

The New Decomposition Asset Growth Effect. An Empirical Evidence of Indonesia

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Abstract

This paper provides new evidence for a causal effect of asset growth on stock returns by using decomposition method. The sample used in this research is non-financial manufacturing firms listed in Indonesia Stock Exchange (IDX) in the year of 2010 - 2015. The asset growth testing was done by conducting regression analysis. The paper results were indicated by using decomposition method for a causal effect of asset growth, book-to-market, and firm size on stock return. In addition, assets and liabilities decomposition known that the growth of fixed assets and retained earnings have a positive influence to return firms. The result by decomposition method asset growth has a positive effect on stock returns, or in other words, the higher the asset growth, the higher the stock return. Others, the cash growth negatively affect to stock returns at the time of the asset and operating liabilities have a negative significant effect on stock returns. The decomposition method asset growth has a positive effect on stock returns, in other words, the higher the asset growth, the higher the stock return. At last, the cash growth negatively affects to stock returns at the time of the asset and operating liabilities have a negative significant effect on stock returns.

Keywords: asset growth; decomposition method; return; size; book to market

JEL Classification: F36; G10; C12

Introduction

The value of the firms according to Fama *et al.* (2008) showed solely a function of investment opportunities in a perfectly competitive market while the presence of the growth firms in the future was indicated by the growth of opportunities. This can be seen by the opportunity to invest is owned and available for firms in the future. Badrinath and Wahal (2002) examined the variables asset growth with the firms' risk level. The firms with a high level of asset growth will increase the risk. The firms are considered to have a high risk, in case if it has a high uncertainty of the rate of return on assets (Prasetio 2010). The uncertainty return on the assets in the future will affect the accuracy of the firms to predict the revenue that will be received in the future.

Investors ensure the value of the company to determine its shares. The value of the company according to Fama *et al.* (1995) showed solely a function of investment opportunities in a perfectly competitive market while the presence of a growth company in the future is indicated by the growth of opportunities. This can be seen that the investment opportunities are owned and available to the company in the future. A number of investment opportunities in the future is reflected in the market value of the company in which, investment opportunity is a combination of assets in place and the present value of growth opportunities of the company.

Investors also make an assessment by looking at the fundamental aspects of asset growth of the firms invested. The growth of the firms' assets is expected to increase a number of assets where the firms' production will increase the production capability so that the results will increase one's corporate profits. With the increasing profitability of the firms and the effect on increasing the return, both are expected by investors (Laksana 2016).

The terms of firm funding involving decisions made in the firm compose funding sources are used by the firm to finance the production. There are several sources of funding that can be used by firms such as long-term debt, preferred stock, and common stock. Firm's funding decisions will be influenced by the trade off between timing and risk to be gained when it uses these funding sources. Internal funding sources such as retained earnings will strengthen the financial position of the firm in the future. And part undistributed profits to the owners will be used to back up to face the risk of losses in the future as well as to increase the firm's assets.

A research by Fairfield (1994) conducted a test about the effect of growth in operating assets by looking at the presence of mispricing at accrual earnings. The firms' growth may occur due to the firms' net assets is lower than the market value. Carlson *et al.* (2004) also conducted research focused on cash flow decomposition including fixed costs, income from assets, and the opportunity to grow the firms. Cooper *et al.* (2008) used annual reports from 1968 to 2003 examined the effect of asset growth on stock returns, using cross-sectional growth in assets of funding and investment. This paper is crucial especially for the asset growth evidence in emerging market such as Indonesia. Investors, currently, used the CAPM model (Capital Asset Pricing Model) in estimating the return of a security. Capital Asset Pricing was used to determine the return of an asset at equilibrium conditions.

Fama *et al.* (1992b) examined the relationship between the beta and the average cross-sectional in the period 1963 -1990 by taking samples NYSE, AMEX and NASDAQ. The research included for the size, leverage, book-to-market equity and earnings price. When these factors are included, it found an empirical evidence that the cross-sectional variation in returns strongly associated with variable size and book-to-market equity. Fama and French with three-factor models asserted significantly that this model has a better ability than the single factor of CAPM. At last, this paper incorporates the asset growth as a risk factor that affects on stock returns by size, book to market and applies decomposition method.

1. Data and summary statistics

Our main sample used population manufacturing firms "go public" which is listed on the Indonesia Stock Exchange from 2010 to 2015. The population is the criteria of a particular sample as preferred by researchers and carefully chose some samples that are relevant to study design. As in previous studies, this research will issue a sample of firms that belongs to financial industry since the firms generally have a small physical relatively to capital investment and to avoid the difficulty in calculating the variables research (Carlson *et al.* 2004). The sample firms have to require such requirements: The firms must be listed on the Stock Exchange in the year 2010 - 2015, it has a positive asset growth at each year from 2010- 2015, and has financial reports and data for five years started from 2010 to 2015. The firms' financial reporting period ended on December 31 at each. These shares have a size and book to market value ratio in December of year t-1.

This paper uses a comprehensive variable to measure the growth of firm's assets by using the percentage change in total assets from year to year. Lag Asset Growth used the changing percentage of Asset Growth at total change assets from t-3 to t-2, (Titman *et al.* 2004), Lag Asset Growth is categorized as independent variables in testing. Lag growth (Cooper *et al.* 2008) was used to explain whether the assets in the prior year asset growth affect the current stock return or not. Book Market obtained by dividing the stock price and the book value per strip. The data are available in the annual balance sheet of each firm issued in the form of annual reports by IDX. It is the division between the book value of equity with a market value of equity. The distribution of samples is based on the value of BM December year.

2. Measuring the Asset Growth Effect

Investors make an assessment by observing the fundamental aspects of asset growth of the firm invested. The growth of the firm's assets is expected to increase a number of assets in which the firm's production will increase

the production capability so that the results increase a corporate profit. Basically, assets stated economic benefits to the resources are owned by the firm including goods and rights that provide benefits in the future and the transactions that occurred in the past. Assets are used to earn income and to support the operational activities of the firm.

Asset growth is the change in the value of assets over time. Firms that grow a number of assets will tend to increase. Berk *et al.* (1999) and Anderson *et al.* (2010) also explained that firms which are trusted by the market will achieve asset growth rate higher than the firm that shows the expected lower growth rates. It is also found that the main factor that explains the difference between the asset growth firms is the expectation about desired corporate profit growth investors to the firm in the future. Polk *et al.* (2008) suggested that the rate of profit growth can also be seen as an investor expectation about the prospects of the firm in the future which is reflected in the stock price.

The value of the firm showed solely a function of investment opportunities on the market perfect competition while the indications of the growth in the future indicated by the opportunity. Fama *et al.* (1992a) in his research about a cross-sectional regressions of stock returns on asset growth. This paper also found that the growth of assets in the short term may affect to stock returns, where this study used capital investment. A research by Titman *et al.* (2005) also found that the growth in capital investment also affects to annual stock return. Another research by Hirshleifer *et al.* (2004) stated that the cumulative accrual to net operating of its asset has a positive effect on stock return. Whether the asset growth has an effect on stock returns in cross section. A test is shown by looking at the coefficient interaction containing elements using the model is developed by Cooper *et al.* (2008), based on the equation with modification using decomposition method:

$$R_{i,t} = \hat{\gamma}_0 + \hat{\gamma}_1 \text{ASSETG}_{i,t} + \hat{\gamma}_2 \text{L3YASSETG}_{i,t} + \hat{\gamma}_3 \text{Size}_{i,t} + \hat{\gamma}_4 \text{BM}_{i,t} + \varepsilon_{i,t} \quad (1)$$

where: $\hat{\gamma}$ denotes a constant model of Fama MacBeth. Lag asset also be used to determine whether asset growth in the previous year affecting in returns of the next year will strengthen an asset growth as one of the risk factors.

The continuous growth of the firm will also be followed by increasing the burden of the firm. Due to the use of assets, it will require a fee. In this case, if asset increases, the fees for the use of such assets will also increase. If the asset growth was not accompanied by a rise in earnings in balance, then the asset growth will decrease the firm's profit.

Table 1. The Relationship between Growth Assets and Stock Return. Asset Growth, LagAG, BM, and Size

	Asset Growth	LagAG	BM	SIZE
1 (Low)	0,9451	0,9799	1,0329	0,9945
2	0,9391	0,9672	1,0234	0,9997
3	0,9750	1,0124	0,9895	0,9925
4	0,9696	0,9757	1,0261	0,9953
5	0,9917	0,9650	1,0054	0,9832
6	0,9961	0,9933	0,9944	0,9941
7	0,9951	1,0399	0,9651	1,0048
8	1,0667	1,0370	0,9930	1,0069
9	1,0524	1,0174	1,0087	1,0037
10 (High)	1,0615	1,0486	2,7455	1,0051

The following research by Cooper *et al.* (2008), showed a beginning with descriptive statistics to the relationship between the stock of asset growth, book-to-market of high and size. The relationship of data

consisting of 456 observations is divided into 10 deciles from the lowest to the highest based return. The division is made to look in detail whether it has an effect of changing variables studied from the lowest to the highest decile. Kelley (2003) found the evidence that the current assets negatively affect to stock returns in a weak financial statement for a large firm. By decomposition method, this paper obtains a result that growth current assets other than cash negatively affect the stock return.

Figure 1. Level of asset growth in firms

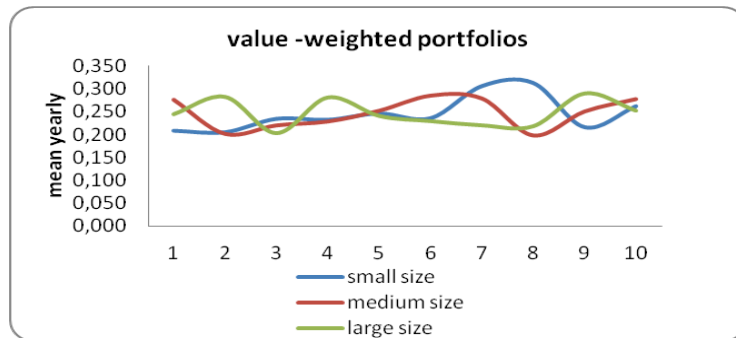


Figure 1 indicates that the asset growth has a positive value at every size firms. The growth of assets in the figure also showed an enhancement of decile 1 from the spreads is positive at all type of size firms. The largest spread is shown at a small size firm (0.053) compared to medium and large size. The small firms on figure indicated the tendency to produce a higher return than medium or a large firm. It implied that the trend of the firm of a small size has an additional expectation of return where it will compensate the highest risk.

Table 2. Asset Growth, LagAG, Book Market and Size Regression Model

All Firms				
Variable	Model 1a	Model 1b	Model 1c	Model 1d
Dependent variable Return	Coefficient (t-stat)			
C	0,950 (47,264) ***	0,961 (45,813) ***	0,983 (39,595) ***	0,983 (37,123) ***
Asset Growth	0,208 (2,789) **	0,219 (2,931) ***	0,218 (2,924) ***	0,218 (2,922) ***
LagAG	-	0,80 (1,795) *	0,081 (1,827) *	0,081 (1,823) *
Book Market	-	-	-0,018 (-1,672) *	-0,017 (-1,557)
Size	-	-	-	0,02570E-8 (0,077)
Adj. R ²	0,15	0,019	0,023	0,21

Note: *** significance at $\alpha = 0.01$; ** significance at $\alpha = 0.05$; * significance at $\alpha = 0.10$

In the first regression models, Table 2 shows a strong asset growth effect on stock returns with the coefficient value of each model is positive (0.208; 0.219; 0.218 and 0.218) significant at $\alpha = 1\%$. This suggests that the higher asset growth, the higher the average stock return. Another control variable such as Lag Asset growth, Book-to-market and Size are also seen to observe the impact of stock returns. For all firms such as asset growth, lag, are positively have a significant effect on the level of 10%. These results reinforce that the asset growth has a strong influence on the return of the firm. For book market value, it is significantly negative at $\alpha = 10\%$ in the model 1c, where the variable size has not been put to the regression model. Other than that, Size has a positive value although it is not significant.

The result that is shown in Table 2 overall consistent with the research by Cooper *et al.* (2008) and Bolbol *et al.* (2005) who examined the effect of asset growth on stock returns. The results stated that the growth

of asset has a positive significant effect on stock returns so that it can be one of the stronger predictors in predicting stock return. These results are also similar to Pontiff *et al.* (2008) which showed that the asset structure, growth, profitability, risk, size, ownership affiliation, payment systems, and the market condition have a positive significant effect on stock returns. While control variables book market got a negative result in all tables.

The results in contrast with the research in the United States shows that the capital market in Indonesia is inefficient in which shares with book-to-market low provide the benefits in excess of the market advantage. For the overall size of each table, it showed a positive value. It means that the higher the size, the higher the tendency stock returns. It then relates to the ability of the firm's assets to finance the investment impact on growth opportunities.

3. Decomposition Method of Asset Growth

Decomposition based on asset growth component in terms of funding and investment. It will show in which components of growth assets strongly affect to stock returns. The result of this decomposition can be used to provide an insight into why the growth in assets can predict returns in cross section especially a case on emerging market such in Indonesia. The component of growth which is seen at overall corporate assets on the variable balance sheet of asset growth is the most influential on stock return. The decomposition method used on the left side of the balance sheet of the firm is: Total asset growth = Cash growth (Δcash) + Noncash current assets growth ($\Delta\text{CurAsst}$) + Property, plant and equipment growth (ΔPPE) + Other assets growth ($\Delta\text{OthAssets}$). On the right side of the balance sheet of the firm: Total asset growth = Operating liabilities growth (ΔOpLiab) + Retained earnings growth (ΔRE) + Debt financing growth. (ΔDebt).

The regression equation of decomposition:

$$R_{i,t} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t} \Delta\text{cash}_{i,t} + \hat{\gamma}_{2t} \Delta\text{CurAsst}_{i,t} + \hat{\gamma}_{3t} \Delta\text{PPE}_{i,t} + \hat{\gamma}_{4t} \Delta\text{OthAst}_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$R_{i,t} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t} \Delta\text{OpLiab}_{i,t} + \hat{\gamma}_{2t} \Delta\text{RE}_{i,t} + \hat{\gamma}_{3t} \Delta\text{Debt}_{i,t} + \varepsilon_{i,t} \quad (3)$$

Table 3. Decomposition Method on Left Side

All Firm					
Variable	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e
Variable dependent Return	Coefficient (t-stat)				
C	1,008 (102,377)***	1,010 (110,886)***	0,903 (40,041)***	1,003 (113,227)***	0,914 (39,921)***
Δ Cash	-0,012 (-1,334)	-	-	-	-0,012 (-1,222)
Δ Current Asset	-	-0,039 (-2,569)**	-	-	-0,044 (-2,646)*
Δ Fixed Aset	-	-	0,511 (4,696)***	-	0,524 (4,843)***
Δ Other Asset	-	-	-	-0,006 (-0,762)	0,009 (0,949)
Adj. R ²	0,002	0,012	0,044	-9,240	0,057

Note: *** significance at $\alpha = 0.01$; ** significance at $\alpha = 0.05$; * significance at $\alpha = 0.10$

Based on the table, Cash Δ growth negatively affected to stock returns. This model is shown to the value of F test at 1.7807 with a significant value of 0.187, R² value (R Square) of 0.0017. The growth of cash on stock returns is statistically 10% at a significant level. The coefficient correlation between the growth of cash and stock return is negative (-0.0119). Currently, it was divided into 3 firms and the size table also showed the same thing. The value growth in Cash Δ showed a consistently negative effect on stock returns. This showed that the higher the cash growth, the lower stock returns.

This result supported by Prasetyo (2003) examined the use of variable earnings, cash, and operating activities on stock returns. The study stated that the variable profit and operating activities, positively affect to

stock returns but the cash in financing activities negatively affect to stock returns, although it does not show a significant negative effect. The testing results also showed that there is a tendency for the higher growth of the lower treasury stock returns. This is because the shareholders consider if the growing cash is big, it means that a cash allocation for investment is not optimal. Supposedly, the cash can be used for investment activities which increase profits in the future.

The growth of current assets other than cash negatively effects on stock returns. Table 2b models (all firms) were used to test the second hypothesis, showing the value of the F test of 6.5981 with a significant value of 0.010, R 2 value (R Square) of 0.0122. It indicates that the stock return variable variation can be explained by variations in current assets amounted to only 0.12% and 88% is explained by other variables.

The effect of current assets to stock returns is statistically significant at the 1% significant level. It shows that the higher current assets other than cash, the lower stock returns. This study is supported by research (Pontiff *et al.* 2008), (Booth 1998) and (Cooper *et al.* 2008) in the asset growth decomposition resulting in the growth of current assets other than a cash which negatively affects to the stock return.

A growth of other current assets also had a negative effect on stock returns. The result in the table shows the value of F test 6.5981 with a significant value of 0.010, R 2 value (R Square) of 0.0122, This indicates that the stock return variable variation can be explained by variations in current assets amounted to only 0.12% and 88% is explained by other variables. This result is supported by a research (Cooper *et al.* 2008) in the asset growth decomposition clearly get a result at the growth of current assets other than a cash which negatively affects to stock return.

Cash for purchasing machinery had a positive influence on stock returns. This means that an increasing in investment in fixed assets or cash out from investment activities will have a positive influence on stock returns during the announcement of the new investment. Fama *et al.* (2008) stated that the firm has fixed an asset with a high value and it could reduce financial distress. These assets can be used as a payer liability for investors and creditors if the firm went bankrupt.

Table 4. Decomposition Method on Right Side

All Firm					
Variable	Model 3a	Model 3b	Model 3c	Model 3d	Model 3.1
Variable dependent Return	Coefficient (t-stat)				
C	1,005 (117,309)***	1,015 (66,954)***	0,984 (85,844)***	1,001 (118,546)***	1,002 (54,731)***
Δ Operating Liabilities	-0,011 (-2,375) **	-	-	-	-0,015 (-2,980) *
LN_Δ Retained Earning	-	0,008 (0,981)	-	-	0,008 (1,039)
Δ Debt	-	-	-	-0,24E-6 (-0,278)	-2,522E-5 (-,294)
Adj. R ²	0,0100	-0,0023	-0,0022	-0,0020	0,21

Note: *** significance at $\alpha = 0.01$; ** significance at $\alpha = 0.05$; * significance at $\alpha = 0.10$

Table 4, shows the relationship between the coefficient operational expenditure growth with the stock return is negative (-0.0113). The adj R Square of 0.010 indicates that the stock return variable variation can be explained by variations in operating expenses amounted to only 10%. The higher the growth in operating liabilities, the lower the stock returns earned will. This result in line with Hirshleifer *et al.* (2004), examined the influence of NOA on stock returns by distinguishing between the operating assets and operating liabilities. In these studies, the results showed that operating liabilities have a negative effect on stock return. Investors expect the firm's operating expenses from year to year become more efficient. Jacoby *et al.* (2000) also stated that the operational liabilities are the factors that affect the firm's business risk, the greater the operating expenses, the greater the risk of large firms will be. The debt growth also shows a negative effect to the return.

The debt negatively affects to stock returns because firms have to pay the interest obligation, and the principal debt further will reduce profits in the future. Therefore, the increase in debt will negatively affect to return. The firms with a high growth tend to take a little debt. The firms have the option to have less debt because the firms prefer to focus on solving some problems with the debt.

Conclusion

The result of this study provides an empirical evidence and supports the theory proposed by Carlson *et al.* (2004), Pontiff *et al.* (2008) and Cooper *et al.* (2008) which stated that the growth of assets has an influence on stock returns. This research is expected to further clarification both the relationship between asset growth and stock returns using decomposition method, in which it can be used as a benchmark for investors and securities analysts in determining the risk in the investment decision. By decomposition method asset growth, it has a positive effect on stock returns, or in other words, the higher the asset growth, the higher the stock return comes. A cash growth negatively affects to stock returns at the time of the asset and operating liabilities have a significant negative effect on stock returns.

This paper based on asset growth component in terms of funding and investment. Decomposition shows the components of a strong asset growth effects to stock returns. From decomposition, the fixed asset investment growth has a positive effect on stock returns in terms of funding and retained earnings growth and growth equity positive effect on stock returns. This paper uses secondary data and samples public company with manufacturing industry in Indonesia Stock Exchange in the year of 2010 - 2015, and the influence of the type of industry that may affect was not included in the models. The result of this study provides an empirical evidence and the theory supports an asset growth. The firm who is trusted by the market will achieve a higher rate of asset growth than the firm that shows the expected lower growth rate. It also found that the main factor that explains the difference between the asset growth of these firms is the expectation of profit growth and growth equity firm, according to the investors desire to the firm in the future.

The growth of the firm assets could be a special level values for investors. Some factors toward the accuracy of information and speed information will be reflected in the price of securities. Surely, the response of asset growth can not be directly reflected on the spot, but there is a gap between the receipt of information and price reaction in receiving and processing the information. Systematic risk factors will also be reflected in the growth of the firm assets. Then, a failure to grow and develop assets will increase the burden on the company. At last, the greater the risk of failure and load the c firm, investors will tend to release the shares, causing the stock price down.

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