049363	0.355554	0.7234
X4	1.034539	0.549413	1.882991	0.0643
X5	-0.066567	0.097091	-0.685610	0.4955
X6	0.000462	0.002556	0.180635	0.8572

Source: Eviews 9.0 (Processed Data)

Table 3.3 explains that leverage (X₄) has significant effect toward dividend payout ratio since leverage has lower probability value than 10% and the rest of other variable have higher probability value than 10%. When the leverage (X₄) increases by 1 point, the dividend payout ratio will increase 1.034.

There are several variables effect dividend payout ratio positively although they are not significant; free cash flow (X₁), life cycle (X₂), firm size (X₃) leverage (X₄), and investment opportunity set (X₆). Assets growth (X₅) has weak negative impact toward dividend payout ratio.

Table 4. Random Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.348058	1.772375	4.145882	0.0001
X1	2.130508	0.926387	2.299804	0.0238
X2	0.397343	0.484263	0.820512	0.4141
X3	-0.003677	0.006755	-0.544364	0.5875
X4	0.248815	0.221124	1.125228	0.2635
X5	-0.162721	0.087140	-1.867341	0.0651
X6	0.003092	0.001756	1.760157	0.0818
R-squared	0.115187	Mean dependent var		5.208447
Adjusted R-squared	0.056200	S.D. dependent var		0.767361

Source: Eviews 9.0 (Processed Data)

Table random effect model above shows that free cash flow (X₁) is positive and has significant level at 5%. When the free cash flow increases by 1 point, the dividend payout ratio will increase by 2.130. According to (Mahadwartha, 2007) when a company has a free cash flow, the company is considered to have satisfactory financial flexibility. Managers will get pressure from shareholders to distribute dividends to avoid the possibility of managers making adverse investments.

F-Test (Chow Test) Result

In order to determine the best model for interpreting the panel results, this research used several tests including this F-test. This test has been used to determine whether Fixed Effect Model is better than Common Effect Model.

Table 5. F-Test (Chow Test) Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.757636	(27,63)	0.0005
Cross-section Chi-square	75.676522	27	0.0000

Source: EvIEWS 9.0 (Processed Data)

As shown in the table, the result of the cross-section F probability is lower than p-value ($0.0005 < 0.05$). Therefore, we should reject the H_0 and accept H_1 , it means FEM is better to be applied on this research rather than CEM. The Fixed Effect Model method uses an assumption that all intercepts are different from each cross section, while the slopes remain constant.

Hausman Test Result

Hausman also developed a test to see if FEM is better than REM. This test is based on an idea of whether LSDV is more successful on FEM than on /GLS REM. The null hypothesis will therefore be that GLS is more effective than LSDV, and the opposite is true for alternative hypothesis (Nachrowi& Usman, 2006).

Table 6. Hausman Test Result

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.006176	6	0.0093

Source: EvIEWS 9.0 (Processed Data)

The result from table 3.6 clearly shows that the value of the cross-section random probability is lower than p-value ($0.0093 < 0.05$). Therefore, we should reject null hypothesis, which means fixed effect model is the best method to estimate the data.

Table 7. Multicollinearity Test Result

	X1	X2	X3	X4	X5	X6
X1	1	0.179226	0.12563	-0.09795	-0.05208	-0.01615
X2	0.17922	1	-0.10270	-0.24910	-0.08608	-0.16528
X3	0.12563	-0.10270	1	0.42371	0.04430	0.05264
X4	-0.09795	-0.24910	0.42371	1	0.18415	0.07022
X5	-0.05208	-0.08608	0.04430	0.18415	1	0.06782
X6	-0.01615	-0.16528	0.05264	0.07022	0.06782	1

Source : EvIEWS 9.0 (Processed Data)

There will be multi-collinearity if the variables value more than 0.9 (Ghozali, 2013). From the table above, the lowest result is between X2 and X4 which is -25% and the highest result is between X3 and X4 which is 42%, there is no variable that have coefficient of correlation more than 0.9. Therefore, there is no multi-collinearity in this research.

Heterosdasticity Test

The assumption of homoscedasticity is central to linear regression models. Homoscedasticity describes a situation in which the error term is the same across all values of

the independent variables. Heteroscedasticity is present when the size of the error term differs across values of an independent variable. The impact of violating the assumption of homoscedasticity is a matter of degree, increasing as heteroscedasticity increases.

Table 8. Fixed Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.538116	7.951842	-0.319186	0.7506
X1	0.093449	1.327054	0.070419	0.9441
X2	0.209025	0.836939	0.249749	0.8036
X3	0.017551	0.049363	0.355554	0.7234
X4	1.034539	0.549413	1.882991	0.0643
X5	-0.066567	0.097091	-0.685610	0.4955
X6	0.000462	0.002556	0.180635	0.8572
R-squared	0.636983	Mean dependent var		8.170206
Adjusted R-squared	0.446831	S.D. dependent var		0.941491
Log likelihood	-82.14093	Hannan-Quinn criter.		2.759576
F-statistic	3.349869	Durbin-Watson stat		1.547154
Prob(F-statistic)	0.000018			

Source: Eviews 9.0 (Processed Data)

CONCLUSION

The result of this study supports the result of studies from of Gustiana (2009), Rosdini (2009), Holder *et al* (1998) and Mollah *et al* (2002). Free cash flow does not significantly influence the dividend payout ratio and is positively related to the dividend payout ratio of agricultural companies that listed in Indonesia Stock Exchange, the greater the free cash flow, the greater the dividend payout ratio and vice versa. Positive free cash flow means that agricultural company is able to use internal funding to fulfill company investment. According to Rosdini (2009) positive free cash flow can also be used as form of cash reserves for dividend distribution.

This study also agrees that the life cycle does not have a significant impact on dividend payout ratio of agricultural companies that listed in Indonesia stock exchange. This result indicated by the magnitude of the probability value that far exceeds 10%. However, in the implementation life cycle has a positive impact on dividend payout ratio proves with the increasing of dividend payout ratio at 0.209 point. This study supports the hypothesis and theory of De Angelo *et al* (2006), Lestari (2012), Denis and Osobov (2008) stated that life cycle have positive impact with dividend payout ratio. In the future, further research should expand more in time period and particular variable that compatible with the characteristics of agricultural companies in Indonesia.

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