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EQUITY MUTUAL FUND PERFORMANCE: THE CASE OF INDONESIA

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Abstract

The research was conducted by involving 59 equity mutual funds circulating in Indonesia with Rupiah denomination from 2012 until 2016. Performance measurement is done by Treynor Ratio, Sharpe Index, Jensen Alpha, Adjusted Sharpe Index, Adjusted Jensen Index, and Information Ratio. The population of this research is Equity Mutual Funds registered in the Financial Services Authority (FSA or OJK in Bahasa). Equity Mutual Fund is chosen as the object of research because in Indonesia equity mutual fund is the most popular mutual fund. The data used in this study are, (1) monthly net asset value of equity funds from December 2011 to December 2013. NAV data of mutual funds are obtained from Bloomberg through www.portalreksadana.com. (2) Monthly data of Composite Stock Price Index (CSPI) obtained from website www.idx.co.id from December 2011 to December 2013. (3) Data of Reference Rate of Bank Indonesia and Bank Indonesia 7 Days Repo Rate from January 2012 until December 2016. Overall RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, Simas Dana Saham, Schroder Dana Prestasi, Lautandhana Equity Progressive - Equity Progressive, Pratama Equity, and Pratama Saham are equity mutual funds that always consistently give positive results when measured by several models used.

Keywords: Equity Mutual Fund; Sharpe Index; Treynor Ratio; Jensen Alpha; Information Ratio.

Introduction

The capital market in Indonesia is growing very rapidly in recent years. The growth is reflected in Indonesia's Composite Stock Price Index (CSPI) from 2003 to 2017 that grew by more than 1,332 percent. A very rapid development when compared to the index of stocks of major countries such as the UK (FTSE) which only grow about 101 percent and Hongkong (HSI) which grew about 211 percent. When compared to neighboring countries such as Singapore (STRAITS) and Malaysia (KLCI) though, the Indonesian capital market remains superior.

Seeing the development of capital markets in Indonesia, especially stocks that are so fast, certainly raises the desire to participate in investing in it (Robiyanto, 2017a). However, to invest in securities in the capital market such as stock requires knowledge and access to good information. The presence of mutual funds seems to be the answer to the problem. Through mutual funds, people with limited investment capabilities can participate in investing in the capital market. People who have the capital deposit their assets to the investment manager to be invested in securities in the capital market.

The popularity of mutual funds continues to increase significantly, seen in total managed funds recorded at 185 trillion in 2013 to over 428 trillion in 2017 (OJK, 2017). The increase in popularity is due to the increasingly aware of the importance of Indonesian investment and the benefits offered by mutual funds such as, access to investment instruments not easily accessible, professional management, high liquidity levels, and can start with relatively small funds. In addition to these matters, mutual fund investment is not a tax object, because it is included in the redemption of investment units received by investors. And most importantly, the diversification of the portfolio manager. Portfolio diversification is very important, but not everyone has enough capability, so handing it to professionals through mutual funds is a wise move (Gusni & Hamdani, 2018).

Research on mutual funds has been done a lot before. In the decade of 1960, Jensen (1967); Sharpe (1966); Treynor (1965) developed a performance measurement ratio concerning portfolio risk and return. Sharpe (1966) studied 34 mutual funds from 1954-1963 in America using Treynor and Sharpe models with the Dow Jones index as a benchmark. The study concludes that 11 mutual funds have better performance while 23 of them have lower performance compared to their benchmark performance. Jensen (1967) studied 115 active mutual funds in 1954 to 1964, using the alpha indicators he developed. This study concludes that no mutual fund performance can exceed the market performance.

Several studies were conducted in 2010s by Hada (2013), which examines the top mutual funds and are considered to represent mutual funds in India from 2007 to 2012. The study involved six samples and used Treynor Ratio, Sharpe Index, and Jensen models. From the research, it is concluded that mutual funds, in the long run, have better performance than the market. Long-term mutual fund returns are better than returns on similar investment instruments. Mutual funds can provide a

satisfactory level of return and risk-adjusted return except during a recession. Tan (2015) conducted a study involving 14 mutual funds in South Africa by using model Treynor Ratio, Sharpe Index, and Jensen's Alpha. Research samples were taken from 2009 to 2014. Tan (2015) concluded only 1 of the 14 mutual funds studied had significant alpha values, which shows that South African investment managers are not able to demonstrate good ability in choosing and the ability to choose market time.

Kannan and Fathima (2016) conducted a study involving eight mutual funds in 2013 to 2015 in India. Kannan and Fathima (2016) found the mutual fund industry in India perform well in 2014. While in 2013 and 2015 mutual funds face negative returns. All mutual funds under study using Treynor Ratio and Sharpe Index have positive values. However, the value of Treynor Ratio and Sharpe Index ranks first twice as high as the bottom. In Indonesia, several research on mutual funds also conducted by Wahdah and Hartanto (2012), Pangestuti, Wahyudi, and Robiyanto (2017); Qomariah, Sari, and Budiarti (2016); Rofiq and Santoso (2015); Santoso and Robiyanto (2018).

Wahdah and Hartanto (2012) used a three-year study period from 2008 to 2010 and used LQ45 and CSPI as their benchmarks. Wahdah and Hartanto (2012) found that, by using Treynor Ratio, Sharpe Index and Jensen's Alpha, concluded there is only one equity fund that can outperform the second performance of both benchmarks. Rofiq and Santoso (2015) examine rupiah-denominated mutual funds and have been active from 2009 to 2013. The methods used for research are Treynor Ratio, Sharpe Index, and Jensen's Alpha. The sample used is conventional (non-sharia) equity fund. From the research, it is concluded that there are not many mutual fund shares that have performance above (outperform) CSPI which become benchmark. Pangestuti et al. (2017) studied some equity mutual funds in Indonesia by using 2012-2014 period and using Treynor Ratio, Sharpe Index, and Jensen's Alpha as measurement method. While Santoso and Robiyanto (2018), using Treynor, Sharpe, Jensen's Alpha and Information Ratio to measure the Sharia mutual fund performance in Indonesia.

Based on the above description, it can be seen that most research on performance measurement of mutual funds in Indonesia still tends to use measurements such as Treynor Ratio, Sharpe Index, and Jensen's Alpha. Those measurement tools are popular measurement tools (Robiyanto, 2017b; Robiyanto, Wahyudi, & Pangestuti, 2017), but have weaknesses that need adjustment (Robiyanto, 2018). Meanwhile, research that uses measurements such as Information Ratio is still limited (such as conducted by Santoso and Robiyanto (2018) who examines the Sharia mutual funds). So this study scrutinize the performance of equity mutual fund in Indonesia by using popular measurement such as Treynor Ratio, Sharpe Index, Jensen's Alpha and will also included it adjustment such as Adjusted Sharpe Index and Adjusted Jensen Alpha. This study also using the Information Ratio, because this ratio could provide an information about the performance of portfolio compared with its benchmark. The objective of this study are to measure the equity mutual funds' performance in Indonesia. This study expected to

provide a guidance for investors in making mutual fund investments, especially on stock mutual funds in Indonesia.

Literature review

Investment

Investment is a delay in consumption to be included in productive assets over a certain period (Hartono, 2009). Investment in productive assets can be real assets such as houses, land, and gold. Or it can also be a financial asset such as stocks, bonds, and sukuk. Type of financial investment can be divided into two, namely direct and indirect investment. (1) Direct investment is an investment made by purchasing a direct financial asset that can be traded through the money market, capital market, or derivative market. Or it can also be done by investing in non-tradable asset usually obtained from commercial banks such as savings and certificates of deposit (Ernayani, Sari, & Robiyanto, 2017; Triyono & Robiyanto, 2017). (2) While indirect investment can be done by buying securities through investment companies that provide financial services (Robiyanto, 2000; Robiyanto & Puryandani, 2015). For example, an investor can indirectly invest by buying an investment unit of a mutual fund.

Mutual fund

Mutual funds is one alternative for people to invest, especially people who have the capital, willing to invest but have limited knowledge (Gusni & Hamdani, 2018). According to 1996), mutual fund is a pool of fund of the investor community, and subsequently, the capital is invested in securities portfolio by the Investment Manager. Securities portfolio is a collection of several securities such as stocks, bonds, Sovereign Debt Instruments, or other investment instruments. Based on the components of the portfolio of mutual funds can be divided into four, namely money market funds, fixed income mutual funds, equity funds, and mutual funds. The money market mutual fund policy allocates all of its investment funds to money market instruments, with maturities of less than one year such as savings, time deposits, and current accounts. Fixed income mutual funds have a policy to invest at least 80 percent of their funds into debt securities. The main objective of a fixed income mutual fund is to generate a stable return on a certain period. The stock funds policy allocates to invest at least 80 percent of its funds into equity securities. While mutual fund mutual funds make mixed investments between debt and equity securities.

If the stock has a unit per share or lot consisting of 100 shares, the units used in mutual funds are referred to as the Unit Trust. Investors who purchase the Unit Trust are referred to as Holder of the Unit Trust. The more Unit Trust owned by an investor, the greater the investment value of the investor. Also known as Net Asset Value (NAV) or Asset Under Management (AUM), is the total investment fund for mutual fund products managed by the investment manager. NAB is calculated daily after trading hours are completed by Custodian Bank. Net Asset Value per Unit Trust is a reflection of the price of a mutual fund calculated from the total net

asset divided by the total number of units in circulation.

As one of the investment vehicles, there are several risk opportunities contained in the mutual fund that is, (1) the reduced value of investment units affected by the declining prices of securities forming the portfolio. (2) The difficulties experienced by the investment manager in providing redemption of cash when most of the unitholders resell the units it holds or is called liquidity risk. (3) Default risk, which is the worst risk, occurs when the insurer that ensures the wealth of the mutual fund does not immediately pay compensation or pay less than the sum insured when things go wrong

The modern portfolio theory

Markowitz (1952) introduces an approach in formulating a portfolio whereby investors should evaluate the portfolio by desired returns and risks calculated using standard deviations. The concept is often called an efficient portfolio, which can be defined as a portfolio with the smallest risk on a given rate of return or the greatest rate of return at a given level of risk. An efficient portfolio is a good portfolio, but not the best because the efficient portfolio only has one good factor, i.e. the return or expected return factor or risk factor. From efficient portfolios, an optimum portfolio can be established that is a portfolio with a combination of return and best risk expectations. The assumptions used in Markowitz's model are:

1. Time spent only one period.

2. No transaction fees.

3. Investor preferences are based solely on the return and risk expectations of the portfolio.

4. No loans and risk-free savings.

Treynor ratio

Portfolio measurements using the Treynor Ratio can be performed using the average past return as expected return and using beta (β) as the risk benchmark. Beta is used as a benchmark of investment risk because fluctuations in stock prices are influenced by market fluctuations. The average return as the best measure for predictive return guidelines applies as long as market assumptions are efficient. By comparing the average return with the risk can be seen that the higher the risk, the higher the expected return (Pangestuti et al., 2017; Robiyanto, 2017b). Treynor Ratio formula is:

$$Treynor\ Ratio = \frac{Average\ Return\ of\ Portfolio - Risk\ Free\ \ Average\ Return}{Beta\ of\ Portfolio}$$

Sharpe index

Sharpe (1966) uses two measures to predict future portfolio performance by using the expected rate of return (E) and predicted variability of risk expressed by the standard deviation portfolio (σ). Expected rate of return represents the average portfolio return in a period. While predicted variability of risk is the standard deviation of portfolio return in a period. Standard deviation indicates the change of portfolio return to the average return of the portfolio. This model assumes the past average return is the predictor of future return, and the standard deviation of the past is predicted future risk. Sharpe Index formula is:

$$Sharpe\ Index = \frac{Average\ Return\ of\ Portofolio - Risk\ Free\ Average\ Return}{Standar\ Deviation\ of\ Portofolio}$$

Adjusted sharpe index (ASI)

Adjusted Sharpe Index is the development of the previous model of the Sharpe Index to calculate asset performance using adjusted risk, by including abnormal slope/data rates. Adjusted Sharpe Index can be calculated using the formula (Zulkafli, Ahmad, & M., 2017):

$$ASI = Sharpe\ Index \times \frac{Observed\ Period}{Observed\ Period + 0{,}75}$$

Jensen alpha

The performance of a portfolio can also be evaluated through the Jensen Alpha. The Jensen Alpha will only accept a portfolio that can generate returns exceeding the expected return or minimum rate of return. Minimum rate of return is expected return calculated by capital asset pricing model (CAPM) method. The difference between the average return minus the minimum rate of return is called alpha (α). To calculate the minimum rate of return in question can be done by the formula:

$$Expected\ Return\ Portofolio = Risk\ Free\ Average + Beta\ Portofolio\ (Average\ Market\ Return - Average\ Risk\ Free)$$

So Jensen Alpha can be known by:

$$Jensen\ Alpha\ = Average\ Return\ of\ Portofolio - expected\ return\ (CAPM)$$

Adjusted Jensen index (AJI)

Adjusted Jensen Index is a form of adjustment from the Jensen Index where adjustments are made to systematic risk factors. AJI positive values indicate superior relative portfolio performance to market and vice versa (Robiyanto, 2018; Zulkafli et al., 2017). Adjusted Sharpe Index can be calculated using the formula (Zulkafli et al., 2017):

$$AJI = \frac{Jensen\ Alpha}{Beta\ of\ Portfolio}$$

Information ratio

Information ratio (IR) and Sharpe are both used to measure the risk-adjusted (Kidd, 2011). What distinguishes is that IR measures the rate of return on adjusted risk associated with the benchmark. IR can be calculated using the formula:

$$Information\ Ratio = \frac{Return\ of\ Portfolio - Return\ of\ Benchmark\ Index}{Tracking\ Error}$$

Method

Population and sampling

The population of this research is Equity Mutual Funds registered in the Financial Services Authority (FSA or OJK in Bahasa). Equity Mutual Fund is chosen as the object of research because in Indonesia equity mutual fund is the most popular mutual fund. At the end of 2016 in Indonesia, the percentage of stock mutual fund credits is 46.5 percent of the total mutual funds in Indonesia. Period used as performance measurement 2012 to 2016 because generally instrument of investment in form of equity or stock is instrument of long-term investment.

Furthermore, mutual funds are selected to be sampled based on certain criteria to be used as research samples. Sampling technique using purposive sampling technique that is as sample selection with technique of nonprobability sampling with certain criterion. These criteria are (1) mutual fund shares registered in OJK and has been active in 2012 or earlier until 2016. (2) mutual funds owns NAV in December 2011 to December 2013.

Based on the criteria, 59 selected equity funds are become samples.

Data

The type of data used in this study is secondary data. The data used are among others, (1) monthly net asset value of equity funds from December 2011 to December 2013. NAV data of mutual funds are obtained from Bloomberg through www.portalreksadana.com. (2) Monthly data of Composite Stock Price Index (CSPI) obtained from website www.idx.co.id from December 2011 to December 2013. (3) Data of Reference Rate of Bank Indonesia and Bank Indonesia 7 Days Repo Rate from January 2012 until December 2016. Starting from August 2016 to December 2016, the benchmark rate will continue with the BI Rate 7-days Repo as a substitute for the benchmark interest rate due to policy changes. The data obtained from the official website of Bank Indonesia is www.bi.go.id.

Result

Portfolio performance measurement by using Treynor ratio

The Treynor Ratio measures the performance of a portfolio by comparing the excess return to systematic risk present in the effects of its portfolio expression in beta. The higher Treynor Ratio (RVOL) value indicates the better the performance of a portfolio. Table 1 presents top ten equity mutual fund performance measured by using Treynor Ratio.

Table 1 Top ten equity mutual fund by using Treynor ratio

No.	Equity Mutual Fund	Treynor Ratio
1	RHB Alpha Sector Rotation	0.120456471
2	SAM Indonesian Equity Fund	0.094987581
3	TRAM Consumption Plus Fund	0.049846677
4	Simas Dana Saham	0.031560737
5	Schroder Dana Prestasi	0.030195318
6	Millenium Equity	0.025274327
7	Danareksa Mawar Konsumer 10	0.022409233
8	Lautandhana Equity Progresif - Equity Progresif	0.022233208
9	Pratama Equity	0.021661151
10	Pratama Saham	0.016764798

27 equity mutual funds produce positive Treynor Ratio, while 32 equity mutual funds produce negative Treynor Ratio. The equity mutual fund with smallest positive Treynor Ratio is BNP Paribas Maxi Shares (0.00011) which is still higher than CSPI' s Treynor Ratio (0.000048). From these results can be said that 27 equity mutual funds that have a positive value has a performance above the benchmark (outperform). RHB Alpha Sector Rotation has the highest Treynor Ratio of 0.1204. Other top-rated equity mutual funds are SAM Indonesia Equity Fund (0.0949); TRAM Consumption Plus Fund (0.0498); Simas Dana Saham (0.0315); and Schroder Dana Performance (0,0301). While Emco Mantap has the lowest Treynor Ratio of -0.0568 which shows the poorest performance among 59 equity mutual funds studied.

Portfolio performance measurement by using sharpe index and adjusted sharpe index

Portfolio measurement with the Sharpe Index are the measurements made by comparing the excess return to the total portfolio risk expressed by the standard deviation. The Sharpe Index shows the magnitude of the additional investment returns earned on each unit of risk taken. The greater the value of Sharpe Index of a portfolio, the better the portfolio's performance. Table 2 presents top ten equity mutual fund performance measured by using Sharpe Index.

Table 2 Top ten equity mutual fund by using sharpe index

No.	Equity Mutual Fund	Sharpe Index
1	SAM Indonesian Equity Fund	0.184710872
2	RHB Alpha Sector Rotation	0.121831103
3	Simas Dana Saham	0.119134109
4	Pratama Equity	0.097203446
5	Pratama Saham	0.076114425
6	HPAM Ultima Ekuitas 1	0.074837053
7	MNC Dana Ekuitas	0.074061285
8	Schroder Dana Prestasi	0.063367737
9	Lautandhana Equity Progresif - Equity Progresif	0.059914629
10	Schroder Indo Equity Fund	0.043253593

The CSPI as benchmark has a Sharpe Index value of 0.0013. Measurements with the Sharpe Index performed show only 23 equity mutual funds that can outperform from its benchmark. The highest Sharpe Index found in is the SAM Indonesia Equity Fund (0.1847), and the lowest Sharpe Index found in Emco Growth (-0.1275). Panin Dana Prima (0.00053); BNP Paribas Pesona (0.00037); and BNP Paribas Maxi Share (0.00023) has a positive Sharpe Index, but the value is still below the Sharpe Index of the CSPI.

Table 3 Top ten equity mutual fund by using adjusted sharpe index

No.	Equity Mutual Fund	*Adjusted Sharpe Index*
1	SAM Indonesian Equity Fund	0.182430491
2	RHB Alpha Sector Rotation	0.120327016
3	Simas Dana Saham	0.117663317
4	Pratama Equity	0.096003403
5	Pratama Saham	0.075174741
6	HPAM Ultima Ekuitas 1	0.073913138
7	MNC Dana Ekuitas	0.073146948
8	Schroder Dana Prestasi	0.062585419
9	Lautandhana Equity Progresif - Equity Progresif	0.059174943
10	Schroder Indo Equity Fund	0.042719598

Adjusted Sharpe Index (ASI) measurements showed similar results with Sharpe Index. 26 of 59 equity mutual funds have a positive index, and 23 of them are capable of exceeding market performance. Table 3 presents top ten equity mutual fund performance measured by using Adjusted Sharpe Index.

Portfolio performance measurement by using Jensen alpha and adjusted Jensen index

The Jensen Alpha uses the Capital Asset Pricing Model (CAPM) as the basis for measuring portfolio performance. Jensen (1967) measures performance by calculating the difference between returns earned with expected returns at systematic risk levels. A positive Jensen (alpha) index indicates that portfolio performs better than market performance (superior). While the negative alpha value shows portfolio performance worse than market performance (inferior). Table 4 presents top ten equity mutual fund performance measured by using Jensen Alpha.

Table 4 Top ten equity mutual fund by using Jensen alpha

No.	Equity Mutual Fund	Jensen's Alpha
1	Simas Dana Saham	0.237418016
2	SAM Indonesian Equity Fund	0.009487659
3	Pratama Equity	0.005720041
4	RHB Alpha Sector Rotation	0.005289705
5	Pratama Saham	0.004462047
6	HPAM Ultima Ekuitas 1	0.003504489
7	MNC Dana Ekuitas	0.002948662
8	Lautandhana Equity Progresif - Equity Progresif	0.002671381
9	Schroder Dana Prestasi	0.002523138
10	Schroder Indo Equity Fund	0.001824104

33 equity mutual funds have performed below market when measured using Jensen's Alpha Model. Emco Growth (-0.0070); Danareksa Mawar Komoditas 10 (-0.0059); Mandiri Investa Ekuitas Dinamis (-0.0059); Millenium Equity (-0.0057); and Prospera Bijak (-0.0053) are the five most inferior equity mutual funds. 26 other equity mutual funds have a positive alpha value with the largest value in Simas Dana Saham (0.2374).

Table 5 Top ten equity mutual fund by using adjusted Jensen index

No.	Equity Mutual Fund	Adjusted Jensen Index
1	RHB Alpha Sector Rotation	0.120407543
2	SAM Indonesian Equity Fund	0.094938653
3	TRAM Consumption Plus Fund	0.049797749
4	Simas Dana Saham	0.031511809
5	Schroder Dana Prestasi	0.030146389
6	Millenium Equity	0.025225399
7	Danareksa Mawar Konsumer 10	0.022360305
8	Lautandhana Equity Progresif - Equity Progresif	0.02218428
9	Pratama Equity	0.021612223
10	Pratama Saham	0.01671587

The Jensen Alpha adapted to systematic risk (β) or Adjusted Jensen's Index (AJI) shows different results. After adjusting for systematic risk, RHB Alpha Sector Rotation has the most superior value (0.12040). Simas Dana Saham (0.23741) which has the most superior value before compared with β becomes the fourth order after RHB Alpha Sector Rotation (0.12040); SAM Indonesian Equity Fund (0.09493); and TRAM Consumption Plus Fund (0.04979). The value of AJI showing the most inferior performance at adjusted risk is Emco Mantap (-0.05687). Table 5 presents top ten equity mutual fund performance measured by using Adjusted Jensen Index.

Portfolio performance measurement by using information ratio

Information Ratio (IR) measures the consistency of an investment in returns compared to benchmarks (Kidd, 2011). IR does not compare portfolio performance with levels of risk-free returns but directly with benchmarks that are the main parameters. The higher the IR value indicates, the higher the consistency of an investment in outperforming the market performance.

From the measurement results using IR, 23 of the 59 equity mutual funds studied have positive values that indicate the consistency of the portfolio in outperforming the market. Several equity mutual funds with positive value are MNC Dana Ekuitas (0.96287); Schroder Dana Prestasi (0.85228); and RHB Alpha Sector Rotation (0.81137). BNP Paribas STAR has the smallest IR value with IR value -2,63552. Table 6 presents top ten equity mutual fund performance measured by using Information Ratio.

Table 6 Top ten equity mutual fund by using information ratio

No.	Equity Mutual Fund	Information Ratio
1	MNC Dana Ekuitas	0.962878853
2	Schroder Dana Prestasi	0.852287113
3	RHB Alpha Sector Rotation	0.811372939
4	SAM Indonesian Equity Fund	0.655024504
5	HPAM Ultima Ekuitas 1	0.346031816
6	Lautandhana Equity Progresif - Equity Progresif	0.340874109
7	Schroder Indo Equity Fund	0.33432732
8	Danareksa Mawar Konsumer 10	0.305533226
9	Pratama Equity	0.021612223
10	Pratama Saham	0.01671587

The segmentation of equity mutual funds

Segmentation of equity mutual funds is conducted so investors can choose which funds to invest according to their risk-return preferences. This segmentation are combined Jensen Alpha and Beta. According to Jensen (1967), $\alpha < 0$, means that the investment has earned too little for its risk (or, was too risky for the return); $\alpha = 0$, means that the investment has earned a return adequate for the risk taken; $\alpha > 0$, means that the investment has a return in excess of the reward for the assumed risk. While, $\beta < 0$, means that the equity mutual fund is aggressive; $\beta = 0$, means that the equity mutual fund is neutral; $\beta > 0$, means that the equity mutual fund is defensive. There are six equity mutual funds in the underperform-defensive category; two equity mutual funds in the outperform-defensive category; 27 equity mutual fund in the underperform-aggressive category; 24 equity mutual fund in the outperform-aggressive category; while none in the neutral-neutral category. Overall, 33 equity mutual funds are categorized as underperform and 26 equity mutual funds are categorized as outperform.

The results of mutual funds' segmentation are shown in Table 7.

Table 7 The segmentation of equity mutual funds

	$\beta < 1$ (Defensive)	**$\beta = 1$ (Neutral)**	**$\beta > 1$ (Aggressive)**
$\alpha < 0$ (Underperform)	- BNP Paribas STAR - Aberdeen Indonesia Equity Fund - PNM Ekuitas Syariah - Millenium Equity - Danareksa Mawar Komoditas 10 - Grow 2 Prosper		- First State IndoEquity Dividend Yield Fund - Rencana Cerdas - Mandiri Saham Atraktif - First State IndoEquity PEKA Fund - BNP Paribas Ekuitas - Syailendra Equity Opportunity Fund - Danareksa Mawar - Bahana TCW Dana Prima - Manulife Saham Andalan - Maybank Dana Ekuitas - Manulife Dana Saham - BNP Paribas Solaris - TRIM Kapital - Mandiri Dynamic Money Fund - First State IndoEquity Sectoral Fund - Mandiri Investa Atraktif - BNI Berkembang - Danareksa Mawar Fokus 10 - Mandiri Investa Cerdas Bangsa - TRIM Kapital Plus

			- Emco Mantap - First State IndoEquity Value Select Fund - Mandiri Investa Atraktif Syariah - PNM Saham Agresif - Prospera Bijak - Mandiri Investa Ekuitas Dinamis - Emco Growth
$\alpha = 0$ (Neutral)	-	-	-
$\alpha > 0$ (Outperform)	- MNC Dana Ekuitas - Lautandhana Equity Progresif		- Simas Dana Saham - SAM Indonesian Equity Fund - Pratama Equity - RHB Alpha Sector Rotation - Pratama Saham - HPAM Ultima Ekuitas 1 - Schroder Dana Prestasi - Schroder Indo Equity Fund - Danareksa Mawar Konsumer 10 - TRAM Consumption Plus Fund - Schroder 90 Plus Equity Fund - Dana Ekuitas Prima - Schroder Dana Prestasi Plus - Trimegah Syariah Saham - Schroder Dana Istimewa - Dana Ekuitas Andalan - AXA Citradinamis - Manulife Syariah Sektoral Amanah - Manulife Institutional Equity Fund MIEF - Batavia Dana Saham Syariah - BNP Paribas Infrastruktur Plus - Panin Dana Prima - BNP Paribas Pesona - BNP Paribas Maxi Saham

Conclusion

The research was conducted by involving 59 equity mutual funds circulating in Indonesia with Rupiah denomination from 2012 until 2016. Performance measurement is done by Treynor Ratio, Sharpe Index, Jensen Alpha, Adjusted Sharpe Index, Adjusted Jensen Index, and Information Ratio. In general, the finding shows the risk of equity mutual funds is greater than the market risk. Simas Dana Saham has the highest standard deviation (1.9959) while BNP Paribas Star has the lowest standard deviation (0.0375). Some equity funds

have lower beta value than the market. There is only one mutual fund that has a beta larger than the market namely Simas Dana Saham (7.5342). This shows that most equity funds have lower risk and volatility than the market.

Based on measurements made with the Treynor Ratio, 27 equity funds have a positive Treynor Ratio. Five of them are RHP Alpha Sector Rotation, SAM Indonesian Equity Fund, TRAM Consumption Plus, Simas Dana Saham, and Schroder Dana Prestasi. Measurements using Sharpe Index and ASI obtained 26 equity mutual funds have a positive value, 23 of them outperform, and 3 of them underperform. Some of them are SAM Indonesia Equity Fund, RHB Alpha Sector Rotation, Simas Dana Saham, Pratama Equity, and Pratama Saham.

Portfolio measurements using Jensen Alpha show 26 equity mutual funds have a performance above the benchmark. The first to fifth rank is occupied by Simas Dana Saham, SAM Indonesian Equity Fund, Pratama Equity, RHB Alpha Sector Rotation, and Pratama Saham. While measurements using AJI show RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, TRAM Consumption Plus Fund, Shares Fund Simas, and Schroder Performance Funds have the largest value to the fifth largest in sequence. With the measurement of Information Ratio, obtained 23 equity mutual funds that have performed above the benchmark. Some of them are MNC Dana Ekuitas, Schroder Dana Prestasi, RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, and HPAM Ultima Ekuitas 1.

Overall RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, Simas Dana Saham, Schroder Dana Prestasi, Lautandhana Equity Progressive - Equity Progressive, Pratama Equity, and Pratama Saham are equity mutual funds that always consistently give positive results when measured by several models used.

Based on mutual funds segmentation by using Jensen's Alpha and Beta, there are six equity mutual funds in the underperform-defensive category; two equity mutual funds in the outperform-defensive category; 27 equity mutual fund in the underperform-aggressive category; 24 equity mutual fund in the outperform-aggressive category; while none in the neutral-neutral category. This finding can provide the guidance to investors in order to invests in Indonesian equity mutual funds.

Managerial implication

Although there are stock mutual funds that always consistently provide a positive value, but the magnitude of the risks that exist in each mutual fund needs to be considered. For example, Simas Dana Saham, which always has a positive index value and entered in the top ten performance, but has a standard deviation and beta far greater than the standard deviation and beta market. For prospective investors interested in investing in equity funds, RHB Alpha Sector Rotation, and SAM Indonesian Equity Fund can be an investment choice. Since both equity funds during the study period have proven to be consistent, they can generate positive performance values and have lower risk and volatility than the market.

Investors could choose the equity mutual fund based on their risk preference. For investors who prefer to equity mutual funds with low volatility, they can choose equity mutual funds which falls in outperform-defensive category. On the other hand, investors who prefer to equity mutual funds with high volatility, they can choose equity mutual funds which falls in outperform-aggressive category.

Future research agenda

For further research, it is expected that the research period should be considered carefully. Given each type of investment, instrument has its characteristics. Also, the use of other measuring instruments such as M^2 is also expected to be used in subsequent studies.

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