MANUFACTURING CORPORATE LIFE CYCLE AND DISCRETIONARY ACCRUALS WITH PIECEWISE LINEAR MODEL

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Abstract

This study aimed to investigate the effect of life cycle at the critical point of the growth mature and mature-stagnant stages of discretionary accruals and the effect of company age on discretionary accruals. In addition, this study also examines the differences of discretionary accruals in growth-mature stage and mature-stagnant stage. The data observation in this study is financial statement data of 341 manufacturing companies listed on Indonesia Stock Exchange in 2015-2017. The dependent variable is discretionary accruals that focuses on the piecewise linear model and the independent variables are the life cycle and the company age. Life cycle grouped into two critical point stages, namely the growth-mature stage and the mature-stagnant stage. Multiple linear regression is used to test hypotheses. The results show that there is a negative effect on growth-mature and mature stagnant in critical points of the discretionary accruals and there is a positive effect on the company age on discretionary accruals. Moreover, this study also proves that there are differences in discretionary accruals at growth-mature stage and mature-stagnant stage.

Keywords: company life cycle, discretionary accruals, growth-mature, mature-stagnant, piecewise linear model.

Abstrak

Penelitian ini bertujuan untuk menguji pengaruh siklus hidup pada titik kritis dari tahap growth-mature dan tahap mature-stagnant dari discretionary accruals dan pengaruh umur perusahaan pada discretionary accruals. Sebagai tambahan, penelitian ini juga menguji perbedaan discretionary accruals pada tahap growth-mature dan tahap mature-stagnant. Penelitian ini menggunakan data laporan keuangan dari 341 perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia dari tahun 2015-2017. Variabel dependen dalam penelitian ini adalah discretionary accruals yang menggunakan piecewise linear model dan variabel independennya adalah siklus hidup dan umur perusahaan. Siklus hidup terbagi menjadi dua tahap titik kritis yaitu tahap growth-mature dan tahap mature-stagnant. Model regresi berganda digunakan untuk pengujian hipotesis. Hasil penelitian ini menunjukkan bahwa terdapat pengaruh negatif pada titik kritis discretionary accruals di tahap growth-mature dan tahap mature stagnant dan terdapat pengaruh positif dari umur perusahaan terhadap discretionary accruals. Penelitian ini juga membuktikan bahwa ada perbedaan titik kritis pada tahap growth-mature dan tahap mature-stagnant.

Kata kunci*: siklus hidup perusahaan; discretionary accruals, growth-mature, mature-stagnant, piecewise linear model.*

INTRODUCTION

Earning management is a management intervention to the process of financial reporting with the intention for individual purpose. Similar with the environmental ecosystem, a company also has a life cycle, because the company experiences changes from year to year. Firms are evolving entities, and the path and rate of their evolution are jointly determined by internal factors (such as business strategies, financial resources, and managerial capabilities) and external factors (e.g., changes in the competitive environment and macroeconomic conditions). Corporate life cycle consists of distinct and identifyable phases resulting from changes in these fundamental factors, which arise from the strategic activities undertaken by a firm. Therefore, corporate life cycle is the combined result of business strategies and allocation of resources, comprehend-sively reflecting a firm's innate factors (Chen, Yang, & Huang, 2010). The five stages of corporate life cycle are introductory, growth, maturity, shakeout, and decline (Gort & Klepper, 1982). The characteristics of the introductory stage and the growth stage are where the industrial growth rate starts to raise and continues to grow rapidly, while the mature stage of growth starts to slow down, this growth will be negative if it reaches the decline stage. The company's position at one stage of the life cycle can determine the level of cruciality and whether or not the company needs to perform earnings management in a discretionary accruals. The each stage of company's life cycle greatly influences financial reporting, which then results in earnings management proxied by discretionnary accruals.

Some research on corporate life cycle often associated it with earnings management. Corporate life cycle divided into three stages such as, the growth stage, the mature stage, and the stagnant stage (Anthony & Ramesh, 1992). According to Black (1998), the relevance of earnings value compared to cash flow at each stage of the corporate life cycle using the methodology used by Anthony & Ramesh (1992). The previous study examined the differences in earnings management behaviour based on corporate life cycle and company size (Hastuti & Hutama, 2010). The differences in earnings management behaviour seen from the size of earnings management. Hastuti (2010b) examined the differences in earnings management seen from the selection of accounting policies that increase profits or decrease profits. There are two critical points of earnings management such as the growth-mature critical point and the mature-stagnant point. Hastuti (2011) states that at the growth-mature stage the company carries out earnings management by income decreasing. In the mature-stagnant stage, the company conducts earnings management by increasing earnings and corporate life cycle critical point occurred. In this research, we develop the previous research by analysing the effect of the company's life cycle critical point and the company's age on earnings management as measured by discretionary accruals using the Piecewise Linear Model.

Moreover, we analyse the differences of discretionary accrual at the critical point of the growth-mature and mature-stagnant stages. Companies that are in the growth-mature stage usually have high levels of sales generating the high earnings. High earnings cause the taxes that must be paid become high. Hence, to avoid it, the company conducts earnings management by decreasing the income. Income decreasing is indicated by a low discretionary accrual value (Atwood, et.al., 2010). The mature-stagnant stage companies are beginning to experience declining their sales growth rates, resulting in lower earnings due to the competition with new comers which more innovative from the same industry. At this stage, there is an effort to increasing the income, so the company try to generate the investor trust. Income increasing is indicated by a high discretionary accrual value.

Managers affect the analyst forecasting by sharing ways to manage earnings to be accurate with forecasting (Degeorge et al., 1999). The previous research analyse the differences of discretionary accrual based on the critical point, whereas in this research we measure the discretionary accruals using a Piecewise Linear Model which the perspective of earnings management is based on the critical point and age of the company. We also examine differences in discretionary accrual stages of growth-mature stage and mature-stagnant stage.

LITERATURE REVIEW

Life cycle is a figure of the company's history from its inception until the company is at its final point. Companies have a life cycle (product life cycle) as well as products (Schori & Garee, 1998). There are four stages of life cycle, namely introduction, growth, mature and decline. The first stage is introduction. The main characteristic of this stage is that the business is still small. Market needs that are not yet understood lead to rapid failure of companies in this stage. Sales begin to grow if the company is successful. The second stage is growth. The main characteristic of this stage is that market needs are being met and there is relatively rapid growth. The third stage is mature. The main characteristic of this stage is that managers start to become professional. At this stage the rest of the company's life is not too long and it goes bankrupt, but there are also companies that survive in the long run if the company makes many changes and continues to innovate in accordance with technological and information developments. The last stage is the decline stage. At this stage, the company experiences a continuous decline and as a result this company will cease its activities and disappear. After the mature phase, not all companies are in the decline stage but in stagnant position. The stagnant position is that the company experiences a low growth

rate, capital is not issued in a large scale and profits do not decrease dramatically (Bo et al., 2016). After knowing the pattern of sales growth so it can be group into each life cycle by following the criteria such as: growth-mature if it has less than average sales and mature-stagnant if greater than average sales. The life cycle of a company is considered as a strategic value for the company, so managers must be able to determine at what stage the company's position is headed (Sari, 2012).

In an agency relationship, there is a contract between agent and principal (Jensen & Meckling, 1976). The agents are managers that manage the company while the principal is the owner of the company. Managers are trusted to manage the company with the aim of optimizing profits, then the managers will get compensation according to the contract. The better the manager's performance, the higher the compensation that will be received. As the parties that manages the company, managers has more information than the owner. This results in asymmetric information. Asymmetric information can be used by managers to take actions that will make their performance looks good, even though they can cause owner losses in the coming period. Both parties both want to increase their utility so that agents do not always act in the interests of the principal. The agency problem has attracted enormous attention from researchers in the field of financial accounting (Fuad, 2005). The agency problem arises because of a conflict of interest between shareholders and managers, because there is no maximum utility meeting between them. As agents, managers are morally responsible for optimizing the profits of the owners (principal), but on the other hand managers also have an interest in maximizing their welfare. Moreover, there is a high probability that agents do not always act in the best interests of the principal (Jensen & Meckling, 1976). Managers know more about internal information and prospects of the company in the future than the owner (shareholder).

Therefore, as managers, they obliges to give a signal about the condition of the company to the owner. The signal given can be done through the disclosure of accounting information such as financial statements. However, sometimes the information that have been submitted and received but not in accordance with the actual condition of the company. This condition is known as asymmetric information. Asymmetric information occurs because managers know the information more than the other parties (owners or shareholders). Asymmetric information between managers (agents) and owner (principal) give managers opportunity to act opportunistically, that is, to gain personal benefits. In terms of financial reporting, managers can conduct earnings management to mislead the owner (shareholders) regarding the company's economic performance.

Agency theory uses three assumptions of human nature, namely: self-interest, bounded rationality, and risk adverse. In this condition raises the possibility of efforts to make earnings management. Earnings management is the choice of accounting policies by managers for various specific purposes (Scott, 2003). Earnings management is management's intervention in the process of external financial reporting with various objectives and reduces the credibility of financial statements. Earnings management can interfere with users of financial statements who have believed that the financial statements are pure even though they have been engineered. Cassell et al. (2015) argues that the level of accrual earnings management is lower with transparent disclosures than companies without transparent disclosures.

Accounting information is useful for investors and creditors (as well as other parties with an interest in the company) to assess a company and to make investment decisions (Bamahros et al., 2015). Invalid accounting information can cause investors to make wrong decisions and misplaced funds. Disclosure of accounting information is useful in detecting earnings management (Blanco et al., 2014). The problem of earnings management is very attractive to researchers in America, especially the Enron case. Researchers are busy thinking about what influences managers to conduct earnings management and how investors' behaviours towards earnings management. Regulators are also busy thinking about how they should deal with earnings management issues (Ketz, 1999).

Earnings management can be done by management when the company is still growing, even when corporate profits fall near zero (Hayn, 1995). Profits begin to be generated when the company is at a growth stage. A feature of this stage is that diversification of closely related product lines begins, but the management structure is still relatively weak. Companies whose management structures are weak and have large accruals so that there are large differrences between earnings and cash flow are the characteristics of companies that conduct earnings management (Dechow & Skinner, 2000). Companies with a low management structure that have an audit committee dominated by insiders, the CEO is the founder of the company and the chair of board, usually has an incentive to manipulate earnings management (Dechow et al. 1996; Beasley, 1996). Companies that have large and positive discretionary accruals are companies that have a downward trend in earnings over the next three years because there are reversals of accounting accruals, which have the largest accruals that can complement current accruals, and prices shares of the company declined over the next three years and the decline in share prices was related to a predictable decline in profits (Sloan, 1996).

Some companies conduct earnings management to avoid reporting negative earnings, declining profits, or failure to meet market expectations (Degeorge et al., 1999). Companies that are in the growth-

mature stage have high levels of sales so that the profit generated is high. High earnings resulting the taxes that must be paid are also high. Therefore, if the tax paid is not too high, the company conducts earnings management by lowering income. Income decreasing is indicated by a low discretionary accrual (Atwood et.al, 2010). Companies that are in the mature-stagnant stage are beginning to experience declining sales growth rates, resulting in lower profits due to competition with more innovative newcomers. At this stage there is an effort to increase the income so that it remains trusted by investors. Income increasing is indicated by a high discretionary accrual.

Duggan (2000) states that companies that are in the growth-mature stage manage earnings by decreasing income, while the mature-stagnant stage manages earnings by increasing income. The average of company age can be used as a variable to determine the life cycle. This is proven by Yan (2010) which uses the average age of a company to divide life cycle into growth-mature and mature-stagnant stages. Sulistyanto (2008) states that discretionary accruals are a component of managerial engineering accruals by utilizing freedom and discretion in estimating and using accounting standards. Management uses accounting standard loopholes that allow them the freedom to make justifications related to the freedom to determine the estimated lifetime of a fixed asset, the freedom to determine the method of depreciation of fixed assets, determine the percentage of the amount of uncollectible receivables, and determine the method of determining the amount of inventory. Accrual accounting systems provide opportunities for management to manipulate accounting earnings or income (De Angelo, 1986). Accrual accounting is divided into discretionary accruals and non-discretionary accruals. Discretionary accruals is a manipulation of the accrual earnings which is used to achieve the target earnings. Chen et al. (2010) state that the

most common method used in income management is the manipulation of discretionary accrual analysis because it is easy to calculate, has low manipulation costs, and is not easily identified by readers of financial statements. According to Connolly & Hyndman (2011) accruals are all operational events that affect cash flow in a particular year. Which is the accrual of changes in receivables, changes in debt, and changes in inventory. There is a negative accrual on depreciation costs. Accruals are calculated by accountants with the aim of comparing revenues and costs according to what is expected.

Hastuti (2011) states that accrual management is indicated by discretionary accruals. Earnings management can be done by management when the company is still growing, even when corporate earnings fall near zero. Companies that are in the growth stage report rising earnings to achieve the earnings forecast. In a variety of ways managers affect the analyst to adjust earnings to the right forecast. Evidence of earnings management in companies at the growth stage is not strong because it is difficult to separate earnings management from legitimate accounting policies. According to Biglari et al. (2013) the company at the growth stage is pressured to avoid increasing revenue even though the company is able to increase revenue higher. That is because if the profits generated are too high then the tax that must be paid is getting higher so that it harms the company (Atwood et.al, 2010). This research uses a Linear Piecewise Model because accrual earnings management information in this model is better than the previous model by Jones (1991). Linear Piecewise Model is used to measure earnings management, especially accrual earnings (Moreira & Pope, 2007). Accrual Linear Piecewise Model is a model of earnings management that better than the other models because it has the dividend component in the return that can detect the asymmetry of the company's financial statement information. Piecewise Linear

approach has several components, namely assets, revenue, and return. The weight for assets being used so that each company has the same size, revenue to describe the existence of projected revenue on sales, while returns represent information asymmetry due to revenue recognition. The age of the company is used to measure the effect of company's length of operation on company performance. The older the company, the experience in managing and maintaining is more optimal, so that the company's performance is increasing so do the company's reputation. The age the company can be detected by the company ability to survive. Furthermore, the age of the company has a positive effect with earnings management (Debnath, 2017).

The aimed of this research is to examine the effect of life cycle at the critical point of the growth-mature and mature-stagnant stages of the discretionary accruals and to examine the differences in the discretionary accrual stages of growth-mature and mature-stagnant stages. In addition, this research also examined the positive effect of company age on discretionary accruals. At the stage of growth, the company is described as a teenager who is not yet an adult. Market needs can begin to be met and growth is relatively fast. The rapid growth due to the market needs can be met with the business goal of the company's founder. In the mature stage, the company is described as an adult. At this stage, the manager starts to be professional. The company's lifespan is not long run then leads to the final stage of life cycle. However, there are some companies that are able to survive in the long run and there are also those which went bankrupt. Basically, the company's life cycle is dynamic and never straight like a line, because if the company's life cycle is only straight then the company will never advance and lag behind companies that are more innovative.

A company that is in the growth-mature stage has a high level of sales so

that generated high earnings. High earnings result the high taxes that must be paid. Although the tax paid is not too high, the company conducts earnings management by lowering income. Income decreasing is indicated by a low discretionary accrual value (Atwood et. al, 2010). Companies that are in the mature-stagnant stage are beginning to experience declining sales growth rates, resulting in lower earnings due to competition with more innovative newcomers. At this stage, there is an effort to increase income so that it remains trusted by investors. Income increasing is indicated by a high discretionnary accrual value. Managers affect analyst forecasting by show them how to manage earnings to be accurate with forecasting (Degeorge et al. 1999). A company in a downward phase is indicated by a low sales growth rate (Shank & Govindarajan, 1993). Managers prefer to increase earnings to avoid reporting loss and the declining earnings. Based on the explanation, it can be assumed that the choice of accounting policy to increase earnings is carried out by companies that are in the mature-stagnant stage.

The average value of discretionary accruals at the growth-mature stage is lower than the mature-stagnant stage. Discretionary accruals that have negative values indicate the value of non-discretionary accruals greater than the value of discretionary accruals. This shows that there is an attempt to decrease profits at the growth-mature stage. In the mature-stagnant stage the average discretionary accrual is higher. Companies that are in the mature-stagnant stage experience peak sales levels, but at this stage also decreased earnings due to the price competition. As a result of declining corporate earnings, the company conducts earnings management which increasing the earnings. There are two stages of the life cycle critical points: the growth-mature stage and the mature-stagnant stage. In both of stages earnings management is occurred. The lower the earnings generated by the company at the

mature-stagnant stage, the higher the value of discretionary accruals. The higher the earnings generated by the company at the growth-mature stage, the lower the discretionary accrual value. Based on the explanation above, the hypothesis proposed is as follows:

H₁: *The critical point at the growth-mature and mature-stagnant stages has a negative effect on discretionary accruals.*

H₂: *There are differences of discretionary accruals at the growth-mature and mature-stagnant stages.*

The age of the company is used to measure the effect of the company's length of operation on company performance. The age of the company is the age since the establishment of the company to be able to operate. Companies that established longer will be more trusted by investors than companies that have not been established for too long, assuming the potential earnings generated by the company that has been higher earnings for a long time. We include the age of this company in this research because the longer the company is established, the ability to maintain and manage it will be more optimal so that the company's performance is increasing and the company's reputation will be better. The extent to which the company can survive can be known from the age of the company. According to Debnath (2017) the age of the company there is a positive relationship with earnings management.

In this research, the company age was measured from the date the company was founded (Owusu-Ansah, 2000). Theoretically, a long-established company will be trusted by investors than a newly established company, because a long-established company is assumed to has ability to generate higher earnings than a newly established company. As a result, newly established companies will have difficulty in obtaining funds in the capital market and require them to rely on their own capital (Zen & Herman, 2007). The age of the

company can also be measured since the company started listing on the Indonesia Stock Exchange. We do not measure the age of the company since the company began listing on the Indonesia Stock Exchange because it does not show the actual conditions in the past if the company was established very long before the Indonesia Stock Exchange was founded. The older the age of the company, the greater the opportunity to do earnings management assuming that companies that have an older age experience peak sales levels, but the company also experienced a decline in profits due to price competition with new comer companies (Debnath, 2017). Based on the explanation above, the hypothesis proposed is as follows:

H₃: *Company age has a positive effect on discretionary accruals.*

RESEARCH METHODS

The data observation in this study are all manufacturing companies listed on the Indonesia Stock Exchange in 2015-2017. The sample selection in this study was conducted by purposive sampling and the type of data used was time series. The source of this research data was obtained from the website www.idx.co.id. The dependent variable in this research is discretionary accruals with Piecewise Linear Model. Piecewise Linear Model was first revealed by Moreira & Pope (2007). The discretionary accruals with Piecewise Linear Model is as follows:

Piecewise Linear Model

$$\frac{TA_t}{A_{T-1}} = \beta 1 \frac{1}{A_{T-1}} + \beta 2 \, \Delta REV_t + \beta 3 D1 + \\ \beta 4 \, RET_t + \beta 5 \, D1 \, RET_t + \varepsilon_t$$

TA_t = Total accruals in year t
A_{t-1} = Total assets in year t-1
REV_t = Revenue in year t
RET_t = Return in year t
$D1$ = Dummy variable,
  RET < 0 = 1, RET > 0 = 0
ε_t = Term Error or residual
t = Projected time by year

$$\frac{TAt}{AT-1} = NIt - CFOt$$

NI$_t$ = Net Income in year t
CFO$_t$ = Cash Flow Operation in year t
TA$_t$ = Total accruals in year t
t: = Projected time by year

Revenue (REV) is the company's sales value for the year. One component of measurement used in the Piecewise Linear Model approach is delta revenue (REV). Fulfilling the measuring component requires sales value in year t (REV$_t$) and sales value in the previous year (REV$_{t-1}$). Delta revenue (REV) is known through the formula:

$$\Delta REV = \frac{REVt - REVt - 1}{REVt - 1}$$

REV = Sales in year t
t   = Projected time by year
t-1   = Projected time by the previous years

$$RET = \frac{CPt + CPt - 1 + D}{CPt - 1}$$

RET   = Return
CP$_t$ = Closing price year t
CP$_{t-1}$ = Closing Price year t-1
D   = Dividend

The next step is to conduct a data regression test with the following formula:

$$\frac{TAt}{AT-1} = \beta1\frac{1}{AT-1} + \beta2\,\Delta REVt + \beta3D1 + $$
$$\beta4\,RETt + \beta5\,D1\,RETt + \varepsilon t$$

The results of the regression test indicate the value of the parameter or coefficient (β). The next step is to find the non-discretionary accrual value (NDA) with the following formula:

$$NDAt = \beta1\frac{1}{At-1} + \beta2\,\Delta REVt + \beta3D1 + $$
$$\beta4\,RETt + \beta5\,D1\,RETt$$

After knowing the value of TA and NDA, the amounts of accruals can be found by the formula:

$$DAt = \frac{TAt}{At-1} - NDAt$$

The discretionary accrual value affects the accrual earnings management. The greater the discretionary accruals generated, the greater the earnings management by the company because the predictive power of revenue (REV) or sales and return (RET) is expected to indicate the existence of accrual earnings management by the company. The independent variables in this research are life cycle and company age. Life cycle has two critical point stages: the growth-mature stage and the mature-stagnant stage.

We measure the stages with four steps. Firstly, we find the average of company age by dividing the number of company age by the number of companies. The average of company age is calculated by total age of the company divided by the number of sample companies. Secondly, we classify the life cycle into the growth-mature and mature-stagnant stages provided criteria: less than the average the company age is growth-mature and greater than the average company age is mature-stagnant. After we obtain the average of company age, the next step is categorizing the company into two stages. This is consistent with research conducted by Bo et al. (2016). Thirdly, we determine the dummy variable with the provisions of growth-mature given the number 1 and mature-stagnant given the number 0. According to (Zen & Herman, 2007) the newly established company has not received the trust from the investors, it is difficult to obtain funds in the capital market. Further, at the growth-mature

stage, company tends to do earnings management which raises the earnings. Companies that are in the mature-stagnant stage are more trusted by investors than the newly established companies, because long-established companies are assume to be able to generate higher earnings than the newly established companies, so companies do not motivate to do earnings management. Finally, we determine the company age by subtracting the year of research from the year of the company. The company age in this research is measured by the year the company was founded (Owusu-Ansah, 2000). We use the year of establishment beside the actual age or when the company was listed on the Indonesia Stock Exchange because many companies already existed before Indonesia Stock Exchange was founded, so it is more relevant.

The analytical model used in testing the hypothesis is a multiple linear regression model. We run the classic assumptions before we run the multiple linear regression. The classic assumption test consists of normality test, autocorrelation test, multicollinearity test, and heteroscedasticity test.

RESULTS AND DISCUSSION

The results of the classic assumption tests in this study indicate that there are no problems of normality, heteroscedasticity and multicollinearity. Different test is also used to analyse the discretionary accruals

differences by using two tools, namely homogeneity test and independent sample t-test. Before run the independent sample t-test, it is necessary to do a homogeneity test first. Homogeneity test is one of the requirements to produce accurate estimates in the difference test. If the data generated are homogeneous then the data used is equal with the variances that assumed. The requirement of homogeneous data is if the significance value more than 0.05. Homogeneity analysis using the Lavene test indicates that the significance value is more than 0.05. Hence, this result shows that the data is homogeneous.

The next step after we obtaining homogeneous data, we continuing by performing a different test that is the independent sample t-test. Independent sample t-test is done by comparing the differences between the two average values with the differences between the standard error of the two average values. The purpose of this test is to compare the average of two groups that are not related to each other and do the two groups have the same average value or not the same significantly (Ghozali, 2006:55). We test the hypothesis based on probability i.e. if the probability more than 0.05 then H_o is accepted and H_a is rejected, it means there is no significant discretionary accruals at growth-mature stage and mature-stagnant stage. Bivariate analysis at these stages investigates the discretionary accruals differences using the independent sample t-test, the result can be seen in Table 1.

Table 1. Analysis of Differences of Discretionary Accrual

Discretionary Accrual	Mean ± SD	Sig.
Growth-Mature	0.011581593 ± 0,332	0.042
Mature-stagnant	0.078972248 ± 0,317	

The table shows that there are different discretionary accruals in the growth-mature stage and mature-stagnant stage, with the significant value on the independent t-test results showing (P= 0.042<0.05). Meanwhile, the results of multiple linear regression tests can be seen in the following Table 2.

Table 2. Multiple Linear Regression Result

| Variables | Unstandardized Coefficients | | | | | |
	B	Beta	t-count	Sig t	Result
(Constant)	0.721				
Life cycle	-0.198	-0.276	-5.193	0.000	Significant
Company age	0.002	0.144	2.708	0.007	Significant
F-count	30.145				
Sig F	0.000				
R square	0.134				
Dependent variable: Discretionary Accruals					

Statistical test results show in Table 2 that the coefficient is -0.198 with a significance value of 0.000 (<0.05) thus **H₁ is accepted**. This means that the company's life cycle at the growth-mature and mature-stagnant critical points has a negative effect on discretionary accruals. The negative effect shows that the higher the earnings generated at the growth-mature stage, the lower the value of discretionary accruals and the lower the earnings generated at the mature-stagnant stage, the higher the discretionary accruals. The results of this study are consistent with the previous research conducted by Hastuti (2011) which states that growth-mature stage and mature-stagnant stage critical points are discretionary accruals.

The second hypothesis test aims to answer the research question whether there are differences in discretionary accruals at growth-mature stage and mature-stagnant stage critical points. In Table 1 we can see different test results show a significance value of 0.042 (<0.05) thus **H₂ is accepted**. Hence, there are differences in discretionary accruals at growth-mature stage and mature-stagnant stage critical points. The discretionary accruals of the mature-stagnant stage have an average value higher than the growth-mature stage. Both growth-mature stage and mature-stagnant stage both perform earnings management, but there is a difference, at the growth-mature stage, the average discretionary accruals are lower than mature-stagnant stage. This shows that the growth-mature stage performs earnings management which is decreases the earnings. Companies that are in the growth-mature stage have a high sales growth; the earnings generated are also high. The company carries out earnings management which decreases income to avoid paying taxes that are too high (Atwood et.al, 2010). The mature-stagnant stage has a higher mean of discretionary accruals. It indicates that the mature-stagnant stage conducts earnings management which increases the earnings which is at the mature-stagnant stage, the company will be experiencing a peak sales levels but at this stage also decreases profits due to price competition. As a result of declining corporate earnings, the company conducts earnings management which is raises the earnings.

Statistical test results show a coefficient of 0.002 and a significance value of 0.007 (<0.05) thus **H₃ is accepted**, it means that the company age affects discretionary accruals. The results of this study are consistent with the previous research conducted by Debnath (2017) which states that company age has a positive effect on earnings management. The influential company age occurs because the longer the company's life, the greater the opportunity for earnings management. The company age shows how long the company can compete and survive to run the business. A

long-established company has experience in managing, and can make trends from previous periods so it can make designs that can advance the company by increasing earnings and competing against companies that are long-established or newly-established (Zen & Herman, 2007). Based on the result show in Table 2, the coefficient determination (R-Square) is 0.134. It means that dependent variable affects independent variables 13.4% and 86.6% affects by other variables that not include in this research.

CONCLUSION AND RECOMMENDATION

This study uses data observation of 131 manufacturing companies and there are 261 valid data observation in 2015-2017. Based on the results, it can be concluded that there is a negative effect on the growth-mature stage and mature-stagnant stage critical points of the discretionary accruals, which means that the higher the profit generated at the growth-mature stage, the lower the discretionary accruals. This study provides evidence that there is earnings management in manufacturing companies listed on the Indonesia Stock Exchange. Discretionary accruals differ in a growth-mature stage and mature-stagnant stage critical points. Both of them do the earnings management, but it can be seen that the difference is at the growth-mature stage the company experiences sales growth so the earnings are high. The company has a positive effect on discretionary accruals, which means that the longer the company's life, the greater the opportunity for earnings management.

This study has a limitation that the discretionary accruals does not categorized the companies across industrial sectors to see other factors that might affect earnings management behavior. Future research can categorize the companies across industrial sector. The data observation in this research is manufacturing companies listed on the Indonesia Stock Exchange. In addi-

tion, the industrial sector besides manufacturing may have other phenomena that affect earnings management, so it needs to be investigated also across industrial sectors. Moreover, future research can use different life cycle and discretionary accruals model and include other factors that are not yet included in this research such as dividend payouts, sales growth, capital expenditure value which is also a financial variable that is directly related to company risk.

REFERENCES

Anthony, J.H., & Ramesh, K. (1992). Association between accounting performance measures and stock prices: A test of the life cycle hypothesis. *Journal of Accounting and Economics, 15*(2-3), 203-227.

Atwood, T.J., Drake, M.S., & Myers, L.A., (2010). Book-tax conformity, earnings persistence and the association between earnings and future cash flows. *Journal of Accounting and Economics*, *50*, 111-125.

Bamahros, H.M., Wan-Hussin & Wan-Nordin. (2015). Types of institutional investors and earnings management in Malaysia. *Advanced Science Letters*, *21*(6), 2003-2006.

Biglari, V., Alfan, E.B., Ahmad, R.B., & Najmeh, H. (2013). The ability of analysts' recommendations to predict optimistic and pessimistic forecasts plos one, *San Francisco*, *8*(10).

Black, E.L., (1998). Which is more value relevant: earnings or cash flows? a lifecycle examination. *Working Paper*, University of Arkansas, Fayetteville, Arkansas.

Blanco, B., Garcia Lara, J.M., Tribo, J. (2014). The relation between segment disclosure and earnings quality. *Journal Accounting and Public Policy*, *33*, 449–469.

Bo, Z, Guo F. & Guo, J. (2016). Absorptive capacity technological innovation, and product life cycle: a system dynamics model. *Springer Plus*, Heidelberg, *5*(1), 1662.

Cassell, C.A., Myers, L.A., Seidel, T.A. (2015). Disclosure transparency about activity in valuation allowance and reserve accounts and accruals-based earnings management. Elsevier, *46*, 23-38.

Chen, M.C. & Tsai, Y.C. (2010). Social behavior and personality; earnings management types and motivation: *A study in Taiwan*. *Palmerston North, 38*(17), 955-962.

Chen, X., Yang, W., & Huang, D. (2010). Corporate Life Cycle and the Accrual Model: An Empirical Study Based on Chinese Listed Companies. *Frontiers of Business Research in China*, *4*(4), 580-607.

Coad, A., Segarra, A. & Teruel, S. (2016). Innovation and firm growth: Does firm age play a role?, *Research Policy*: *Amsterdam, 45*(2), 387.

Connelly, C. & Hyndman, N. (2011). Accrual accounting in the public sector: a road not always taken. *Management Accounting Research*, *22*(1), 36-45.

DeAngelo, L.E. (1986). Accounting number as valuation substitutes: a study of management burnouts of public stockholders. *The Accounting Review, 59*, 400-420.

Debnath, P. (2017). Assaying the Impact of Firm's Growth and Performance on Earnings Management: An Empirical Observation of Indian Economy. *International Journal of Research in Business Studies and Management, 4*(2), 30-40.

Dechow, P.M. & Skinner, D.J. (2000). Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators. *Accounting Horizons*, 14(2), 235-250.

Dechow, P.M., Richard G.S & Amy P.S. (1995). Detecting Earnings Management. *The Accounting Review*, *70*(2), 193-225.

Degeorge, F., Jayendu P. & Richard Z. (1999). Earnings Management to Exceed Thresholds. *Journal of Business*, *72*(1), 1-33.

Duggan, S. (2000). Risk and the tech company life cycle. Retrieved from http://hkmd.com.

Eisenhardt, K.M. (1989). Agency Theory: An Assessment and Review. *Academy of management review*, *14*(1), 57-74.

Fuad. (2005). Simultanitas dan "trade-off" pengambilan keputusan finansial dalam mengurangi konflik agensi: peran dari corporate ownership. *Paper*. Simposium Nasional Akuntansi VIII, IAI.

Ghozali, I. (2006). *Aplikasi Analisis Multivariative dengan Program SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.

Gort, M. & Klepper, S. (1982). Time paths in the diffusion of product innovations. *The Economic Journal*, *92*(367), 630-652.

Gujarati, D. (2003). *Ekonometrika Dasar*. Jakarta: Erlangga.

Gup, B.A. & Agrrawal, P. (1996). The product life cycle: a paradigm for understanding financial management. *Financial Practice and Education,* FU/Winter, 41-48.

Hamid, A. (1999). Studi terhadap strategi prospektor dan defender dan hubungannya dengan harga saham: analisis dengan pendekatan life cycle theory. *Thesis,* Universitas Gadjah Mada, Yogyakarta.

Hastuti, S. & Hutama, P.S.P. (2010). Perbedaan perilaku earnings management berdasarkan pada life cycle dan ukuran perusahaan. *Paper*. Simposium Nasional Akuntansi XIII, Purwokerto.

Hastuti, S. (2010b). Studi tentang pemilihan kebijakan akuntansi dan hubungannya dengan manajemen laba: analisis dengan pendekatan siklus hidup perusahaan dan ukuran perusahaan. DIPA Kopertis Wilayah V.

Hastuti, S. 2011. Titik Kritis Manajemen Laba pada Perubahan Tahap Life Cycle Perusahaan: Analisis Manajemen Laba Riil dan Manajemen Laba Akrual. *Jurnal Akuntansi dan Keuangan Indonesia*, 8(2), 107-122.

Hayn, C. (1995). The Information Content of Losses. *Journal of Accounting and Economics*, 20(2), 125-153.

Indraswono, C. (2015). Pengaruh struktur kepemilikan institusional, ukuran perusahaan, dan legal origin terhadap manajemen laba. *Jurnal Akuntansi Bisnis*, 13(26), 145-173.

Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency cost and owner-ship structure. *Journal of Financial Economics*, 3, 305-360.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), 193-228.

Ketz, E.J. (1999). Update: how goes SEC's war agaits earnings management? *The Journal of Corporate Accounting and Finance*, 10(3), 41-52.

Moreira, J.A. & Pope, P. (2007). Piecewise Linear Accrual Models: do they really control for the asymmetric recognition of gains and losses?. *Universidade De Porto, Faculdade de Economia de Parto*.

Owusu-Ansah, S. (2000). Timeliness of corporate financial reporting in emerging capital market: Empirical evidence from the Zimbabwe Stock Exchange. *Journal Accounting and Business Research*, 30(3), 241-254.

Palupi, M.J. (2004). Pengaruh siklus hidup perusahaan terhadap koefisien respon laba: Bukti empiris pada Bursa Efek Jakarta. *Thesis*, Universitas Gadjah Mada, Yogyakarta.

Peasnell, K.V., Pope, P.F. & Young, S. (2005). Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals? *Journal of Business Finance & Accounting,* 32(7,8), 1311-1346.

Pope, P.F. & Walker, M. (1999). International Differences in the Timeliness, Conservatism, and Classification of Earnings. *Journal of Accounting Research, 37*, 53-87.

Sari, P.M.A.I. (2012). Pengaruh rasio keuangan terhadap investment opportunity set dalam tahapan siklus hidup perusahaan manufaktur yang terdaftar di bursa efek indonesia tahun 2006-2010. *Jurnal Ilmiah Mahasiswa Akuntansi*, *1*(2), 92-98.

Sari, R. P., & Kristanti, P. (2015). Pengaruh Umur, Ukuran, dan Profitabilitas Perusahaan terhadap Perataan Laba. *Jurnal Riset Akuntansi dan Keuangan*, *11*(1), 77-88.

Schori, T.R. & Garee, M.L. (1998). Like products, companies have life cycle. *Marketing Views.* 32(13),4-4.

Scott, W.R. (2003). *Financial Accounting Theory 3rd edition*. USA: Prentice-Hall.

Shank, J.K. & Govindarajan, S. (1993). *Strategic cost management: the new tool for competitive advantage*. New York: The Free Press.

Sloan, R.G. (1996). Do stock prices fully reflect information in accruals and cash flow about *future* earnings? *The Accounting Review, 71*(3), 289-315.

Sulistyanto, S.H. (2008). *Manajemen Laba: Teori dan Model Empiris.* Jakarta: Grasindo.

Teoh, et al. (1998). Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics*, *50*(1), 63-99.

Yan, Z. (2010). A new methodology of measuring corporate life-cycle stages. *International Journal of Economic Perspective, 4*(4), 579-587.

Zen, S.D. & Herman, M. (2007). Pengaruh harga saham, umur perusahaan, dan rasio profitabilitas perusahaan terhadap tindakan perataan laba yang dilakukan oleh perusahaan perbankan yang terdaftar di Bursa Efek Jakarta. *Jurnal Akuntansi & Manajemen*, *2*(2), 57-71.