

THE APPLICATION OF DIVIDEND YIELD BASED INVESTMENT STRATEGY IN INDONESIA STOCK EXCHANGE

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Abstract— Stock market development in Indonesia is growing rapidly, coupled with the increase of Indonesia's investment rating by investment research and rating companies such as Moody's and S&P, it makes Indonesian stock market look sexy in the eyes of investors from various countries. The investment strategy that simple and applicable is often sought by investors to maximize the investors' portfolio. One investment strategy is evolving but still not widely used in Indonesia is an investment strategy based on dividend yield. Dividend yield based investment strategy such as the Dogs of the Dow is quite popular in the United States, but the use of this investment strategy in Indonesia is still quite uncommon. Therefore, the expected investment strategy in Indonesia may provide a favorable outcome. The main issue of writing this final project is whether the application of dividend yield based investment strategy on the Indonesia stock exchange, especially in LQ45 stock index so that it can produce such good results as on the Dow Jones stock index. The research to analyze the application of dividend yield based investment strategy used historical data of LQ45 stocks from period 2006 to 2011. Closing prices of the end of the year and the annual dividend of the companies are the components to calculate dividend yield. The portfolio is formed from the 10 highest dividend yield stocks. The research show that dividend yield based investment strategy can give high performance and also simple to apply. With an investment strategy that provides a profitable portfolio for investors, investment companies may also attract investors to invest in their products. Individual investor could also develop their portfolio using the investment strategy to maximize their profit themselves.

Keywords: Indonesian stock exchange, dividend yield, investment strategy.

I. INTRODUCTION

Investors' expectations of the Indonesian stock market are going to get the maximum result from their portfolios. Stock market development in Indonesia is growing rapidly, coupled with the increase of Indonesia's investment rating by investment research and rating companies such as Moody's and S&P, it makes Indonesian stock market look sexy in the eyes of investors from various countries. Obviously this makes the investment companies trying to attract as many investors to invest in their products.

The need to find a powerful investment strategy and provide attractive returns to the investors is very important in the competition between the investment companies. Investment firms are competing to attract investors by offering a portfolio of interesting advantages. The investment strategy is a step taken by the company in establishing a portfolio of investments that provide attractive returns to investors so that investors are willing to invest in their products.

Individual investor could also develop their portfolio using the investment strategy to maximize their profit themselves. The investment strategy becomes an important need for the investment nowadays.

The purpose of the use of various strategies is to make the investment portfolio in order to get maximum benefit for investors. The investment strategy that simple and applicable is often sought by investors to maximize their portfolio. One investment strategy is evolving but still not widely used in Indonesia is an investment strategy based on dividend yield. This dividend yield based investment strategy is quite simple to apply and also gives high performance returns.

Dividend yield based investment strategy is first introduced in Michael B. O'Higgins' book titled *Beating the Dow*. The strategy choose 10 (ten) stocks which have the highest dividend yield on the Dow Jones Industrial Average (DJIA) stock index. The investment strategy is called the Dogs of the Dow.

The main issue is whether the application of dividend yield based investment strategy on the Indonesia stock exchange, especially in LQ45 stock index so that it can produce such good results as on the Dow Jones stock index. The dividend yield based investment strategy such as the Dogs of the Dow is quite popular in the United States, but the use of this investment strategy in Indonesia is still quite uncommon. Therefore, the expected investment strategy in Indonesia, especially on the LQ45 stocks may provide a favorable outcome to meet investor's demand.

II. BUSINESS ISSUE EXPLORATION

A. Conceptual Framework

The conceptual framework for this final project can be described in the picture below.

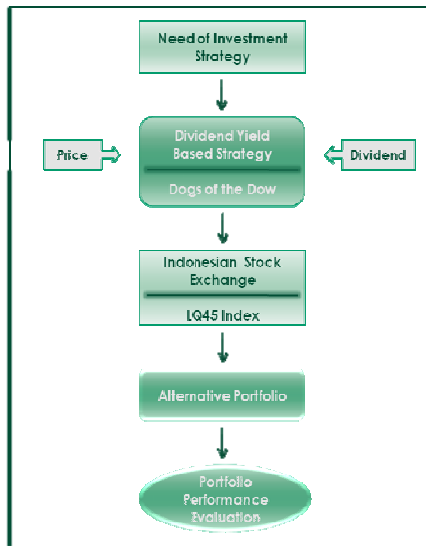


Figure 1 Conceptual Framework

is often sought by investors to maximize their portfolio. One investment strategy is evolving but still not widely used in Indonesia is an investment strategy based on dividend yield.

Dividend yield based investment strategy is first introduced in Michael B. O'Higgins' book titled *Beating the Dow*. The strategy choose 10 (ten) stocks which have the highest dividend yield on the Dow Jones Industrial Average (DJIA) stock index. The investment strategy is called the Dogs of the Dow. This dividend yield based investment strategy is quite simple to apply. The dividend yield investment strategy in this paper is inspired from Dogs of the Dow strategy.

Dividend yield has two components; price of the stock and the annual dividend. The two components are the advantages of stock investing. The dividend is a measure of the average worth of the company and the stock price, in contrast, fluctuates through the business cycle. This should mean that companies with a high yield, with high dividend relative to price, are near the bottom of their business cycle and are likely to see their stock price increase faster than low yield companies.

The dividend yield based investment strategy is still quite uncommon in Indonesia. Therefore, the expected investment strategy in Indonesia, especially on the LQ45 stocks may provide a favorable outcome. The application of dividend yield based investment strategy in the Indonesia stock exchange, especially in LQ45 stock index is expected to produce such good results as on the Dow Jones stock index.

The objective is to analyze the strength and accuracy of the established portfolio formed from dividend yield investment strategy in Indonesia stock

exchange, in this final project represented by the LQ45 stock index. The portfolio that formed from the dividend yield based strategy will be evaluated to see the portfolio performance in the LQ45 stock index, both in terms of the level of benefits and risks covered. Portfolio performance evaluation will show which portfolio give the best result to implement.

B. Method of Data Collection and Analysis

This study uses secondary data. Secondary data obtained from the institution or agency concerned, and has published such as through the internet. In addition, doing library research sourced from various books. This method is used as a guide in explaining the theories and analyzes data related to the discussion in this study.

Objects in this study are the stocks in the LQ45 stock index in the period of August 2006 – January 2007, August 2007 – January 2008, August 2008 – January 2009, August 2009 – January 2010, August 2010 – January 2011. Period used is the period in which the calculation of the dividend yield of stocks listed on LQ45 stock index was calculated based on the closing price of the end of the financial year.

C. Analysis of Dividend Yield Investment Strategy

Dividend yield based investment strategy is a strategy of picking stocks based on the dividend yield. This strategy is quite popular in the United States, but still uncommon in Indonesia. Dividend yield strategy offers strategy that is simple and applicable. Simplicity of the strategy can make every investor, individual or institutional; apply this strategy to improve their portfolio performance.

Not all companies pay dividends, so not all stocks have dividend yields. Stocks that don't pay dividend tend to be either smaller companies that plow their earnings to finance their growth or companies that are short on cash. The companies pay dividend from their earnings. Companies who pay dividend often be measured by its dividend.

Stock price fluctuates through the business cycle. This mean that company with a high yield, with high dividend relative to price, are near the bottom of their business cycle and likely to see their stock price increase faster than low yield companies.

Stocks' prices are fluctuate with earnings expectations from public investors but sustained by dividend payment made by cash flow. Cash flow explains a reality that is the key to dividend yield strategy: earnings can go down and dividends can go up.

III. BUSINESS SOLUTION

A. Alternative of Portfolio

Alternative solution to the business issue in this final project can be implemented in five alternative portfolios. The dividend yield strategy produce portfolios that are obtained from the highest dividend yield of LQ45 stocks. The portfolio has several alternatives of strategy, among others:

1. Top 10 Yield, obtained from 10 highest yield stocks of LQ45 stock index.
2. Top Low 5, from the 10 highest yield stocks of LQ45, the five highest priced is diminished, because the lowest the price, the more it will move up.
3. Best 4, from the Top Low 5, the lowest priced stock is diminished. When the lowest priced stock is diminished, the return is getting better because the lowest priced stock might be stock with some financial issues that takes longer to recover.
4. Fund Allocation 4, it is a variation from Best 4 portfolio. The lowest priced stocks get the most fund allocation about 40% and the rest of the stocks get 20% each.
5. PPP, this is not really a portfolio, but rather a single stock. It is the second lowest-priced high yielder (penultimate means next to the last). This variation put 100% of the portfolio to the lowest priced of Best 4. The result is the highest in average but also has high risk because of there's no diversification.

The data used for the alternative portfolio of dividend yield investment strategies is LQ45 stock index the second half because it coincided with the closure of financial year. The alternative portfolios above implemented in LQ45 for year 2012 are obtained from LQ45 stock index the second half of year 2011.

Dividend yield is calculated by taking the annual dividend per share and divide by the stock's price. The stock price that used in Dogs of the Dow is the close price of financial year which is the close price at the end of December. Dividend per share is the total dividends paid out over an entire year (including interim dividends but not including special dividends) divided by the number of outstanding ordinary shares issued. Total dividend of the entire year is the sum of all dividends distributed including the final dividend that is distributed after the company released annual report.

To calculate the dividend yield of the year before the total dividend is paid out, then used estimated annual dividend. To calculate estimated annual dividend, used the formula:

$$D_1 = D_0 (1 + g)$$

D_1 = dividend next year

D_0 = dividend previous year

g = dividend growth

To calculate the dividend growth, it is used the formula:

$$g = ROE \times (1 - \text{Dividend Payout Ratio})$$

The alternative portfolio of dividend yield investment strategy formed from dividend yield calculation above, among others:

1. Top 10 Yield

Table 1 Top 10 Yield Portfolio

No	CODE	COMPANY	DIVIDEND	CLOSE PRICE	DIVIDEN D YIELD
1	BJBR	Bank Pembangunan Daerah Jabar & Banten Tbk	64.77	910	7.12%

No	CODE	COMPANY	DIVIDEND	CLOSE PRICE	DIVIDEN D YIELD
2	INCO	International Nickel Indonesia Tbk	212.60	3,200	6.64%
3	TINS	Timah (Persero) Tbk	106.80	1,670	6.40%
4	PGAS	Perusahaan Gas Negara (Persero) Tbk	190.36	3,175	6.00%
5	TLKM	Telekomunikasi Indonesia Tbk	390.44	7,050	5.54%
6	ANTM	Aneka Tambang (Persero) Tbk	80.76	1,620	4.99%
7	CPIN	Charoen Pokphand Indonesia Tbk	103.79	2,150	4.83%
8	AALI	Astra Agro Lestari Tbk	950.04	21,700	4.38%
9	HRUM	Harum Energy Tbk	270.18	6,850	3.94%
10	INDY	Indika Energy Tbk	80.20	2,175	3.69%

2. Top Low 5

Table 2 Top Low 5 Portfolio

No.	CODE	COMPANY	PRICE
1	BJBR	Bank Pembangunan Daerah Jabar & Banten Tbk	910.00
2	ANTM	Aneka Tambang (Persero) Tbk	1,620.00
3	TINS	Timah (Persero) Tbk	1,670.00
4	CPIN	Charoen Pokphand Indonesia Tbk	2,150.00
5	INDY	Indika Energy Tbk	2,175.00

3. Best 4

Table 3 Best 4 Portfolio

No.	CODE	COMPANY	PRICE
1	INDY	Indika Energy Tbk	2,175.00
2	CPIN	Charoen Pokphand Indonesia Tbk	2,150.00
3	TINS	Timah (Persero) Tbk	1,670.00
4	ANTM	Aneka Tambang (Persero) Tbk	1,620.00

4. Fund Allocation 4

Table 4 Fund Allocation 4

No.	CODE	COMPANY	PRICE
1	INDY	Indika Energy Tbk	2,175.00
2	CPIN	Charoen Pokphand Indonesia Tbk	2,150.00
3	TINS	Timah (Persero) Tbk	1,670.00
4	ANTM	Aneka Tambang (Persero) Tbk	1,620.00

5. PPP

Table 5 PPP

No.	CODE	COMPANY	PRICE
1	ANTM	Aneka Tambang (Persero) Tbk	1,620.00

B. Analysis of Portfolio Performance

Any investment strategy that does is to expect profit, as well as dividend yield investment strategy. To find out whether a dividend yield investment strategy gave a high and interesting profit, testing of the portfolios are formed based on historical data available. In addition, testing of the portfolios risk of the dividend yield portfolio is also formed from the historical data.

The return on any portfolio p can be calculated as

$$R_p = \sum_{i=1}^n w_i R_i$$

R_p = the return on the portfolio

= the portfolio weight for the *i*th security
 = the return on the *i*th security
 n = the number of different securities in the portfolio
 From the historical data of five years back, the Dividend Yield strategy portfolio gave return as follows:

Table 6 Dividend Yield Strategy Return

No	DIVIDEND YIELD STRATEGY	RETURN						
		2007	2008	2009	2010	2011	TOTAL	AVRG
1	TOP 10 YIELD	83.32 %	52.64 %	144.76 %	36.62 %	-11.66%	200.40%	20.73 %
2	TOP LOW 5	101.31 %	42.10 %	110.81 %	45.62 %	-17.30%	198.34%	24.23 %
3	BEST 4	122.09 %	36.51 %	119.00 %	59.25 %	-13.07%	250.77%	33.72 %
4	FUND ALLOC. 4	145.42 %	38.59 %	128.23 %	65.06 %	-18.37%	281.74%	35.89 %
5	PPP	178.29 %	46.93 %	165.15 %	88.28 %	-39.58%	345.22%	34.82 %

From the data above, it is shown that the dividend yield investment strategy give high return using geometric average return calculation and considering transactional cost of selling (0.3%) and buying (0.2%). The portfolio gave minus return in year 2008 and 2011. In these years, the economic condition was in crisis and the stock prices were going down. The year 2009 or the following year after 2008, the portfolio gave high return as the economic condition got better. The comparison of dividend yield investment strategy in each variation with Indonesian stock indices (IHSG and LQ45) can be shown in figure below.

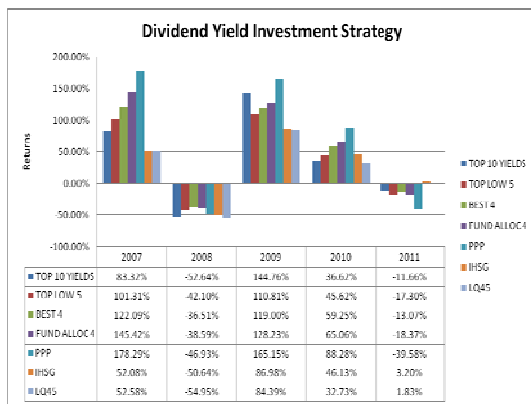


Figure 2 Dividend Yield Returns

To see the portfolio performance of the investment strategy, the assessment of portfolio performance, both in terms of the level of benefits and risks covered, must be tested. The most often used measures of portfolio performance are the Composite (Risk-Adjusted) Measures of Portfolio Performance which combining return and risk into one calculation.

William Sharpe introduced a risk-adjusted measure of portfolio performance called the reward-to-variability ratio or also known as Sharpe ratio. Sharpe's measure of portfolio performance calculated as the ratio excess portfolio return to the standard deviation. Sharpe ratio can be defined as

= return of portfolio
 = risk free rate
 = standard deviation of portfolio

Return of the portfolio should be reduced by the risk free rate to get the excess portfolio return. Risk free rate assumption used for this calculation is the SBI (Bank Indonesia) rate, because the SBI rate is the benchmark risk free investment in Indonesia. SBI rate for each year of testing may vary according to the policy of Bank Indonesia.

Table 7 SBI Rate

Year	2007	2008	2009	2010	2011
SBI Rate	8.00%	9.25%	6.50%	6.50%	6.00%

Standard deviation of the portfolio from period 2007 – 2011 is calculated from the average return of the period. The excess return is calculated from portfolio return subtracts to risk free rate in each year. Sharpe ratio of period 2007 – 2011 is calculated from the average excess return of period 2007 – 2011 divided by standard deviation of the portfolio from period 2007 – 2011. Here is the result of Sharpe ratio on dividend yield strategy portfolio based on the return, risk free rate, and standard deviation from the tables above:

Table 8 Sharpe Ratio

No	DIVIDEND YIELD STRATEGY	AVERAGE EXCESS RETURN	STDEV	Sharpe Ratio
1	TOP 10 YIELD	11.27%	69.93%	0.16
2	LOW-PRICE 5	15.44%	61.71%	0.25
3	BEST 4	24.99%	65.89%	0.38
4	FUND ALLOC. 4	26.91%	74.78%	0.36
6	PPP	24.83%	96.95%	0.26

From the table above, Sharpe ratio gives the higher number on Fund Allocation 4 portfolio and Best 4 portfolio, followed by PPP (Penultimate Profit Projects) in the second higher. The lower number of Sharpe ratio is on Top 10 Yield portfolio. The best average return is PPP average return, followed by Fund Allocation 4 portfolio and Best 4 portfolio.

IV. CONCLUSION AND IMPLEMENTATION PLAN

The conclusions of this final project work are as follows:

1. Dividend Yield based strategy can simply be applied in Indonesian stock exchange especially in LQ45 stock index by selecting 10 stocks that have the highest dividend yield.
2. Dividend yield strategy investment strategy does beat the market in average for five year historical data analysis, among others:
 - a) Top 10 Yield gives return 20.73% and beat IHSG 4.55%.

- b) Top Low 5 gives return 24.23% and beat IHSIG 8.05%.
 - c) Best 4 gives return 33.72% and beat IHSIG 17.54%.
 - d) Fund Allocation 4 gives return 35.89% and beat IHSIG 19.71%.
 - e) PPP gives return 34.82% and beat IHSIG 18.64%.
3. Fund Allocation 4 portfolio gives the best return in average from the five portfolio variations of dividend yield strategy. The best performance by Sharpe Ratio is formed from Best 4 portfolio followed by Fund Allocation 4 portfolio.

From his book *Beating the Dow*, Michael O'Higgins wrote ten simple steps to implement the basic method of Dogs of the Dow investment strategy. The implementation of dividend yield investment strategy in Indonesia is not far from the ten simple steps. Steps to implement dividend yield strategy into stock portfolio, among others:

1. Prepare a portfolio planning worksheet. Make a list of stocks from LQ45 stock index to prepare the portfolio planning worksheet.
2. List the closing prices of the end of the year from each stock.
3. List the dividend of each stock. Dividend of companies often paid after the annual report, the estimated dividend can be calculated using estimated dividend growth of the company.
4. Calculate the dividend yields of each stock.
5. Make ranking from the highest to the lowest yields. Ten highest yield stocks would be the Top 10 Yield portfolio.
6. Identify the lowest-priced high yielders and eliminate the other five highest-priced stocks. These five lowest-priced stocks would be the Top Low 5 Portfolio.
7. Select the alternative portfolio, among others:
 - a) Top 10 Yield portfolio
 - b) Top Low 5 portfolio
 - c) Best 4 portfolio
 - d) Fund Allocation 4 portfolio
 - e) PPP (Penultimate Profit Prospect)
8. Place the order. Buy the stocks in accordance to the choice of portfolio alternative.
9. Take stock and revamp a year later. The implementation step will be repeated again in

the next following year. If the stocks in the portfolio alternative are changed, sell the stocks that not included in the new portfolio and buy the stocks in accordance to the new portfolio.

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