



Firm Life Cycle and Cash Policy

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Abstract: This study aims to examine how the stages of the company's life cycle affect the company's cash policy. This study focuses on the stages of the firm's life cycle which includes the cycle stages of introduction, growth, maturity and shakeout against cash policies adopted by the company. This research is considered important because cash policy is influenced by company characteristics, namely the life cycle in which the determination of the company's life cycle is based on cash flow from operating, investing, and financing activities. This study uses panel data regression with a sample of the companies selected are manufacturing companies listed on the Indonesia Stock Exchange with an observation period from 2014-2019. By using a sample of 90 manufacturing companies, the results prove that the company has a large enough cash balance when the company is in the mature and shakeout cycle stages, while the introduction and growth cycle stages do not prove that the cash balance will be greater or less

Keywords: Cash Policy, Life Cycle of the Firm, Panel Data

INTRODUCTION

Cash policy in a company is one of the important decisions in a company where cash policies and management in a company will affect operating, investment and funding decisions. Cash is an important source of internal financing owned by the company in addition to the company's cash flow. In addition, cash flow is generated by the company's operations, which depend on economic conditions. While cash holding is a managerial decision, as well as investment decisions, which means that cash holding is expected to have a greater influence on the company's investment compared to cash flow, especially if the company faces difficulties or has limited access to the company's investment. external financial sources, difficult economic conditions, or both (Alzoubi, 2015).

The absence of a cash source that can be used to fund these investments causes opportunity costs to be borne by the company and vice versa if the company has a large enough amount of cash it causes underinvestment to be borne by the company when the

company does not have profitable investment opportunities. This is because the company does not gain profit or income from idle cash owned by the company.

Several previous studies have examined several reasons underlying cash policies in a company related to cash ownership, how and why companies carry out cash policies including company characteristics (Kim et al., 1998; Schnure, 1998; Opler et al., 1999; Faulkender, 2002; Ferreira and Vilela, 2004; Ozkan and Ozkan, 2004; Almeida et al., 2004; Alzoubi, 2013, 2015, 2019). Subsequent research discusses the relationship between cash policy and agency issues, especially those related to free cash flow (Jensen, 1986).

The existing cash policy in a company is also closely related to the access that can be obtained by the company in obtaining funding sources other than internal funding and the business environment faced by the company (Pinkowitz et al., 2006; Faulkender and Wang, 2006; Dittmar and Mahrt-Smith, 2007; Kalcheva and Lins, 2007; Harford et al., 2008; Fresard and Salva, 2010; Haw et al., 2011; Tong, 2011; Alzoubi, 2013; 2015 and 2016).

Cash policy is inseparable from the investment policy adopted by the firm so that this cash policy can be linked to investment decisions (Fazzari et al., 1988; Hoshi et al., 1991; Kaplan and Zingales, 1997; Alt, 2003; Allayannis and Mozumdar, 2004; Carpenter and Guariglia, 2007; and Alzoubi, 2015), capital structure decisions (Alzoubi, 2013). Some of the explanations above, shows that cash policy is closely related to investment policies and funding policies so this cash policy is very relevant if it is linked to the firm's life cycle theory.

The firm life cycle is a process of company development through several stages which are a linear and sequential process (Bhaid, 2010 in Vidiastuty, 2012). Several previous studies have divided the company's life cycle into several stages. According to Miller & Friesen (1984), the firm's life cycle is divided into five stages, namely birth, growth, maturity, revival, and decline. Meanwhile, according to Gort & Klepper (1982), the firm's life cycle is divided into several stages, namely the introduction, growth, maturity, shake-out, and decline stages. Companies have different characteristics for each stage of the firm life cycle.

Concerning the firm's life cycle, several previous researchers have explained it from the point of view of the company's cash flows, both cash flows from operating, investing, and financing activities (Bulan and Yan, 2009; Dickinson, 2011; Drobetz et al. (2015) and connecting them by taking risks (Habib and Hasan, 2015) where some of these studies have not shown consistent results.

This study re-examines the cash policy carried out by the company in relation to the company's life cycle where this research is based on Alzoubi's research (2019). The results of Alzoubi's research (2019) prove that the mature and decline cycle stages have a negative effect on cash policy. This shows that during the mature and decline cycle stages, companies tend to have fewer cash balances. However, as stated by several previous researchers, cash policy is closely related to the company's cash flow so as stated by Dickinson (2011), the existence of different cash flow patterns in determining the company's life cycle will greatly affect the existing cash policy in a company.

LITERATURE REVIEW

Firm Life Cycle Theory

According to the Big Indonesian Dictionary, the life cycle can be interpreted as a cycle of life from birth to death. The company life cycle is a development of product life cycle theory (Dickinson, 2011). The product life cycle is a model that shows how sales volume can change during the life of a product (Griffin, 2002). Meanwhile, according to Mulyadi (2001), the product life cycle is the time a product is able to meet consumer needs, from birth until the company decides to stop marketing it. Kotler (2002) emphasized four things related to the product life cycle, namely: (1) The product has a limited life, (2) Product sales go through

different stages, each of which presents different challenges, opportunities, and problems for the seller. , (3) Profits rise and fall at different stages during the product life cycle, (4) Products have different marketing, financial, manufacturing, purchasing, and human resource strategies in each stage of the life cycle.

Miller and Friesen (1984) divided the company's life cycle into five stages, namely birth, growth, maturity, revival, and decline. Meanwhile, Gort and Klepper (1982) divided the firm's life cycle into five stages, namely introduction, growth, maturity, shake-out, and decline. Both divide the stages based on differences in environment, strategy, structure, and style of decision-making. Several other researchers have also tried to develop life cycle theory by dividing the life cycle stages through quantitative and qualitative approaches resulting in a different number of company life cycle stages (Meng, 2015).

Previous Research and Hypothesis Formulation

Introduction Life Cycle and Cash Policy

Hasan et al (2016) explained that companies in the introduction stage have several characteristics such as uncertain income streams and cost flows, management focuses on increasing investment, tends to take risks and innovation products. Companies in the introduction stage tend to focus on developing effective strategies to gain profit, market share, and innovation. Therefore, companies at this stage may face high costs of capital due to uncertainty of future cash flows and profits and the possibility of obtaining additional capital is difficult. Dickinson (2011) stated that companies in the introduction stage tend to have negative operating cash flow, which means that the company cannot yet generate earnings.

Firms that have negative cash flow from activities, which means that companies in the introduction stage tend to make sizable investments where to meet these investment needs the company will use external funding sources so that the cash flow from the company's funding activities is positive so that the company does not have cash available for cash. fund the investment. The first hypothesis put forward is:

H1: Firm's in the introduction stage have a fairly low cash balance compared to other stages of the life cycle

Growth Life Cycle and Cash Policy

Hasan et al (2016) provide an explanation that companies in the growth stage have characteristics that tend to maximize profits, invest heavily, and have positive operating cash flow. At this stage, the company performs better transparency, increases supervision, and control by external resource providers.

When the company enters the growth stage, the firm will use all available resources both from internal and external funds to invest in available projects, and therefore the company has sufficient cash availability to fund all projects to be invested. The second hypothesis put forward is:

H2: Firms in the growth stage have larger cash balances than other life cycle stages

Mature Life Cycle and Cash Policy

Firms in the mature stage generally produce a shift towards maximum efficiency, reduce uncertainty and reduce investment spending compared to the previous stage. In addition, a larger distribution of capital to shareholders and an improved corporate governance structure are also characteristics of companies at the mature stage. (Hasan et al, 2016).

As companies enter the maturity stage, the scope of financing required becomes larger, and holding large amounts of cash will be associated with high opportunity costs, because at

this stage companies will be able to access financial markets at a reasonable cost, which means they will do more rely on external sources of financing. The hypothesis put forward is:
H3: Firms in the maturity stage have larger cash balances than other life cycle stages

Shake-Out Life Cycle and Cash Policy

Hasan et al (2016) stated that at the shake-out stage there was a decrease in the rate of growth, investment, efficiency, and innovation. Firms tend to make reductions in operating cash flow, increasing the uncertainty related to future cash flows, profits, innovation, investment, and profit margins.

In the shake-out life cycle stage as described by Dickinson, 2011; Habib and Hasan, 2015), the firm's cash flow pattern has several possibilities, namely (1) negative cash flow from operating, investing, and financing activities. This shows that the company does not have sufficient cash balances to fund operations and investments, (2) cash flows from operating, investing, and financing activities are positive which means that the company has substantial sources of internal and external funding when the company is faced with no choice. investment and (3) positive cash flows from operating and investing activities with negative cash flows from financing activities. This shows that in this cash flow pattern, the company has large enough cash to be retained by the company which will later be used to pay debts or distribute capital to owners. This is because the company does not have a profitable investment alternative. From this explanation, the hypothesis proposed is:

H4: Firms in the shakeout stage have larger cash balances than other life cycle stages

RESEARCH

Variable Operational Definition and Variable Measurement

a) Dependent Variable

The dependent variable is the cash ratio (CASH). The cash ratio proxy in this study uses proxies from several previous studies (Gort & Klepper, 1982; Opler et al, 1999; Ozkan & Ozkan, 2004; Almeida et al, 2004; Ferreira and Vilela, 2004; Alzoubi, 2013). The cash ratio in this study is measured by dividing the total cash and cash equivalents by the total assets owned by the firm.

b) Independent variable.

- Introduction Stage (Intro). Is a dummy variable. The company is classified into the introduction stage and is given a value of 1 if the cash flows from operating activities are negative and, cash flows from investing activities are negative, cash flows from financing activities are positive, and given a score of 0 if it does not meet these criteria.
- Stage of Growth (Growth). Is a dummy variable. The company is classified into the growth stage and is given a value of 1, if the cash flow from operating activities is positive and financing is positive and the cash flow from investing activities is negative and is given a score of 0 if it does not meet these criteria.
- Maturity Stage (Mature). Is a dummy variable. Companies classified into the maturity stage are given a value of 1 if cash flows from operating activities are positive, cash flows from investing activities and cash flows from financing activities are negative and given a score of 0 if they do not meet these criteria.
- Shakeout stage (Shake): This is a dummy variable. Companies classified into the shakeout stage are given a value of 1 with 3 criteria, namely (1) if the operating, investing, and financing cash flows are negative, (2) if the operating, investing, and financing cash flows are positive, (3) if the operating and investing cash flows are

positive with negative funding cash flow and if it does not meet these 3 criteria it is given a score of 0.

Table 1. Cash Flow Patterns in Determining the Firm's Life Cycle

Cash Flow	Intro	Grow	Mat	Shake	shake	shake
Operating (FCO)	-	+	+	-	+	+
Investing (FCI)	-	-	-	-	+	+
Financing (FCF)	+	+	-	-	+	-

c) Control Variables

- Firm size (SIZE): This proxy is measured using the natural logarithm of a firm's total assets (Opler et al., 1999; Ozkan & Ozkan, 2004; Almeida et al., 2004; Alzoubi, 2013, 2019).
- Profitability (PROF). This proxy is the rate of return on the return on company assets and is measured by dividing net profit after tax by total company assets (Almeida et al., 2004 Alzoubi, 2013, 2019).
- Leverage (LEV): This proxy measures the level of the company's ability to pay debts with the assets owned by the company. This proxy is the quotient between total debt and total assets (Opler et al., 1999; Ferreira & Vilela, 2004; Ozkan & Ozkan, 2004 Alzoubi, 2013, 2019).
- Dividends (DIV). This proxy is measured by dividing total cash dividends by total assets (Opler et al., 1999; Alzoubi, 2013, 2019).

Hypothesis Testing Model

Testing the hypothesis in this study uses panel data regression using the Eviews 9 application. The regression model used to test the hypothesis (Alzoubi, 2019) is as follows:

$$\text{Cash}_{it} = \beta_1 \text{Intro}_{it} + \beta_2 \text{Growth}_{it} + \beta_3 \text{Mature}_{it} + \beta_4 \text{Shakeout}_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Profit}_{it} + \beta_7 \text{LEV}_{it} + \beta_8 \text{DIV}_{it} + \varepsilon_{it}$$

RESULT AND DISCUSSION

Research Results

Descriptive Statistical Analysis

Descriptive statistics are presented in table 2 below.

Table 2. Descriptive Statistics

Variabel	Minimum	Maksimum	Mean	Std. Deviasi
CASH	0.000388	0.723993	0.108011	0.122316
INTRO	0	1	0.131481	0.338240
Frequency	(469)	(71)		
Percent	(86.9)	(13.1)		
GROWTH	0	1	0.203704	0.403125
Frequency	(430)	(110)		
Percent	(79.6)	(20.4)		
MATURE	0	1	0.529630	0.499584
Frequency	(254)	(286)		
Percent	(47.0)	(53.0)		
SHAKEOUT	0	1	0.112963	0.316841
Frequency	(479)	(61)		
Percent	(88.7)	(11.3)		
SIZE	0.035917	33.49453	28.13515	3.416421
PROF	-2.640992	27.96134	0.353489	2.917815
LEV	0.009745	4.975900	0.512230	0.458920

DIV	0.000000	0.998603	0.037961	0.102140
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Source: Processed Secondary Data

Of the 90 companies sampled in this study, a total of 540 observations were obtained, wherein the firms would then be classified as the firm's life cycle based on cash flow patterns from operating, investing, and financing activities (Gort & Klepper, 1982' Dickinson, 2011, Alzoubi, 2013, 2019). From the classification and grouping of the firm's life cycle, 71 (13.1%) observations of firms are classified as firms that are in the induction stage, 110 (20.4%) observations of companies are classified as companies that are in the growth stage, 286 (53%) Observation firms are classified as firms that are in the mature stage and as many as 61 (11.3%) observation firms are classified as firms that are in the shakeout stage.

The cash variable has a maximum value of 0.723993 which means that out of one hundred percent of the firm's assets, 72.3993 percent is cash. The highest company profitability ratio is 27.96134 which means the company can generate a net profit of 27.96134 times the total assets owned by the company. The leverage ratio has the highest value of 4.9759 which means that there are companies that have the highest debt level of 4.9759 times their total assets.

Hypothesis examination

Modeling using panel data regression techniques can use three alternative approaches to processing methods. These approaches are (1) Common-Constant Method (The Pooled OLS Method), (2) the Fixed Effect Method (FEM), and (3) Random Effect Method (REM). The following calculations from the F-stat test (Pooled Least Square vs Fixed Effect) obtained the following results:

$$F = ((R2_{ur} - R2_r)/m) / ((1 - R2_{ur})/(n-k))$$

$$F = ((0.828614 - 0.130783)/90) / ((1 - 0.828614)/(290 - 8)) F = 0,0077/0,000607 = 12,6853$$

F-count value = 12.6853 and F-table value (5%) = 1.98, F-count > F-table

Based on the tests carried out above, the method chosen is the fixed effects method. However, this is not yet the final result of the data processing method because it has not been tested statistically. So it is necessary to see the results of other methods, namely the Random Effect method and its statistical testing. From the fixed effect test of this study it can be seen that the t-stat test does not contain two variables that show significance ($\alpha = 5\%$) and the Durbin - Watson stat value of 1.443897 gives a number that is far from the range of number 2. This is also not yet able to give certainty about which method should be used. Then the next step is testing the Hausman Test.

The Hausman test aims to compare the fixed effect and random effect methods. The results of testing using this test to find out which method should be chosen. The following is the output of the test using the Hausman Test.

Table 3. Model Test Results Using the Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.697539	8	0.0334

In the calculations that have been done, it can be seen that the probability value in the random effect cross-section test shows a value of 0.1570483, which means it is not significant with a significance level of 95% ($\alpha = 5\%$). Based on the results of the Hausman Test, the preferred method used in this research is the Fixed Effect method.

The results of hypothesis testing are presented in table 4 below.

Table 4. Hypothesis Testing Results

Variabel	Coefficient	t-Statistic	Prob.
Intro	-0.020237	-0.793153	0.4280
Growth	0.032308	1.292640	0.1967
Mature	0.044165	1.845725	0.0655
Shakeout	0.076062	2.983563	0.0030
Size	0.003720	4.440356	0.0000
Prof	-0.002336	-1.001744	0.3169
Lev	-0.078208	-7.229442	0.0000
Div	0.195381	3.161085	0.0017
R-squared	0.162805		
Adjusted R-squared	0.151789		
F-statistic	22.03067		
Prob(F-statistic)	0.000000		

Source: Processed Secondary Data

Discussion

Introduction Life Cycle and Cash Policy

The test results prove that at the introduction stage, the cash policy becomes irrelevant. From the direction of the negative coefficient, the test results prove that at the stage of the introduction life cycle, the company does not have sufficient cash balances or keeps sufficient cash to fund its investment. This is possible because, at the stage of the introduction life cycle, the firm is still faced with high capital costs and the uncertainty faced by the company is quite high. From the test results, it was concluded that the first hypothesis was rejected. The results of this study contradict Alzoubi's research (2019) which found a negative and significant effect of the introduction life cycle on cash holding.

Growth Life Cycle and Cash Policy

The results of testing the growth life cycle on cash policy show a positive direction and are not significant. This shows that the stages of the growth life cycle are irrelevant in explaining cash policy. This can be caused by several factors where on the one hand the company has sufficient cash availability and generates positive operating cash flow but on the other hand the company is faced with efforts to maximize profits with various profitable investment projects. From the test results, it was concluded that the second hypothesis was rejected. These results are consistent with findings (Alzoubi, 2019) which prove that the firm's life cycle at the mature stage does not affect cash holding.

Mature Life Cycle and Cash Policy

From the results of testing the hypothesis for the stages of the mature life cycle, it shows a positive effect with a significance level of 10%. This shows that at the mature life cycle stage, firms tend to prefer to have larger cash. This is due to the mature life cycle, firms tend to have experienced a decrease in investment compared to the previous cycle stages so firms tend to have more cash. The need for more cash in firms with a mature life cycle is caused by a greater need for cash to be distributed to shareholders, one of which is the payment of dividends and for use in paying debts (Hasan et al, 2016). The results of this study are also consistent with the explanation given by (Dickinson, 2011; Habib and Hasan, 2015) in the firm life cycle theory which states that at the mature life cycle stage, companies have positive operating cash flows and negative investment and financing cash flows. which means that the firm has a fairly good ability to generate profits from operations that are used to fund investing and financing activities. From the test results, it can be concluded that the third hypothesis is accepted.

Shake-Out Life Cycle and Cash Policy

At the shake-out life cycle stage as described by (Dickinson, 2011; Habib and Hasan, 2015), the pattern of the company's cash flows has several possibilities, namely (1) negative cash flows from operating, investing, and financing activities. This shows that the company does not have sufficient cash balances to fund operations and investments, (2) cash flows from operating, investing, and financing activities are positive which means that the company has substantial sources of internal and external funding when the company is faced with no choice. investment and (3) positive cash flows from operating and investing activities with negative cash flows from financing activities. This shows that in this cash flow pattern, the firm has large enough cash to be retained by the company which will later be used to pay debts or distribute capital to owners. This is because the company does not have a profitable investment alternative. The test results show that at the stage of the shakeout cycle, the company has more cash compared to other life cycles so the fourth hypothesis is accepted.

CONCLUSION AND SUGGESTIONS

Conclusion

The conclusion that can be drawn from this study is that the results show that not all stages of the firm's life cycle have a significant effect on cash, although there is an inverted curve pattern between the firm's life cycle and cash policy. In the mature and decline life cycle stages that affect the company's cash policy. This lack of effect on the entire life cycle of the company can be due to the division of the life cycle in this study into only three stages (introduction, growth, mature, shakeout) and does not include a decline cycle. This is due to the insufficient number of observations obtained to be able to classify a company into a decline cycle.

Suggestions

In this examination, several suggestions are expected to reduce the limitations of the study, namely (1) future research is expected to use a longer observation period so that research results are better, (2) the research sample is not only manufacturing companies but also adds other non-financial companies so that this research can be generalized, (3) further research needs to conduct research by dividing the company's life cycle into five stages, namely introduction, growth, mature, shakeout and decline so that there is a possibility that there will be differences in results.

Suggestions for future research (1) are expected to use a longer observation period to determine whether there is an influence of the cash policy life cycle on public companies listed on the Indonesian Stock Exchange, (2) expand the research sample including using non-financial companies so that the results of this study can be generalized, (3) further research may use the five stages of the company's life cycle so as to allow for different results from this research.

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