

Conference Paper

The Association Between Cash Flow and Leverage for Firm Life Cycle

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Abstract

The study examines the effect of cash flow and leverage in firm life cycle as the cash flow from operating, investing, and financing are different in each stage. The method used in this study is purposive sampling in which 101 manufacturing firms are selected as the sample. The unit of analysis is 606 observations. Chi-square test is used to analyze the data. The finding indicates that cash flow from operation is not significant based on firm life cycle, while cash flow from investment and financing as well as debt to equity ratio are found to be significant.

Keywords: cash flow, leverage, firm life cycle

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Received: 29 August 2018

Accepted: 18 September 2018

Published: 11 November 2018

Publishing services provided by
Knowledge E

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Selection and Peer-review under the responsibility of the ICOI-2018 Conference Committee.

1. Introduction

Cash flow information is useful to know the source and use of cash. The use of cash will change as the company is at different levels of the firm life cycle [10]. The life cycle of a company are differentiated into introduction, growth, maturity and decline [1, 2, 5, 6] and differentiated into establishment or start-up, expansion, maturity and declining [3, 10].

Based on research by Black (1998) and Qodriyah (2012) in the start-up cycle, a company is characterized by low sales volume, loss, low liquidity and high debt and the company does not pay dividends. The growth stage is marked by the growth of sales, profit begins to increase, level of liquidity is high and there is increasing debt. The maturity stage is the maturity stage marked by sales peak in this condition the company must have a good strategy because the level of competition will be more stringent. At this stage, the company has a high cash flow and a relatively small debt because it has internal funding sources of retained earnings. If it has a good strategy, the company will be able to survive in the maturity stage and improve the business better, but, if not, it will go to the decline stage. The declining phase is marked by decreasing sales number and high cost so that profit earned becomes smaller and ultimately there are only small dividends.

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Statements of cash flows are used to evaluate cash sources and cash usage related to operations, investments and financing. Cash flow from operations shows the information content associated with the company's operating activities and shows the company's internal operational capabilities. Cash flows from investments reflect cash receipts and disbursements used to generate future income while operating cash flows reflect cash receipts related to funding sources and other capital instruments. Based on a study by Lightstone et al. (2014) the classification of operating cash flows compared to investment cash flows and financing for non-financial companies in Canada explained that the presentation of operating cash flows tends to be made as well as possible in order to keep cash flow operating positive. There are different behaviors for the classification of investment cash flows and funding.

Research by Black (1998) examines the comparison between earnings and cash flow based on the life cycle of a company. Findings by Black (1998) and Kighir et al. (2015) show that profit becomes more important only to firms in the maturity cycle whereas other cycles of cash flow become more dominant. This study refers to Gumanti & Puspitasari (2008) and Hasan et al. (2015) by looking at the relevance of the company's life cycle. Hasan et al. (2015) explained the impact of equity cost capital based on the life cycle of firms in Australia over the period 1990-2012 and found empirical evidence that the cost of equity capital over the life cycle varies. The findings are quite important from this study in showing that the start-up stage of a company has a high equity capital cost and at the decline stage, the cost of equity capital is lower, while the maturity stage found lower equity capital and decline stages found high equity capital. The purpose of this study is to provide empirical evidence from manufacturing companies in Indonesia by grouping based on the life cycle of the company, especially the linkage of cash flow and changes in leverage.

2. Literature Review

Cash flow is one of a company's financial performance assessments. Cash flows based on the Financial Accounting Standards are used to evaluate the changes in the net assets of a company. The cash flow statement describes the source and use of cash as explained by Qodriyah (2012). Dickinson (2011) explains that the proxy for cash flow pattern is associated with market inefficiency related to stock market performance. In the maturity stage, the cash flow proxy receives a positive return on performance in

the previous year so as to give a signal to the investor. This study refers to the variables used in Dickinson (2011) that cash flow consists of cash derived from operating activities, cash from investments and cash from financing.

Cash flows from operating activities describe cash inflows and cash outflows that are sourced from the company's main activities of product sales, interest received, interest payments and tax payments. The statements of cash flows from operating activities can be presented by direct and indirect methods [8]. In the start-up phase of cash flows from negative operating activities, growth and maturity are positive and decline cash flow operations are negative [2]. At the start-up stage negative operating cash flow indicates a high leverage level [8] while, at the growth and maturity stage, low leverage is found.

Cash flows from investment activities represent inflows and outflows that occur within the accounting period and pay attention to all investments made by the firm. In particular, this cash flow refers to the cash received or paid for the firm's strategy in long-term investments of fixed assets. Dickinson (2011) found that start-up, growth and maturity life cycles having cash flow from investment are negative, whereas decline having cash flow from investment is positive. In addition Kousenidis (2006) explains that, at start-up, growth and maturity, a company has high leverage, while, in the decline stage, the company has low leverage. This is possible because cash flow from investments reflects more investment decisions on long-term investments. The downturn in the trend toward low investment is because the company's desire to add debt is small.

Cash flows from financing activities are predictive of cash flows for the foreseeable future. Cash inflows are sourced from receipts from new share issues, dividend payouts to shareholders, receipts from issuance of new debt capital such as bonds, loans, money orders and mortgages. Cash payments are used for loan repayment and cash payments by the lessee to reduce the balance of the obligations relating to the lease. Dickinson (2011) shows that cash flow from financing activities is positive for all life cycles, but this research explains that, in the decline stage, it can become negative. Hasan et al. (2015) found that the cost of capital varied across each firm's life cycle. Start-up and decline stages found the company to have high capital cost, while the growth and maturity stage found the opposite condition. Based on the aforementioned description, the research hypotheses are:

Ho = There is no significant relationship between CFFO, CFFI, CFFF and Leverage based on firm life cycle.

H1 = There is a significant relationship between CFFO, CFFI, CFFF and Leverage based on firm life cycle.

3. Methods

The unit of research analysis is a companies selected using purposive sampling method (101 manufacturing companies listed on the Indonesia Stock Exchange) from 2011-2016. The type of data used are secondary data sourced from the Indonesian Capital Market Directory (ICMD). The variables observed were cash flow and leverage based on company life cycle.

The analysis method used Chi-square test to know the relationship between CFFO, CFFI and CFFF and leverage based on company life cycle. Grouping as Black (1998) and Dickinson (2011), the life cycle is divided into four stages: start-up, expansion, maturity and decline. The first stage of analysis performed is to group the sample in the life cycle stage of the company. This stage refers to research by [1-3]. The following are the criteria:

TABLE 1: Criteria of stage in firm life cycle.

Stage	Average sales growth during 2012–2016 (%)
1. Establishment or start-up	> 20
2. Expansion	10–20
3. Maturity	1–10
4. Declining	< 1%

Source: Gumanti & Puspitasari (2008).

Based on the criteria at each stage, the sales growth is calculated by comparing the net sales of the current year to the net sales of the previous year, then using these as a determinant of the sample of the company entered in that stage. After the sales growth is calculated then the sample according to the life cycle stages are shown in the following table:

TABLE 2: Sample based on firm life cycle.

Stage	Number of companies	Number of observations
1. Establishment or start-up	12	72
2. Expansion	28	168
3. Maturity	38	228
4. Declining	23	138
TOTAL	101	606

4. Results and Discussion

Descriptive statistics present data conditions based on the highest, lowest, average and standard deviation values. Table 3 presents descriptions of the overall research variables.

TABLE 3: Descriptive statistics (N = 606).

Variable	Min.	Max.	Mean	Std.
CFFO (IDR)	-2245312168	12036625370000	44641756020	536129889000
CFFI (IDR)	-1449479596	223681319800	-42553365300	145628567400
CFFF (IDR)	-4117430229100	3614215081000	-7984810283000	16989270250000
DER (%)	-225	124.00	1.15	10.97

Source: Processed from cash flow statement, 2018.

Based on Table 3, the mean for all the highest observations of IDR 44 million with a standard deviation of IDR 5.4 billion indicates that the distribution of data is quite extreme. The gap is quite high because the distribution of CFFO sample research is too high and there is too much, so that the data distribution becomes for enough. CFFO is shown to be a positive average. This reflects that the 101 companies in the sample study have cash flow derived from higher operating cash inflow activities compared to cash outflows. Description of cash flows from investments, on average, is negative IDR 42 million. CFFI negatively reflects that manufacturing companies in Indonesia tend to make investment decisions. Referring to the company's balance sheet, other types of investments made are long-term investments, also called investment in fixed assets. Cash flows from financing activities indicate that the negative minimum value is IDR 4.1 billion and the highest value is IDR 3.6 billion. The average CFFF value of Rp8 billion indicates that funding activities are more likely to use internal funds such as retained earnings and depreciation. The value of DER ratio based on Table 3 indicates that the average of research samples mostly uses internal funding. A minimum value of -225% indicates that some sample research firms earn a loss so that it erodes equities. The results of testing with crosstab performed on each of the variables CFFO, CFFI, CFFF and DER based on company life cycle are shown in Table 4:

The results of cross-tabulation testing of each variable with the life cycle of the company are presented in Table 4. The highest CFFO value of 109 observations lies in the maturity stage, while the lowest is at the start-up stage. This condition reflects that CFFO at maturity stage is better considering the characteristic of the company in the maturity group is increased sales so as to cover a certain amount of cost. CFFO is sourced from more preferred sales revenue so that the company's operating results are

TABLE 4: Cross-tabulation of variables.

Variable	Category	Stage				Total
		Start-up	Expansion	Maturity	Decline	
CFFO	LOW	37	83	119	81	320
	HIGH	35	85	109	57	286
	TOTAL	72	168	228	138	606
CFFI	LOW	61	163	213	122	559
	HIGH	11	5	15	16	47
	TOTAL	72	168	228	138	606
CFFF	LOW	40	125	164	100	429
	HIGH	32	43	64	38	177
	TOTAL	72	168	228	138	606
DER	LOW	16	47	88	40	191
	HIGH	56	121	140	98	415
	TOTAL	72	168	228	138	606

Source: Processed from data, 2018.

also higher. The low CFFI value in the investment is also in the maturity stage, the long-term investments. Cash flow of funding is also more in maturity in 164 observations as well as debt ratio, in this case measured by DER. The high debt ratio of 140 observations is at the maturity stage. The hypothesis by using Chi-square. Test results are shown in Table 5:

TABLE 5: Hasil Uji Statistik: Pearson Chi-Square.

Variable	Value	Sig $\alpha.05$	Decision
CFFO	2.793	0.425	H1 Rejected
CFFI	14.342	0.002	H1 Accepted
CFFF	9.474	0.024	H1 Accepted
DER	9.562	0.023	H1 Accepted

Source: Processed from data, 2018.

The result of hypothesis testing with Chi-square found that there is no CFFO relationship based on company life cycle with significance level far above 0.05, so as to reject H1 and accept Ho. This result reflects that the magnitude of CFFO is not related to the life cycle of the company, meaning the company is in whatever stage but CFFO is not proven to have an association. Other variables of CFFI, CFFF and DER were found to have a significant association based on the life cycle of the firm, thus supporting Ho.

Financial decisions in financial management concepts include three things: investment, funding and dividends [11]. Financial decisions are directed to increase the value

of the company. Companies which go public can be reviewed from the life cycle of the company, which includes growth, expansion, maturity and decline. Each company's life cycle is characterized by several criteria. One of the criteria used is cash flow information. Referring to the research findings in Table 5 shows the relationship of cash flow and leverage based on the life cycle of the company.

CFFO is a reflection of cash inflows and cash outflows derived from the company's operating activities. Kousenidis (2006) explains that operating cash sources are cash derived from the sale of goods and services, cash derived from dividend and interest and other sources of cash that are not contained in the classification of investment and funding. In addition to cash entry, also determined is cash out of payment to suppliers, employee salary payments, tax payments and interest payments. The findings is that CFFO has no significant relationship for all life cycles. The findings of this study are similar to Kighir et al. (2015) who used the object of research in non-financial companies in Bursa Malaysia. Research by Black (1998) is quite different and found significant results on p -value 0.01. The results of this study indeed obtained results that are not significant because they are far above 0.05. There is no CFFO association based on company life cycle indicating that operating activity becomes a magnitude for financial decisions within the company regardless of life cycle.

Kousenidis (2006) also discusses CFFI and CFFF. Cash in CFFI activities is cash received from the collection of loans, securities sales, such as bonds and stocks, and cash received from the sale of fixed assets, while cash out is to repay loans, investment in securities, and acquire fixed assets. CFFF is the source and use of cash related to financing activities. Cash sources include cash from companies issuing shares, warrants and other derivatives, cash from short-term debt issuance and loans from creditors, cash inflows are also derived from the sale of long-term debt such as bonds. Cash out is used to pay dividends, pay the issuance of shares and pay interest on the loan at the bank. The research findings in Table 5 show that CFFI and CFFF have significant relationship based on company life cycle. The research findings by Black (1998) for CFFI are not significant whereas CFFF has a significant relationship.

The debt ratio as measured by DER shows how much debt is based on the life cycle of the company. Referring to Table 5, there is an association between DERs for all life cycles. Hasan et al. (2015) found that there is a high cost of equity for the start-up and decline stages while the expansion and maturity stages found a U-shaped pattern. Leverage as a ratio of debt and equity reflects external sources of funds for the company. The high DER ratio reflects the cash outflow of CFFI and CFFF activities will

be even greater, so that the role of financial managers in making financial decisions needs to be more precisely tailored to the life cycle of the company.

5. Conclusion

This research on the relationship of cash flow and leverage based on company life cycle has some important notes. Several conclusions from the study show that there is no CFFO relationship for all life cycles. Other findings are that CFFI, CFFF and DER have a significant relationship based on the life cycle of the company.

Acknowledgement

The authors would like to express their gratitude to the students who assisted them in the collection of data and inputs especially for Tuti Awaliyah and Regina Novelia. Hopefully, the help given gets blessing and the result of this article is useful for the development of financial management.

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