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Optimizing Active and Passive Stocks Portfolio Formed Tobin's Q and Price Earning Ratio Model Stocks on Kompas Index-100 Period 2012-2017

Riko Hendrawan¹ and Dwi Fitrizal Salim²

Faculty of Economics and Business, Telkom University

Abstract: Many newcomers investor in Indonesia Stock Exchange (IDX) are not knowing how to choose a good stock / bluechip in details. Meanwhile, IDX is campaigning Yuk Tabung Saham and opening many investment galleries in various Indonesian Universities. The purpose of this research is to determine the simulation results of portfolio formation with PER valuation and Tobin's q model in Kompas Index-100 period 2012-2017. Form of the portfolio will be divided into 6 categories - ie. high PER, medium PER, low PER, High Tobin's q, medium Tobin's q, and low Tobin's q - and using 45 samples in each period, which means in each category will consist of 15 shares. This research also use an active annual strategy, an active mid-year strategy, and a 5-year passive strategy, then conduct performance test using sharpe, treynor, and jensen methods.

The result of this research is the consistent value ratio of medium Tobin's q with relatively low risk and the return rate of the portfolio is above the IDX Composite (ICI) market. The performance test in each portfolio formed by the PER valuation and Tobin's q model measured using the sharpe, treynor, and jensen methods shows that the active mid-year strategy has the best performance coupled with annual passive strategy, and lastly 5-year passive strategy.

Keywords: Jensen, PER, sharpe, Tobin's q, Treynor

1. INTRODUCTION

Indonesia's economic conditions has increased in recent years. Even though there is no uncertainty of global economic condition, Indonesia has better performance than the other developing countries where the average of growth over the last 10 years is 5,6 %. Many countries, especially *high middle income country*, where the role of consumption to be one of the driving wheel of economic growth as well as in Indonesia. Due to these conditions, Indonesia will continue to grow and will encourage new investment, it can be seen from projected credit growth which is higher than the year 2016 of 7.78%. The existence of the

capital market plays a major role for the economy of a country, by providing facilities to bring together the two parties, those who have excess funds and need funds. By investing the excess funds that is owned by the investors, the investors expect to get reward from the submission of those funds. While from the parties who need funds, the availability of funds from the investors allows the company to get it without waiting for the availability of funds from the results of the company's operations. (Hartono, 2013: 30).

Indonesia Stock Exchange (IDX) is an institutions that manage the investment, one of the stock exchanges in Indonesia. Some of developing countries such as America and Britain, are the countries which give impact to the Indonesian capital market, it is because the ownership of domestic investors to the stocks in the IDX recorded 45.5% while foreign 54.5%. From these data, the investors in the stock market are dominated by foreign investors. The increasing number of domestic investors are not separated from the performance of the IDX itself, whereas the organizer of the Indonesian stock market many activities that essentially educate and attract the public interest to invest, starting from the construction of branch offices from Aceh to Papua. In addition, IDX also organizes the capital market seminars to campus. Currently IDX also promotes "Yuk Nabung Saham" by advertising it in the newspaper, internet, and television by inviting the capital market leaders, company, community, and the securities company that opened the bell of the "Yuk Nabung Saham" campaign.

The opening of the investment gallery at the university shows that the high willingness of students to know about the Indonesian capital market, it is also appreciate by the university. The number of new young investors among college, such as the university students, need the education or training about how to analyze and choose stocks that have good prospects in the future. Through reference to the simulation of selecting a good stock then the young investors among the university students will be easier to determine their choice in the transaction such as sale or buy stock in the Indonesian capital market. In the Indonesian capital market is known a number of indexes such as Kompas index-100, Kompas Index-100 is a collaboration between Kompas daily newspaper and Indonesia Stock Exchange.

In a fundamental analysis can be used Tobin's q ratio method where the market value of a company is the total value of the stock market added with long-term debt instruments and divided by the book value of equity added with the amount of long-term debt. Where if -q value less than 1 then the company is not optimal in utilizing all assets which is owned by the company, and if the q-value is greater than 1 then the company is optimal in tapping the asset in obtaining profit for the company. (Horne, 2002: 365)

In addition to the using of fundamental approaches such as Tobin's q and PER in the formation of stock portfolios to minimize risks, we need timing entry and timing exit market. There are 2 (two) strategies that can be used by the investor that are active strategy and passive strategy. (Zubir, 2011: 271).

The research that also has similarities with this current research is a research conducted by Wolfe and Sauaia (2003) which confirms Tobin's q as one of measuring tool of a company summary or success, Wolfe and Sauaia also suggested the need for a simulation using Tobin's q as one of the company's performance measurements and augmented by a useful Altman Z-Score calculation whether the company is healthy from bankruptcy or not. Reaffirmed again by Sum (2014) with PER changes in the S & P 500 index significantly affected changes in Tobin's ratio q. Kasmawati (2016) uses Tobin's q model in her research where the significant results that are obtained by the company through utilizing all equity to earn corporate profits, so that the company can increase the investor confidence about the company's future.

Hidayat and Hendrawan (2017) portfolio established low PER, low PEG, and medium PEG ratios consistently provide returns above the market prices. It shows that although the portfolio strategy used is different but the three portfolios which contain undervalued stocks by *relative valuation* can give a *return* above market *return*, that is IHSG. The optimal portfolio is consistently able to show superior performance when compared to the index of the market index that is IHSG.

Based on those background, the writer will conduct a research that aims for simulation in the stock selection by using the Tobin's q model and PER, so the writer will do this reasearch by giving the title "Optimizing Active and Passive Stocks Portfolio Formed Tobin's Q and Price Earning Ration Model Stocks on Kompas Index-100 Period 2012-2017"

Based on the research background, the research questions in this study are:

1. How is the result of optimal portfolio formation of active and passive stock with PER approach and Tobin's q model on stocks in Kompas index 100 period 2012-2017?
2. How the performance evaluation simulation results of sharpe, treynor, and jensen methods on the optimal portfolio of active and passive stocks with PER approach and Tobin's q model on stocks in Kompas index 100 for 2012-2017 period?
3. How is the result of comparison between *return* and risk on optimal portfolio simulation of active and passive stock with PER approach and Tobin's q model on stock in Kompas index 100 period 2012-2017?

The purpose of this study are:

1. Knowing the result of optimal portfolio formation of active and passive stock with PER approach, and Tobin's q model on stocks in Kompas index 100 period 2012-2017.
2. Knowing the performance simulation results of sharpe, treynor and jensen methods on the optimal portfolio of active and passive stocks with PER approach and Tobin's q model on stocks in Kompas index 100 for 2012-2017 period.
3. Knowing the result of comparison of return and risk on optimal portfolio simulation of active and passive stock with PER approach and Tobin's q model on stock Kompas index 100 period 2012-2017.

2. THE FOUNDATION OF THEORY AND METHODOLOGY

Portfolio Theory

Measuring the return and risk for a single security is important, but for the portfolio manager, the return and risk of all securities are required. Where the management of portfolio risk does not have to be equal to the weighted average of risk from all single securities. Portfolio risk can be even smaller than the risk of each single security. Hartono (2013: 253)

Risk and return

"Low risk, low return", it is a phrase that is often heard besides "high risk, high return" in the world of investment, in the process of investment especially in capital markets the smaller the risk then the return

earned by a small investor as well and the other way around. Risk is a form of uncertainty about a situation that will occur in the future with decisions taken based on various considerations at this time. Risks in making investment decisions always seek to minimize the risks that arise, both long-term risks and short-term risks. Fahmi (2014: 449).

Tobin's q Model

The Tobin's q model was first introduced by one of James Tobin's economists, where Tobin's ratio q is the market value of the firm's ratio added with the debt contribution divided by book value plus the company's debt. Value Q more than 1 then the value of the company is greater than the value of the company's assets, If the value of q is less than one then the value of the firm's assets is greater than the market value of the enterprise. Horne (2002: 365).

Valuation Model

The stock valuation approach can not be separated by fundamental analysis, according to Husnan (2015: 277) fundamental analysis is analysis that conducted for the valuation of a company based on the financial statements as well as economic conditions and similar industries in a country that affect the sustainability of the company's business in the future. The Valuation Model is mechanism to change a series of economic variables or predicted firm variables (observed) into estimates of stock prices. The observed economic variables such as corporate profits, dividends, PER, and other variables. Financial data is the main source of information used by investors to conduct valuations of an open company. Manurung (2011: 75) Approach Price Earning Ratio (PER) is a ratio that shows the comparison of stock prices to net income per stock of a company. Securities analysts prefer to use PER in assessing the fairness of stock prices. Shares that have a high PER value are suspected to have high stock prices.

Portfolio Stock

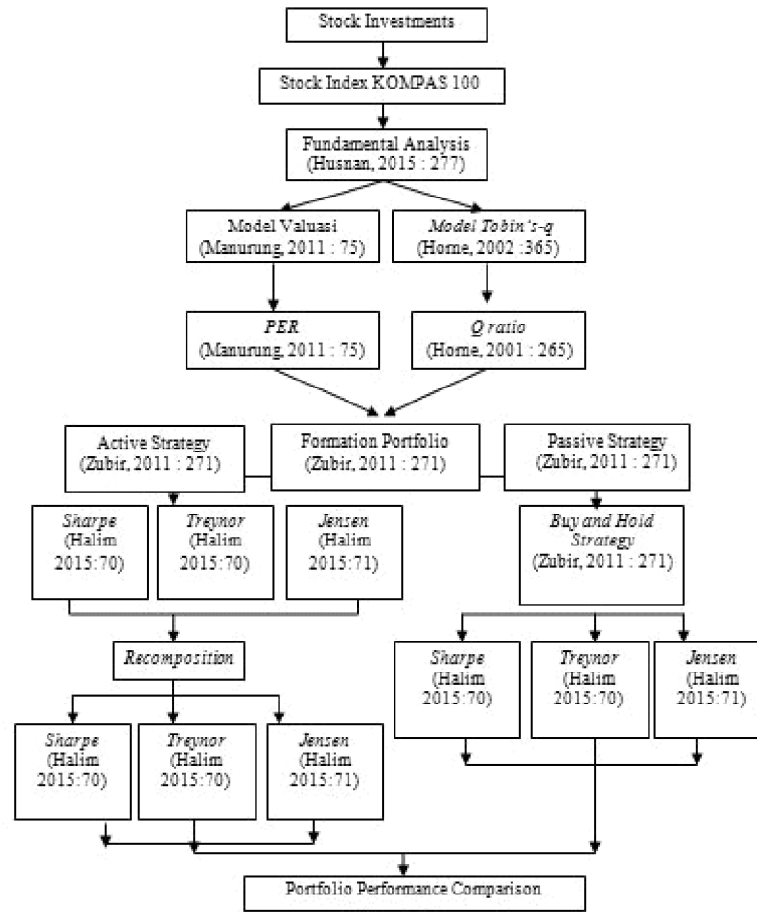
The stock portfolio is an investment consisting of several different company stocks which is expected that if one of the stock decreases while the other increases, and then the investment is not suffering losses. In addition, the correlation between the return of one stock and the other stock will also reduce the variance of the return of the picture. Zubir (2011: 2).

Sharpe, Treynor, dan Jensen Measure

Sharpe measure, measuring the risk from the excess return not the total return on the portfolio based on the standard deviation, since the *sharpe measure* measures the return on the risk-free interest rate investment. Treynor measure is a measure of portfolio performance evaluation using excess return on beta, that is risks that can not be eliminated through diversification. This method assumes that if a portfolio is well diversified then the risk in the portfolio is systematic risk, which is the line that connects the market portfolio with a risk-free investment opportunity, in which risks are expressed in beta (= market risk or systematic risk). Zubir (2011: 277).

Framework

The framework in this research can be represented by Picture 2.1 as follows:



Picture 2.1 Framework

RESEARCH METHODOLOGY

Based on the method, this research is using quantitative method, Sugiono (2015: 13). As for the purpose, this research includes descriptive verification research, Latief, Treanati, and Rochaety (2007: 17). Based on the type of inquiry, this study is comparative or group differences. Based on the timing of the implementation, this study included research with cross-sectional and time series studies, Indrawati (2015: 117). The population in this study is all company's stock that listed on the Kompas index 100 period 2012-2017.

Taking the sample is conducted by *purposive sampling* with the certain criteria, such as:

1. Stocks that are constantly included in the Kompas Index 100 during the period 2012-2015 , 65 stocks
2. The availability of stock price data during the period 2012-2015, as the material for the calculation of the return, 65 stocks
3. The availability of financial statements issuers data during the period 2012- 2017 , 50 stocks.
4. Positive EPS value on each listed stock of Kompas index 100 during the period 2012-2015 is 45 stocks.

Based on the criteria above, the stock that included in the sample of this study there are 45 stocks

The Establishment of Optimal Portfolio Based on Valuation model

The data analyst technique that is used in this study is a quantitative analysis, the calculation is using Ms.Excel program, that is raw data on financial statement such Earning Per Share (EPS), and also stock price is processed to know the value of valuation model that is Price Earning to Ratio (PER) and Tobin's q model. The magnitude of these ratios will be used as the basis for the formation of portfolio.

Calculate the value scale of *valuation* that is PER value, by following the formula as follows:

$$PER = \frac{\text{Stock Price}}{\text{Earning Per Share}}$$

Model Tobin's q

Calculates the value scale of Tobin's q, by the following formula (Horne, 2001: 365):

$$Tobin's\ q = \frac{\text{Market Price} + \text{Total Long} - \text{term liability}}{\text{Book Value Equity} + \text{Total Long} - \text{term liability}}$$

The criteria for establishing a portfolio are described as below:

1. Portfolio is established based on the stock ranked, based on 6 categories they are: the highest, middle and lowest ratio, as follows:

High PER ratio, high Tobin's q ratio ,

Medium PER ratio, medium Tobin's q

Low PER ratio, low Tobin's q

The divisions into those 6 categories are based, the valuation model can be compared with the issuer of the same class, so that becomes a measuring tool or benchmarks of a valuation of *valuation model* is high, medium, and low is the value or the ratio of the valuation model of the stock itself.

2. From the first point above, so in the default setting condition, each portfolio is assumed to consist of 3 stocks for each portfolio category, this is because the number of samples in this study there are 45 stocks and divided equally in each category.

Portofolio Weighting

In this research, using weighted average weights according to the market capitalization of each stock, the way to calculate it is by summing up all the capitalization of the stock market in the portfolio and making it as a divisor, then the market capitalization of each issuer in the portfolio is divided by the divisor then the result of the weighting of the portfolio. Hendra (2008)

To determine the proportion of each the selected securities (W_i) in the optimal portfolio can be done by the following this formula:

$$W_i = \frac{Z_i}{\sum Z_j}$$

W_i = Proportion of i-securities

Z_i = Stock Market Capitalization i

$\sum z_j$ = Total Stock Market Capitalization

Active Portofolio Strategy

Active portfolio strategy allows writers to replace the stocks based on changes in the PER *valuation* ratio and Tobin's q model in annual and semester periods, so when there is a change of magnitude sequence of PER valuation ratio and Tobin's q model in stocks that is used as a sample, then the composition of stocks in the portfolio will change according to the ratio automatically. As for the proportion of weighted stocks in accordance with the amount of market capitalization of each stocks in the portfolio.

Passive Portofolio Strategy

While the passive portfolio strategy is assumed that the writer do *buy and hold strategy* in the long time period, that is during the period of this observation took place, within five years period, the portfolio will be established in the early period of observation on February 2012 then its performance will be evaluated at the end of observation period on January 2017.

This passive portfolio strategy is also called constant compotition portfolio strategy, which is using default settings and the composition of the stock in it's does not changed until this passive portfolio is diluted, but in determining the proportion of applying the weight according to the market capitalization of each stock, the greater the market capitalization of a share the greater the proportion of the share in the portfolio.

Measuring Performance of Stock Portfolio with Sharpe, Treynor and Jensen Methods

1. Measuring portfolio performance using Sharpe method, by following a formula:

$$S_p = (R_p - R_f) / \sigma_p$$

S_p = Sharpe performance index.

R_p = expected return of stock or portfolio

R_f = risk free rate of return

σ_p = standard deviation return or portfolio

2. Measuring portfolio performance using Treynor method, by following a formula:

$$T_p = (R_p - R_f) / \beta_p$$

T_p = treynor performance index

R_p = portfolio return

R_f = risk free rate of return

β_p = beta portfolio

3. Measuring portfolio performance using Jensen method, by following a formula:

$$a_p = R_p - [R_f + (R_m - R_f) b_p]$$

- ap = differential return
- Rp = expected return portfolio
- Rf = risk free rate of return
- Rm = expected return market portfolio
- bp = beta portfolio

If the value of alpha jensen is positive and greater, so the results of its performance defeat the market performance.

3. DISCUSSION AND RESEARCH RESULTS

Portofolio Return and Market Return

The result of annual return calculation uses the average return method, it's obtained from the above portfolios. Portfolio performance data can be compared with market performance, it can be seen in the following table:

Table 3.1
Passive Portfolio Ranking Based on 5 Year Return

<i>Portofolio</i>	<i>Return 5 Tahun</i>	<i>Ranking</i>	<i>Average Return</i>
Medium TOBIN'S q	74.36%	1	56,14%
Medium PER	69.78%	2	
Low TOBIN'S q	64.31%	3	
High PER	60.37%	4	
Low PER	49.15%	5	
High TOBIN'S q	39.42%	6	
IHSG	35.57%	7	

Source: Data Processed

Based on the rank of passive portfolio strategy, based on the 5 year return it can be seen that the portfolio that gives the highest return is the portfolio formed by medium Tobin's q ratio, and the lowest

Table 3.2
Active Portfolio Ranking Based on Annual Return

<i>Portofolio</i>	<i>Return 5 Tahun</i>	<i>Ranking</i>	<i>Average Return</i>
High TOBIN'S q	108.44%	1	78,15%
Low PER	92.09%	2	
Low TOBIN'S q	90.01%	3	
Medium TOBIN'S q	88.70%	4	
Medium PER	80.42%	5	
High PER	52.03%	6	
IHSG	35.38%	7	

Source: Data Processed

portfolio return is formed by high Tobin's q ratio, 6 portfolios that beat the performance of IHSG returns, it shows that the performance of IHSG can be defeated by all the portfolios formed by passive strategy for 5 years.

Based on the rank of annual active portfolio strategy, based on the 5 year return it can be seen that the portfolio that gives the highest return is the portfolio formed by high Tobin's q ratio, and the lowest portfolio return is formed by the high PER ratio, while there are 6 portfolios that beat the performance of IHSG return.

Table 3.3
Active Portfolio Ranking Based on Semester Return

<i>Portofolio</i>	<i>Return 5 Tahun</i>	<i>Ranking</i>	<i>Average Return</i>
Medium TOBIN'S q	77.44%	1	51,17%
Medium PER	61.61%	2	
Low TOBIN'S q	58.23%	3	
Low PER	50.03%	4	
High TOBIN'S q	42.36%	5	
IHSG	35.30%	6	
High PER	33.20%	7	

Source: Data Processed

Based on the ranking of active portfolio strategy semesters, based on the 5 year return it can be seen that the portfolio that gives the highest return is the portfolio formed by Tobin's q medium ratio, and the lowest portfolio return is formed by the high PER ratio, while there are 5 portfolio that defeat the performance of IHSG return, and 1 portfolio has return under IHSG return.

For potofolio that is formed based on Tobin's q return model which got above the market return of IHSG so it is proven that the companies that have value Tobin's ratio q more than > 1 earned by the company, then the company has been optimal in utilizing the assets that they have to generate profits for the company so that the stock price of the company grows up.

The comparison of returns from the three portfolio strategies between passive strategy, active annual strategy, and active smesters strategy shows that active annual strategies provide the highest returns, followed by passive strategies, then the active smesters strategies, and the return of each portfolio strategy does not much different, even a passive portfolio strategy is able to provide a return on the active smesters strategy portfolio. So when the global economic downturn in 2015 where in that year the average of portfolio get a negative value then the strategy of *buy and hold* is a pretty profitable option.

Portofolio Risk and Market

Table 3.4
Passive Portfolio Ranking Based on 5 Year Risk

<i>Portofolio</i>	<i>Risk 5 Tahun</i>	<i>Ranking</i>	<i>Average Risk</i>
Low TOBIN'S q	19.12%	1	15,25%
Low PER	17.95%	2	
High TOBIN'S q	15.40%	3	
Medium PER	14.67%	4	
Medium TOBIN'S q	13.63%	5	
High PER	13.21%	6	
IHSG	12.80%	7	

Source: Data Processed

Based on the rank of passive potofolio strategy, based on 5-year risk , it can be seen that having the highest risk of low Tobin's q and lowest risk portfolio formed by the ratio of IHSG, it indicates that the risk obtained by the portfolio is above than the market risk.

Table 3.5
Active Portfolio Rankings Based on Annual Risk

<i>Portofolio</i>	<i>Risk 5 Tahun</i>	<i>Ranking</i>	<i>Average Risk</i>
Low PER	20.23%	1	15,21%
Low TOBIN'S q	18.80%	2	
Medium PER	15.67%	3	
Medium TOBIN'S q	13.76%	4	
High TOBIN'S q	13.58%	5	
IHSG	12.81%	6	
High PER	11.60%	7	

Source: Data Processed

Based on the rank of active annual portfolio strategy, based on 5-year risk, it can be seen that the highest risk is low PER and low risk portfolio formed by high PER ratio, it indicates the portfolio performance is quite good as overall portfolio has a bigger risk than market risk.

Table 3.6
Active Portfolio Rankings Based on Semesters Risk

<i>Portofolio</i>	<i>Risk 5 Tahun</i>	<i>Ranking</i>	<i>Average Risk</i>
Low TOBIN'S q	20.92%	1	16.88%
Low PER	19.41%	2	
Medium TOBIN'S q	16.77%	3	
High TOBIN'S q	16.23%	4	
Medium PER	16.10%	5	
High PER	15.73%	6	
IHSG	13.04%	7	

Source: Data Processed

The comparison of the risk level from the three portfolios is, occupy the highest risk of active semesters strategy of 16.88%, 5 year passive strategy of 15.25%, and last active annual strategy of 15.21%. But in the annual strategy has a small risk level but get an optimal return whereas the obtained return of 78.15% with a risk level of 15.21%.

Risk Adjusted Return Portfolio and Market

Table 3.7
Passport Portfolio Ranking Based on Sharpe 5 Years

<i>Portfolio</i>	<i>Sharpe</i>	<i>Ranking</i>	<i>Average Sharpe</i>
Medium TOBIN'S q	2.109%	1	1.373%
Medium PER	1.915%	2	
Low TOBIN'S q	1.573%	3	
High PER	1.347%	4	
IHSG	1.047%	5	
Low PER	0.970%	6	
High TOBIN'S q	0.652%	7	

Source: Data Processed

Based on the passive 5-year portfolio strategy, based on the sharpe, it can be seen that the portfolio that has the highest sharpe value is the portfolio formed by Tobin's q ratio and the lowest sharpe portfolio formed by high Tobin's q ratio, there are 4 portfolios that have sharpe values above the sharpe value of IHSG, while only 2 other portfolios have the value of sharpe which is below the value of sharpe IHSG.

Table 3.8
Passive Portfolio Rankings Based on Treynor 5 Years

<i>Portfolio</i>	<i>Treynor</i>	<i>Ranking</i>	<i>Average Treynor</i>
Medium TOBIN'S q	0.041%	1	0,026%
Medium PER	0.036%	2	
High PER	0.033%	3	
Low TOBIN'S q	0.029%	4	
Low PER	0.019%	5	
High TOBIN'S q	0.015%	6	
IHSG	0.011%	7	

Source: Data Processed

Based on the passive 5-year portfolio strategy , based on treynor, it can be seen that the portfolio that has the highest treynor value is the portfolio formed by medium Tobin's q and the lowest treynor portfolio formed by the market ratio of IHSG, there are 6 portfolios that have the treynor value above the treynor value of IHSG, while no other portfolio has the amount of treynor value which is under the treynor value of IHSG. It shows that the portfolio is well diversified against the risk of market volatility.

Table 3.9
Passive Portfolio Ranking Based on Jensen 5 Years

<i>Portofolio</i>	<i>Jensen</i>	<i>Ranking</i>	<i>Average Jensen</i>
Medium TOBIN'S q	0.031%	1	0,017%
Medium PER	0.027%	2	
Low TOBIN'S q	0.022%	3	
High PER	0.022%	4	
Low PER	0.010%	5	
High TOBIN'S q	0.004%	6	
IHSG	0.000%	7	

Source: Data Processed

Based on the passive 5-year portfolio strategy, based on Jensen, it can be seen that the portfolio that has the highest value of Jensen is the portfolio formed by medium Tobin's q ratio and the lowest Jensen portfolio formed by high Tobin's q ratio, there are 6 portfolios that have the value of Jensen above the Jensen score, while none other portfolios have the value of Jensen that is below the Jensen IHSG value.

Table 3.10
Active Portfolio Rankings Based on Annual Sharpe

<i>Portofolio</i>	<i>Sharpe</i>	<i>Ranking</i>	<i>Average Sharpe</i>
High PER	3.37%	1	2,18%
High TOBIN'S q	2.97%	2	
Medium TOBIN'S q	2.21%	3	
Low TOBIN'S q	1.91%	4	
IHSG	1.85%	5	
Medium PER	1.83%	6	
Low PER	1.12%	7	

Source: Data Processed

Based on the rank of active annual portfolio strategy, based on Sharpe, it can be seen that the portfolio that has the highest Sharpe value is the portfolio formed by the high PER ratio and the lowest Sharpe portfolio formed by the low PER ratio, there are 4 portfolios that have the Sharpe value above the Sharpe IHSG value, while the other two portfolios have scale value of Sharpe which is under the value of IHSG Sharpe.

Table 3.11
Active Portfolio Rankings by Annual Treynor

<i>Portofolio</i>	<i>Treynor</i>	<i>Ranking</i>	<i>Average Treynor</i>
High PER	0.066%	1	0,035%
High TOBIN'S q	0.054%	2	
Medium TOBIN'S q	0.033%	3	
Medium PER	0.031%	4	
Low PER	0.029%	5	
Low TOBIN'S q	0.025%	6	
IHSG	0.011%	7	

Source: Data Processed

Based on the ranking of active annual portfolio strategy, based on treynor, it can be seen that the portfolio that has the highest treynor value is the portfolio formed by the high PER ratio and the lowest treynor portfolio formed by the IHSG score, there are 6 portfolios that have the treynor value above the treynor value of IHSG, while no other portfolio has the amount of treynor value which is under the treynor value of IHSG. It shows that the portfolio is well diversified against the risk of market volatility.

Table 3.12
Active Portfolio Ratings Based on Annual Jensen

<i>Portfolio</i>	<i>Jensen</i>	<i>Ranking</i>	<i>Average Jensen</i>
High TOBIN'S q	0.051%	1	0,030%
High PER	0.046%	2	
Medium TOBIN'S q	0.042%	3	
Low PER	0.024%	4	
Medium PER	0.023%	5	
Low TOBIN'S q	0.023%	6	
IHSG	0.000%	7	

Source: Data Processed

Based on the ranking of active annual portfolio strategy, based on jensen, it can be seen that the portfolio that has the highest value of jensen is the portfolio formed by the ratio of high Tobin's q and the lowest portfolio jensen formed by the market value of IHSG, there are 6 portfolios that have the value of jensen above Jensen Jensen value, while no other portfolio has the value of jensen which is below the Jensen score.

Table 3.13
Active Portfolio Rankings Based on Semesters Sharpe

<i>Portfolio</i>	<i>Sharpe</i>	<i>Ranking</i>	<i>Average Sharpe</i>
Medium TOBIN'S q	30.207%	1	11.00%
IHSG	17.195%	2	
Medium PER	15.733%	3	
Low TOBIN'S q	15.048%	4	
High TOBIN'S q	7.696%	5	
Low PER	7.127%	6	
High PER	-16.029%	7	

Source: Data Processed

Based on semi-active portfolio ranking, based on sharpe, it can be seen that the portfolio that has the highest sharpe value is the portfolio formed by medium Tobin's q ratio and the lowest sharpe portfolio formed by the high PER ratio, there is one portfolio that has a value of sharpe above the value of IHSG sharpe, while 5 other portfolios have the value of sharpe which is below the value of IHSG sharpe. It

indicates that the portfolio of Tobin's q medium has consistently had a high return on the active strategy of the semester as well as having a relatively small risk level and added with the high performance of the Sharpe method as well.

Table 3.14
Active Portfolio Rankings Based on Treynor Semester

<i>Portofolio</i>	<i>Treynor</i>	<i>Ranking</i>	<i>Average Treynor</i>
Low TOBIN'S q	0.25%	1	0,14%
High TOBIN'S q	0.25%	2	
Medium TOBIN'S q	0.24%	3	
Low PER	0.19%	4	
Medium PER	0.13%	5	
IHSG	0.11%	6	
High PER	-0.16%	7	

Source: Data Processed

Based on semesters active portfolio ranking, based on treynor , it can be seen that the portfolio that has the highest treynor value is the portfolio formed by low Tobin's q ratio and the lowest treynor portfolio formed by the high PER ratio, there are 5 portfolios that have the treynor value above the treynor IHSG value , while 1 other portfolio has the amount of treynor value which is under the treynor IHSG value. It indicates that the existing portfolio in the semerters active strategy has a good performance and has performance above the IHSG market performance.

Table 3.15
Active Portfolio Rankings Based on Semester Jensen

<i>Portofolio</i>	<i>Jensen</i>	<i>Ranking</i>	<i>Average Jensen</i>
Medium TOBIN'S q	0.4626%	1	0,178%
High PER	0.2319%	2	
Medium PER	0.2046%	3	
Low TOBIN'S q	0.1771%	4	
Low PER	0.1149%	5	
High TOBIN'S q	0.0547%	6	
IHSG	0.0000%	7	

Source: Data Processed

Based on active smester portfolio rankings,based on *jensen* can be seen that the portfolio that has the highest value of jensen is the portfolio formed by the ratio of Tobin's medium and the lowest jensen portfolio formed by the IHSG market, there are 6 portfolios that have the value of jensen above the IHSG Jensen score, while no other portfolio has the value of jensen which is below IHSG Jensen value.

The results of the three portfolio performance evaluations using the sharpe, treynor and jensen methods show that the three portfolio strategies provide a positive average *excess return* which means that investing

stocks by portfolio formation method based on PER valuation ratio and Tobin's model q give a return which is able to defeat the returns from excess returns obtained by the IHSG market, so that the amount of risk that has been borne by the investors has been compensated, in addition to the positive excess return results indicate that the portfolio formed has been well diversified.

While for the sequence of average results of excess return that is generated by each portfolio strategy, as follows:

(a) Sharpe Method:

1. Semesters active stock portfolio strategy
2. Annual active stock portfolio strategy.
3. Passive stock portfolio strategy 5 years.

(b) Treynor Method:

1. Semesters active stock portfolio strategy
2. Annual active stock portfolio strategy.
3. Passive stock portfolio strategy 5 years.

(c) Jensen Method:

1. Semesters active stock portfolio strategy
2. Annual active stock portfolio strategy.
3. Passive stock portfolio strategy 5 years.

From the sequence result, there is an average level of excess return between the performance evaluation methods of sharpe, treynor, and jensen seen in the same sequence in each performance evaluation method. The evaluation of stock portfolio performance using overall risk adjusted return indicates that the portfolios formed by Tobin's q medium ratios show consistent ranking in the ranking of sharpe, treynor, and jensen although the investment period and strategy are different. This shows that the ratio of the medium-term portfolio of Tobin's q is recommended to investors to collect stocks in the Tobin's Ratio portfolio q medium.

The result of the explanation in this research is when the portfolio to be formed by all measurement methods whether it is a PER / model of Tobin's q, where the return will be obtained must be above the return offered by the IHSG market and the level of risk held by the portfolio should be lower / around the market risk level of IHSG.

4. CONCLUSIONS

From the results and explanation of this research that has described in Chapter III, then the issues that become the basis for this research is obtained the conclusions as follows:

- There is consistency of the portfolio that is formed by PER valuation, and Tobin's q model where the data used is History data, in each portfolio resulting average return above the IHSG market returns.
- From the results that is obtained in the portfolio study, Tobin's q medium has a consistent level of return on the IHSG market and has a relatively low risk and added with performance results

from the performance evaluation methods of Sharpe, Treynor, and Jensen, Tobin's q consistently perform well above the IHSIG market performance.

- By using the portfolio that is used in this study, the investors can get the excess return that is able to beat the performance of IHSIG market.
- Based on the comparison of the return, risk, and excess returns which is generated in each portfolio get the following sequence, the first sequence is the active semester strategy, the active annual strategy, and the 5 year passive strategy.
- By 2015 all returns earned by the portfolio is formed by PER and Tobin's model q get negative result caused by slowing down of Indonesian economy, when it is compared to the previous year data Central Bureau of Statistics recorded the growth in 2015 is 4.79% which is the lowest of previous years, followed by a decline in the value of rupiah against foreign currencies such as the US dollar in the 13000s and the sluggish global economy. So for stock investors should divert their investment to other investments such as gold or land investment.

5. SUGGESTIONS

Suggestions for Investor

1. The results of this study can be a reference and investment consideration for investors. Looking at the results of this study, the authors suggest to the investors, should invest stock by establishing an optimal portfolio using Tobin Model's ratio q active portfolio strategy of stock on Kompas -100 index. It's because the optimal portfolio is consistently able to show a superior portfolio performance when compared with the performance of the market index that is IHSIG.
2. For the stock investors who want to participate in investment Let's Saving Stock which is campaigned by BEI, it's good for beginner to choose an active annual strategy because according to one of performance methods of Sharpe, Treynor, and Jensen's active annual strategies that constantly at number 2 in the active strategies of the semester, the active annual strategy, and the 5 year passive strategy. Investors only need to swap their stock portfolio on an annual basis, so it will minimize the mistakes of market timing that make a decrease in return that will be obtained by investors.
3. If the investor likes the challenge (risk taker) then the best option is to use an active semester strategy to invest. Because the portfolio will exchange each semester depending on the company's performance conditions as reflected in the financial statements that corresponding with the semester.

Suggestions for Further Research

1. For further research, the author suggests that in the formation of portfolio should use an approach or valuation method of other stocks such as return on investment (ROI), Economic Value Added (EVA) or modern portfolio model such as single index model, Markowitz model and Constant Correlation model, so the results can be compared with the results of this study. In addition, further research is expected to use different research objects such as sectoral stock index, Jakarta Islamic Index (JII), 27-business index, investor index³³ and other stock index.

2. In choosing a risk free interest rate such as Sovereign Debt Instruments, bond yields and using a liquid market index such as the Kompas index 100 / LQ-45 index as a market index and a comparison index of portfolio performance.

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