

# Abnormal Return in Growth Incorporated Value Investing

Yanuar Dananjaya \* Renna Magdalena<sup>1,2</sup>

1.Department of Management, Universitas Pelita Harapan Surabaya, Jl. A. Yani 288 Surabaya-Indonesia

2.Department of Accounting, Universitas Pelita Harapan Surabaya, Jl. A. Yani 288 Surabaya-Indonesia

*The research is financed by Universitas Pelita Harapan Surabaya*

## Abstract

Two main types of investing strategies are value investing and growth investing. In value investing investors search for stocks which are considered cheaper than average based on certain measures like P/E ratio or P/B ratio. In growth investing investors search for stocks with high growth potential regardless of price. High growth potential is reflected in above average price. Thus value investing strategy and growth investing strategy are usually considered to be opposite of each other. This view ignores possibility that instead of opposite, they can complement each other. Particularly growth investing strategy can be used to solve the main problem in value investing, that is to differentiate between stocks that are cheap due to valid reason and stocks that are cheap due to mispricing. This study develops a method where growth factor is incorporated to value investing and thus indicating mispriced stocks among group of low price stocks.

**Keywords:** Value investing, Growth investing, Stock mispricing, Stock return

## 1. Introduction

Value investing refers to an investing strategy where investor seeks stocks that are priced below average based on certain measure. Chan and Lakonishok (2004) found that measurements that are commonly used in value investing are P/E ratio and P/B ratio. Stocks with low P/E ratio or P/B ratio are considered cheap, and considered as value stocks. Various researchers have found that value stocks will yield higher return compared to stocks with high P/E ratio or P/B ratio. There are two main school of thoughts on why that is so.

Fama and French (1992), Fama and French (1995), and Capaul et al (1998) argued that higher return in value stocks is due to higher risk in those stocks, and thus investors require higher return. In this case higher return is simply as compensation of higher risk. Stocks with low P/E or P/B ratio experience reduction to their price due to negative market sentiments that usually happen to companies that with certain distress and fall out of favor in the market. Owning these stocks is risky for investors.

Dreman and Lufkin (2000), Lakonishok et al (1994), Daniel et al (1998), Chan et al (2003) and LaPorta (1996) argued that higher return in value stocks is related to market overreaction phenomena described by De Bondt and Thaler (1987). When certain companies experience distress, market over react to it and depress the stock prices below intrinsic value. When in the future market realizes the overreaction, price will go up to intrinsic value and thus result in positive return.

A somewhat similar argument was proposed by Kothari et al (1995) whereby investment managers and stock advisors avoid recently depressed stocks (value stocks) due to unpopularity of the stocks and thus depressing the price further, below intrinsic value. Bauman and Miller (1997) found that stocks with low P/E and P/B ratio has more positive earnings surprise while stocks with high P/E and P/B ratio has more negative surprise.

Whether the return of value stock is due to higher risk or market overreaction carries important consequence to investors. If the return is due to risk, then value investing strategy is not viable for investors to improve portfolio performance. As portfolio performance takes into consideration both return and risk, increasing return by increasing risk does not necessarily improve performance. Investors may as well simply choosing stocks with higher beta to increase expected return. In contrast if return is due to market overreaction to negative situation, higher return does not mean higher risk. This view is advocated by Lakonishok et al (1994) that found same level of beta between stocks with low P/E and P/B ratio compared to stocks with high P/E and P/B ratio.

Assuming return is due to overreaction, another problem concerning value investing is how to differentiate between stocks that have low P/E and P/B ratio due to overreaction from stocks that genuinely problematic. A portfolio of value stocks that contains genuinely problematic stocks will dilute performance of the portfolio and reducing its return. We propose to use growth investing strategy to identify value stocks with rising earning and thus unlikely to have genuine problem.

In growth investing investors seek stocks with high growth potential (called growth stock) regardless of current price level. Liang (1999) found that majority of investors use variant of either value or growth investing. Jegadeesh, et al (2004) shows that large number of stock analyst follows growth investing strategy. One parameter that is commonly used to determine growth stocks is growth of earning per share. Growth of earning

indicates improvement of a company business and it is expected that stock price increase will follow.

Dananjaya and Magdalena (2015) found that combining value and growth strategy results in higher actual return compared to individual strategy. However it is unclear whether higher return is accompanied with higher risk. One way to confirm it is to measure abnormal return instead of actual return. Higher risk will be reflected in higher expected return and thus not necessarily results in positive abnormal return. On the other hand, positive abnormal return shows that either there is no increase of risk or the increase of actual return is higher than the increase of expected return due to risk.

## 2. Methodology

The object of the research is stocks from Kompas 100 index in period of February 2010. Kompas 100 is a stock index consisting one hundred stocks from Indonesian Stock Exchange that are judged to be liquid and has good fundamental. The index is reviewed every six months, in February and August. The purpose in using this index is to weed out any small and inactive stocks.

This research consists of two parts. In the first part value investing strategy and growth investing strategy are used to form portfolio of value stocks and growth stocks. The returns of both portfolios are compared to Indonesia stock index. Additionally, abnormal returns of the portfolios are calculated with abnormal return defined as return above expected return. Expected return itself is calculated using CAPM formula.

In the second part, a growth investing strategy is applied to selection of value stocks and thus identifying stocks with high growth potential. The result is compared to purely value and growth strategy.

### 2.1 Value Investing Strategy

To check the effectiveness of value investing strategy, starting from beginning of 2010, P/E ratio of the one hundred stocks from February 2010 Kompas 100 index are calculated. The stocks are then sorted from lowest to highest P/E ratio. P/E ratio is defined as price of stock divided by Earning per Share (EPS). EPS itself is Net Income divided by number of shares. Stocks with negative earning are removed from sample. Fifteen stocks with lowest P/E ratio are formed to a same weight portfolio. Portfolio is held for one year, and return is measured. Portfolio return is then compared to Indonesian stock index in the same period. The process is repeated using P/B ratio. P/B ratio is defined as price of stock divided by equity book value per share.

To calculate abnormal return, beta of each stock is calculated. It is done with monthly data of the last 3 years (yielding 36 data points). For each month, data of monthly stock return, monthly stock index return, and monthly central bank interest rate are gathered. The values of stock return minus central bank interest rate are plotted against stock index return minus central bank interest rate. The 36 data points will then form a more or less a straight line whose gradients is beta. Beta portfolio is then calculated as average of its stock components betas. Portfolio expected return in a particular year is calculated using CAPM equation based on portfolio beta, stock index return and central bank interest rate in that year. Abnormal return is return above expected return.

The first portfolio is formed at end of February 2010 based on 2009 financial report, and held until end of February 2011. Return and abnormal return is calculated. Portfolio is then re-arranged based on 2010 financial report, and held until end of February 2012. The process is repeated until end of February 2015 to collect 5 results.

### 2.2 Growth Investing Strategy

The method for growth investing strategy is identical to value investing strategy. Here parameter used is two years growth of Earning per Share. Earnings per share (EPS) is calculated as net income in previous year divided by number of shares. Thus 2010 EPS growth is the annualized growth of 2008 EPS to 2010 EPS. As in previous case, starting from February 2010, EPS growth of the one hundred stocks from February 2010 Kompas 100 index are calculated. Some stocks with negative earning are taken out of the sample. The stocks are then sorted from highest to lowest EPS growth. Fifteen of stocks with highest EPS growth are formed to portfolio. The portfolio is again held for one year. At the end of one year period return and abnormal return are calculated. The process is repeated for the second year period, and again until February 2015 to collect 5 results.

### 2.3 Growth Incorporated Value Investing Strategy

For each period, twenty five stocks with lowest P/E and P/B ratio are ranked based on EPS growth. Fifteen stocks with highest EPS growth are chosen to form portfolio. As in previous case, the portfolio is held for one year, and return and abnormal return is calculated. Again the process is repeated until February 2015 to collect 5 results

## 1. Results

Table 1 show the results of low P/E ratio portfolio, low P/B ratio portfolio, high EPS growth portfolio, growth incorporated low P/E ratio portfolio, and growth incorporated low P/B ratio. The table shows portfolio yearly return, Indonesia stock index return, Portfolio return above index, Portfolio beta, Central bank interest rate,

Portfolio expected return, and Portfolio abnormal return. Table 1 shows that value investment strategy using P/E ratio as parameter to find value stocks yields positive results. Actual returns are positive in all periods; including 2013 where Indonesian stock index experienced negative return. Actual returns are always higher in any period compared to stock index return. Averagely actual returns are 9.21% higher than stock index returns. Portfolio betas are always higher than 1, showing that the strategy results in stocks with higher than average risk. However abnormal returns are generally positive, except for 2012. Average abnormal return is respectable 5.63%, showing that this strategy generates positive abnormal return.

Table 2. shows portfolio yearly return, Indonesia stock index return, Portfolio return above index, Portfolio beta, Central bank interest rate, Portfolio expected return, and Portfolio abnormal return. Table 2 shows that value investment strategy using P/B ratio as parameter to find value stocks yields positive results. Actual returns are positive, except in 2014. Averagely actual returns are 9.21% higher than stock index returns. Portfolio betas are always higher than 1, showing that the strategy results in stocks with higher than average risk. However abnormal returns are generally positive, except for 2014. Average abnormal return is respectable 8.16%, showing that this strategy generates positive abnormal return.

Table 3 shows portfolio yearly return, Indonesia stock index return, Portfolio return above index, Portfolio beta, Central bank interest rate, Portfolio expected return, and Portfolio abnormal return. Table 3 shows that growth investment strategy using EPS growth as parameter to find growth stocks yields positive results. Actual returns are positive, except in 2013. Averagely actual returns are 8.28% higher than stock index returns. Portfolio betas are always higher than 1, showing that the strategy results in stocks with higher than average risk. Abnormal returns are negative in three out of five periods although average abnormal return is still positive.

Table 4 shows portfolio yearly return, Indonesia stock index return, Portfolio return above index, Portfolio beta, Central bank interest rate, Portfolio expected return, and Portfolio abnormal return. Table 4 shows that incorporating growth to value investment strategy that is using P/E ratio enhances its performance. All actual returns are positive, and in three out of five periods are higher than pure value investment strategy. Average actual return increases from 24.53% to 30.97%. Average portfolio beta increase slightly from 1.34 to 1.39, indicating slight increment of risk. Abnormal returns are generally positive except for 2012. In four out of five periods they are higher compared to pure value investment strategy. Average abnormal return increases from 5.63% to 11.96%.

Table 5 shows portfolio yearly return, Indonesia stock index return, Portfolio return above index, Portfolio beta, Central bank interest rate, Portfolio expected return, and Portfolio abnormal return. Table 5 shows that incorporating growth to value investment strategy that is using P/B ratio enhances its performance. All actual returns are positive except in 2014, and in four out of five periods are higher than pure value investment strategy. Average actual return increases from 26.62% to 29.23%. Average portfolio beta does not change significantly, indicating no difference in risk. Abnormal returns are positive in three out of five periods. In four out of five periods they are higher compared to pure value investment strategy. Average abnormal return increases from 8.16% to 10.15%.

Table 6 compares performance among all the investment strategy. Value investment strategy results in higher actual and abnormal return compared to growth strategy. Specially, value investment using P/B ratio shows significantly higher actual return and abnormal return compared to growth investment strategy and value investment strategy using P/E ratio. The use of growth strategy enhances results of both value investment strategy using P/E ratio and P/B ratio. The effect is more pronounce in P/E ratio strategy where actual return increase averagely by 6.44% and abnormal return increase averagely by 6.33%. In P/B ratio strategy the increase of actual return is 2.61% and increase of abnormal return is 1.99%.

#### 4. Discussion

In agreement with various authors, it was found that value investing strategy yields above average return. The result is positive for both P/E ratio based strategy and P/B ratio based strategy with higher actual return and abnormal return in P/B ratio based strategy. In support to Fama and French (1992), Fama and French (1995), and Capaul et al (1998), it was found that portfolio formed based on value investment strategy has beta greater than one, suggesting an elevated risk. However it was also found that abnormal return is positive indicating that return of value investment strategy is not entirely due to assumption of higher risk; in support of Dreman and Lufkin (2000), Lakonishok et al (1994), Daniel et al (1998), Chan et al (2003), and LaPorta (1996). The results of this paper suggest that higher actual return in value investing is partly due to increased risk and partly due to market correction after overreaction to company distress.

The use of growth investment strategy based on EPS growth also results in higher than average return and positive abnormal return although in lesser extent compared to value investment strategy. This result explains the wide use of this strategy among investors as found by Liang (1999) and Jegadeesh, et al (2004).

Novelty of this paper is in using growth strategy to enhance value investment strategy. One weakness of value investment strategy is its inability to filter genuinely problematic stock from cheap stocks that are due to

market overreaction. By implementing growth strategy to portfolio of value stocks, stocks that both cheap and shows growth potential can be selected. Results show that this method significantly increases actual return and abnormal return of purely value investment strategy.

## 5. Conclusion

Value investing strategy, both using P/E ratio or P/B ratio as parameter, results in above average actual return and positive abnormal return. Stocks selected using this strategy has average beta greater than one, suggesting elevated risk level. However, the increase of actual return is more than compensate the increase in risk as abnormal return is positive. This phenomenon strongly suggest that above average return of value stocks is partly due to assumption of higher risk and partly due to market correction after previous overreaction to company distress.

The results of value investment, in term of actual return and abnormal return, are enhanced by application of growth investment strategy. Growth investment strategy acts as filter to remove cheap stocks that genuinely problematic from portfolio of value stocks.

## References

- Bauman, W. S., & Miller, R.E. (1997). Investor Expectations and the Performance of Value Stocks versus Growth Stocks. *The Journal of Portfolio Management*, 23(3), 57-68.
- Capaul, C., Rowley, I., & Sharpe, W. F. (1993). International Value and Growth Stock Returns. *Financial Analysts Journal*, 49(1), 27-36.
- Chan, L. K.C., Karceski, J., & Lakonishok, J. (2003). The Level and Persistence of Growth Rates. *The Journal of Finance*, 58(2), 643-684.
- Chan, L. K.C., & Lakonishok, J. (2004). Value and Growth Investing: Review and Update. *Financial Analysts Journal*, 60(1), 71-86.
- Dananjaya, Y., & Magdalena, R. (2015). Incorporating Growth to Value Investing. Proceeding of The 16th International Society for Business Innovation and Technology Management Conference (pp. 18). Bali, Indonesia: International Society for Business Innovation and Technology Management, Asia Pacific Business Innovation & Technology Management Society, Universitas Pelita Harapan Surabaya and De La Salle University Manila.
- Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). A Theory of Overconfidence, Self-Attribution, and Security Market Under- and Over-Reactions. *The Journal of Finance*, 53, 1839-1885.
- De Bondt, W. F. M., & Thaler, R. H. (1985). Does the Stock Market Overreact? *The Journal of Finance*, 40(3), 793-808.
- Dreman, D.N., & Lufkin, E.A. (2000). Investor Overreaction: Evidence That Its Basis Is Psychological. *The Journal of Psychology and Financial Markets*, 1(1), 61-75.
- Fama, E. F., & French, K. R. (1992). The Cross-Section of Expected Stock Returns. *The Journal of Finance*, 47(2), 427-465.
- Fama, E. F., & French, K. R. (1995). Size and Book-to-Market Factors in Earnings and Returns. *The Journal of Finance*, 50(1), 131-155.
- Jegadeesh, N., Kim, J., Krische, S.D., & Lee, C.M.C. (2004). Analyzing the Analysts: When Do Recommendations Add Value? *The Journal of Finance*, 59(3), 1083-1124
- Kothari, S.P., Shanken, J., & Sloan, R.G. (1995). Another Look at the Cross-Section of Expected Stock Returns. *The Journal of Finance*, 50(1), 185-224.
- Lakonishok, J., Shleifer, A., & Vishny, R.W. (1994). Contrarian Investment, Extrapolation, and Risk. *The Journal of Finance*, 49, 1541-1578.
- La Porta, R. (1996). Expectations and the Cross-Section of Stock Returns. *The Journal of Finance*, 51(5), 1715-1742.
- Liang, B. (1999). On the Performance of Hedge Funds. *Financial Analysts Journal*, 72-85.

Table 1. Result of value investing strategy using P/E ratio.

Low P/E Ratio Portfolio						
	2010	2011	2012	2013	2014	Average
Portfolio Return	56.68%	14.15%	21.20%	2.83%	27.80%	24.53%
Stock Index Return	32.45%	12.04%	19.88%	-3.50%	15.74%	15.32%
Portfolio Return Above Index	24.23%	2.11%	1.32%	6.33%	12.06%	9.21%
Portfolio Beta	1.30	1.30	1.38	1.16	1.58	1.34
Central Bank Rate	5.52%	6.46%	5.75%	6.77%	7.56%	6.41%
Expected Return	40.25%	13.69%	25.27%	-5.16%	20.48%	18.91%
Abnormal Return	16.43%	0.46%	-4.07%	7.99%	7.32%	5.63%

Table 2. Result of value investing strategy using P/B ratio.

Low P/B Ratio Portfolio						
	2010	2011	2012	2013	2014	Average
Portfolio Return	82.05%	23.65%	33.43%	7.56%	-13.61%	26.62%
Stock Index Return	32.45%	12.04%	19.88%	-3.50%	15.74%	15.32%
Portfolio Return Above Index	49.60%	11.61%	13.55%	11.06%	-29.35%	11.29%
Portfolio Beta	1.23	1.42	1.53	1.48	1.56	1.44
Central Bank Rate	5.52%	6.46%	5.75%	6.77%	7.56%	6.41%
Expected Return	38.64%	14.38%	27.37%	-8.43%	20.32%	18.46%
Abnormal Return	43.41%	9.27%	6.06%	15.99%	-33.93%	8.16%

Table 3. Result of growth investing strategy using EPS growth.

High EPS growth Portfolio						
	2010	2011	2012	2013	2014	Average
Portfolio Return	60.61%	35.83%	22.56%	-18.69%	17.70%	23.60%
Stock Index Return	32.45%	12.04%	19.88%	-3.50%	15.74%	15.32%
Portfolio Return Above Index	28.16%	23.79%	2.68%	-15.19%	1.96%	8.28%
Portfolio Beta	1.39	1.32	1.48	1.43	1.72	1.47
Central Bank Rate	5.52%	6.46%	5.75%	6.77%	7.56%	6.41%
Expected Return	42.95%	13.83%	26.66%	-7.92%	21.63%	19.43%
Abnormal Return	17.66%	22.00%	-4.10%	-10.77%	-3.93%	4.17%

Table 4. Result of growth incorporated investing strategy using P/E ratio.

Growth Incorporated Low P/E Ratio Portfolio						
	2010	2011	2012	2013	2014	Average
Portfolio Return	78.75%	28.28%	15.73%	2.55%	29.53%	30.97%
Stock Index Return	32.45%	12.04%	19.88%	-3.50%	15.74%	15.32%
Portfolio Return Above Index	46.30%	16.24%	-4.15%	6.05%	13.79%	15.65%
Portfolio Beta	1.29	1.32	1.34	1.23	1.78	1.39
Central Bank Rate	5.52%	6.46%	5.75%	6.77%	7.56%	6.41%
Expected Return	40.26%	13.83%	24.68%	-5.86%	22.12%	19.01%
Abnormal Return	38.49%	14.45%	-8.95%	8.41%	7.41%	11.96%

Table 5. Result of growth incorporated investing strategy using P/B ratio.

<b>Growth Incorporated Low P/B Ratio Portfolio</b>						
	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Average</b>
<b>Portfolio Return</b>	39.02%	37.77%	61.31%	11.00%	-2.96%	29.23%
<b>Stock Index Return</b>	32.45%	12.04%	19.88%	-3.50%	15.74%	15.32%
<b>Portfolio Return Above Index</b>	6.57%	25.73%	41.43%	14.50%	-18.70%	13.91%
<b>Portfolio Beta</b>	1.33	1.44	1.47	1.33	1.51	1.42
<b>Central Bank Rate</b>	5.52%	6.46%	5.75%	6.77%	7.56%	6.41%
<b>Expected Return</b>	41.34%	14.50%	26.52%	-6.89%	19.91%	19.08%
<b>Abnormal Return</b>	-2.32%	23.27%	34.79%	17.89%	-22.87%	10.15%

Table 6. Comparison among five investment strategies in term of actual return, return above stock index, and abnormal return

	<b>Average Portfolio Return</b>	<b>Average Portfolio Return Above Index</b>	<b>Average Abnormal Return</b>
<b>Low P/E Ratio Portfolio</b>	24.53%	9.21%	5.63%
<b>Low P/B Ratio Portfolio</b>	26.62%	11.29%	8.16%
<b>High EPS growth Portfolio</b>	23.60%	8.28%	4.17%
<b>Growth Incorporated Low P/E Ratio Portfolio</b>	30.97%	15.65%	11.96%
<b>Growth Incorporated Low P/B Ratio Portfolio</b>	29.23%	13.91%	10.15%