Style Analysis: Asset Allocation and Evaluation of Sharia Equity Fund Performance

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ABSTRACT

Knowing the funds' style can reduce investment risk. This paper describes the characteristic style of sharia equity funds in Indonesia. We use the return based style analysis model that consists of ten asset class and eight sharia equity funds. The model run by using quadratic program and rolling window method. The results indicate that fund managers apply a passive strategy to manage sharia equity funds. The managers allocate the fund in all asset class proportionally, but they prefer to allocate most of the fund to the trading asset class. Only 12.5% of the sharia equity fund that actual performance outperforms the style performance. The passive strategy style is the best way to manage the sharia equity fund in Indonesia.

1. Introduction

Investment is a strategy that has been used by the investors to accumulate their funds in a financial instrument with the hope of getting huge profits in the future, one of investment type that's now popular is an investment in the capital market. The public, as investors can choose which instruments they will use as Placement of funds according to their needs and risks.

In investing their funds, the investors must choose which investments to take. Two factors have been considered in the investment they are risk and return. Investors like a low risk but generate high returns, and that makes it difficult to do because 1 in 10 financial axioms stated that high-risk, a high return means high risk will also produce high returns.

The ideal investment selection is not only investing in one instrument. Therefore the mutual funds are the right choice for investing because the funds are invested in a portfolio and also managed by investment managers. So the fund owners do not need to think about funds distributed. The most popular mutual funds in Indonesia are equity funds; it is showing in figure 1. the most significant asset under management in 2017 is an equity fund with 31.42% proportion of total asset under management. This condition, due to the rate of equity funds return is quite high compared to other types of mutual funds.

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However, equity funds have a high level of risk because the market influences the value of the shares themselves.
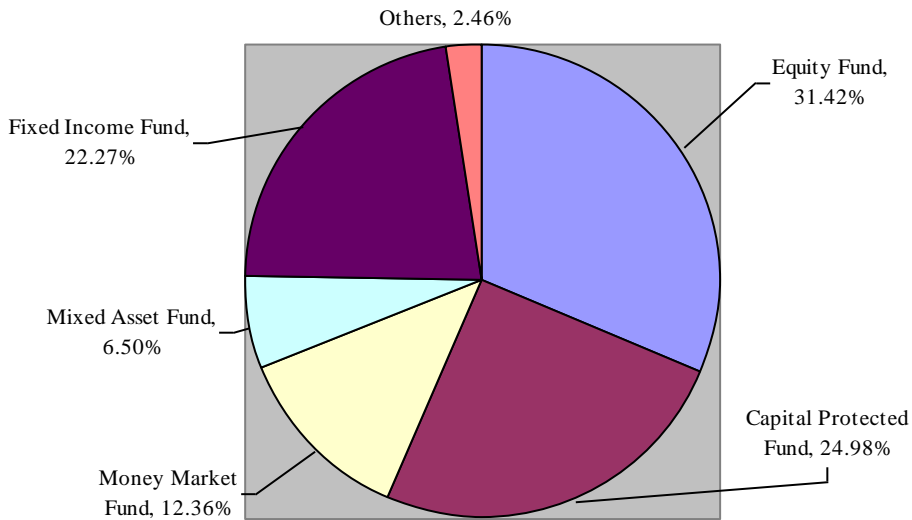

Fig. 1. Proportion asset under management 2017

In 1997, Indonesia introduced sharia mutual funds which were marked by the issuance of its mutual funds in July 1997. Sharia mutual funds similar to conventional mutual funds, the difference is that conventional mutual fund is considered to have still many elements that are contrary to Islamic sharia, both in terms of the contract, the implementation of investment, and in terms of profit-sharing (Hidayat, 2011). Najeeb & Vejzagic (2013) added that the Islamic capital market enables Muslims to actively participate in the overall progress of the economy without compromising their religious beliefs. Hendrayana (2016) revealed that compared to conventional types, the development of Islamic mutual funds can still be said to lag far behind. Based on OJK (Financial Services Authority) statistic report Asset Under Management (AUM) for sharia mutual funds decrease 15% from 2015 to 2016. The decrement was driven by the performance of sharia equity funds, which indeed declined, followed by investors who withdrew their funds while Marsono (2017) revealed that the sharia equity funds performance could beat the market in bearish market condition.

Marsono, Sodikun, & Ridarmelli (2014) showed that the stock returns on the Islamic capital market in Indonesia and ASEAN have similarities and more interesting than other regions. They also mention that the level of volatility was high compared to other Islamic capital markets in the region; this would illustrate the high level of market risk. Similar to conventional mutual funds, when we choose sharia equity funds as investment instruments, an investor cannot choose which shares to invest because it is the authority of the investment manager. The Placement of fund in the portfolio has influenced by the style of investment managers. The investment manager style also influences the performance that will be produced. The investment manager has classified as using an active strategy or a passive strategy in allocating funds in a portfolio to reduce existing risk.

Sharpe (1992) has examined how management style and performance measurement in mutual funds in the United States; the results show that investment managers tend to allocate funds into large capitalised stocks. The strategies used by mutual funds in the United States are mostly passive, but the results also show that the majority of mutual fund performance cannot beat the benchmark. In Europe, Papadamou & Siriopoulos (2004) also found that management in managing their funds still could not beat the

benchmark return of style. The research conducted by Saez & Izquierdo (2000) in Spain shows no significant difference between active strategies and passive strategies. Mangiring & Husodo (2014) research in Indonesia, found that the majority of equity funds in Indonesia can beat the return style as a benchmark. However, it was also found that the majority were influenced more by their style than by their selection. Braga (2016) researched Returns-Based Style Analysis and found that European Emerging Equity Funds have a passive strategy and mutual fund performance can outperform the benchmark.

On this basis, researchers are interested in reexamining research that has been done by Mangiring and Husodo. Researchers want to see how the strategies used by mutual fund investment managers in Indonesia, how the composition of the equity funds placed by investment managers, and whether sharia equity funds can beat the benchmark. This research is a development of the Mangiring and Husodo research by using Shariah equity fund research objects because by differentiating research objects; we will see the different or the same results.

2.   Literature Review

2.1 Shariah Mutual Funds

In some aspect, shariah mutual funds are similar to conventional mutual funds (Omar, Abduh, & Sukmana, 2013). Furthermore, what makes shariah mutual funds differ from their conventional counterparts is the shariah mutual funds have to follow shariah rules and guidance. Shariah principle forbids practice such as riba (changing interest), al-maisir (gambling and games of chance), and al-gharar (uncertainty) and these cannot be used in any financial transactions including in mutual funds portfolio.

In the context of Islamic mutual funds portfolio, shariah principles play a role in term of asset allocation (by screening), investment, and trading practices, as well as in income distribution which needs to be purified by excluding some portion of it following the shariah scholars' opinion (Elfakhani & Hassan, 2005).

Bodie, Kane, & Marcus (2011) argue that investors face a trade-off between risk and expected return. Historical data confirms that assets with low-risk levels provide lower average returns than higher risks. Nevertheless, investing in a risky portfolio does not become safer in the long run. Conversely, the longer the risk investment is borne, the higher the risk. Investment management has many portfolios (various types of mutual funds) that are adapted for various types of investors. A Portfolio diversified by using sharia shares has lower risk measures (Rifqi, 2016). Samsul (2015) added that when the investors take stock portfolio actions a "top-down" analysis, starting from macro to micro, by determining steps (1) international conditions, (2) national conditions, (3) asset allocation, and (4) stock selection.

Paulus (2016) mentions the net asset value (NAV) is one of the benchmarks in monitoring the results of a mutual fund. Agussalim, Limakrisna, & Ali (2017) also said that one of the leading indicators to assess the performance of the fund is to measure the growth of NAV/NAV per unit of investment. This indicator is the result of the calculation of the value of investments and cash held (which is not invested), reduced by the cost and the cost of debt of operations and then divided by the number of investment units outstanding (outstanding).

2.2 Style Analysis

Style Analysis is a method used to identify and describe characteristics in an investment portfolio. Style Analysis can reveal a portfolio that invests in Large-cap, value-oriented securities while others invest in small-cap growth stocks. The resulting coefficients obtained from the analysis can be used to identify the investment style of a fund manager, for which previous literature has documented many beneficial applications, especially for improved performance evaluation. Mohanti & Priyan (2018) argue

that fund managers utilise style analysis to classify and construct investment portfolios, and academicians also employ style analysis to evaluate the performance of and observe the style drifts in various funds.

In style analysis, there are two primary bases, namely holding based and return based (Kaplan, 2012). Holding based style analysis uses the stocks in a portfolio to describe a fund's allocation among asset classes or equity styles, while return based style analysis compares a portfolio's return to the returns of a set of market indexes, each ow which track a specific investment style (Jensen & Jones, 2019). This research used return based style analysis because the input for return based style analysis is readily available, which makes it an attractive tool from a practical point of view.

2.3 Return Based Style Analysis

William F. Sharpe first introduced return based style analysis in 1992 in his research it was concluded that mutual fund returns could be explained by asset allocation. Return based style analysis provides a way to identify the mix of assets in a mutual fund manager and compare it with the asset mix on its benchmark performance (Fabozzi, 2003). Returns-based style analysis can be considered as an external approach, as it is not subject to internal information of a fund (Sharpe, 1992). According to Sharpe, (1992) to apply return based style analysis need requirements the data should contain mutually exclusive, exhaustive data, and have returns that are "differ". The equation of return based style, according to Fabozzi (2003) is below:

$$\check{R}_{p,t} = [\delta_{1,p} X_{1,t} + \delta_{2,p} X_{2,t} + ... + \delta_{n,p} X_{,t}] + \check{e}_{t,p} \qquad (1)$$

$\check{R}_{p,t}$ as the return style estimated from the portfolio composition. $\delta_{1,p}$ refers to the proportion of asset class factor 1, $\delta_{2,p}$ refers to the proportion of asset class factor 2, and $\delta_{n,p}$ refers to the proportion of the asset class factor to n, and $\check{e}_{t,p}$ is non-factor component of portfolio return. The value $X_{i,t}$ is the amount of return for each asset class factor.

Fukui, Sato, & Takahashi (2017) mention that return-based analysis with properly chosen style factors can assess funds' risk-return profiles daily in a unified and efficient manner. They also add by applying a style analysis with common stock indexes, which represent investment categories and their combinations.

2.4 Identification Style

In managing portfolios, according to Manurung (2008), investment managers can use passive or active strategies. Furthermore, Fabozzi (2003) states that the basis of the distinction between passive and active is the passive managers provide style to investors, whereas active managers would provide style and selection in allocating their funds. When the appropriate benchmark style is used, a useful measurement for identifying active managers and passive managers is R^2. A small R^2 value indicates that the investment manager is active or in other words, the portfolio he manages is influenced by selection. While a sizeable R^2 value indicates that the mutual fund is more influenced by its style or can be called passive.

2.5 Performance Measurement

The performance measurement is using selection return which gained from return difference between the actual return fund and style return as a benchmark (Bodie et al., 2011). The return from style as a benchmark which is the return was obtained from a mixture of several asset classes based on the estimated style. Returns generated by a mutual fund portfolio in one period can be compared with these benchmarks. A positive selection return means the mutual funds can outperform the benchmark. However, if the selection return is negative, it means that mutual funds cannot beat the benchmark.

3. Methodology

This research design used descriptive with a quantitative approach. The dependent variable used in this research is the return of sharia equity funds, while the independent variable is the return of the asset class factor. The asset class factors used are nine sectoral shares and SBIS (Bank Indonesia Sharia Certificates). The sampling technique used is purposive sampling with the following criteria: (1) A sharia equity fund which has been active before January 1, 2013, and is still active until December 31, 2017, and (2) open-end funds of sharia equity funds. There are a total of 8 survivor equity funds.

The data used in this study are monthly data from January 2013 to December 2017, including (1) returns on the NAV of sharia equity funds, 2) returns on average sectoral sharia shares, and 3) returns on Bank Indonesia Sharia Certificates. To collect data, the documentation method from those various sources relating to the variables that have bee studied is used. Data processing and analysis used in this research would consist as follow:

1) The descriptive statistic of a variable
2)   in the processing analysis, the determination of asset allocation by quadratic programming and measurement of style (passive or active strategy) R^2 value is analysed.
3) Rolling window by solver excels at seeing the movement trend of each mutual fund's style.
4) Measurement of equity fund performance through a return based style analysis approach has also been utilised for analysis.

4. Results and Discussion

Table 1 shows that the highest average monthly return is 4.93% owned by the consumer goods sector, and the lowest average return is SBIS, with 0.53%. While the most significant standard deviation is the financial sector, 16.02% and the smallest is 0.06% which comes from SBIS. Table 2 shows Cipta Equity Syariah has the highest average return, which is 0.37%, and the lowest average return is -0.1% owned by PNM Ekuitas Syariah. Meanwhile, from the standard deviation point of view, the largest is Panin Dana Syariah Saham with a 4.82% standard deviation, and the smallest standard deviation is 3.4% from Cipta Syariah Equity.

Table 1. Descriptive Statistics of Return on Asset Class Factors

Asset Class Factor	Average	Std. Dev.	N
Agriculture	0.70%	7.07%	60
Consumer goods	4.93%	14.55%	60
Basic industry	4.92%	9.15%	60
Financial	1.44%	16.02%	60
Infrastructure	2.95%	11.87%	60
Mining	1.28%	5.89%	60
Various Industry	3.12%	9.89%	60
Property	2.13%	6.74%	60
Trading	2.61%	4.63%	60
SBIS	0.53%	0.06%	60

Table 2. Descriptive Statistics of Monthly NAV Return of Sharia Equity Fund

Islamic Mutual Funds	Average	Std. Dev.	N
Batavia Dana Saham Syariah	0.31%	3.85%	60
CIMB-Principal Islamic Equity Growth	0.07%	3.97%	60
Cipta Syariah Equity	0.37%	3.41%	60
Mandiri Investa Atraktif Syariah	0.01%	3.93%	60
Manulife Syariah Sektoral Amanah	0.30%	3.70%	60
Panin Dana Syariah Saham	0.23%	4.82%	60
PNM Ekuitas Syariah	-0.10%	3.74%	60
TRIM Syariah Saham	0.35%	3.83%	60

By using quadratic programming to estimate asset allocation of a mutual fund, the result shows in table 3. The asset class factor as the independent variable will have its proportion in a composition, the independent variable namely the proportion of the agricultural sector ($\delta_{1,p}$), the proportion of the mining sector ($\delta_{2,p}$), the proportion of the essential industrial sector ($\delta_{3,p}$), the proportion of various industrial sectors ($\delta_{4,p}$), the proportion of the consumer goods sector ($\delta_{5,p}$), the proportion of the property sector ($\delta_{6,p}$), the proportion of the Infrastructure sector ($\delta_{7,p}$), the proportion of the finance sector ($\delta_{8,p}$), the proportion of the trade sector ($\delta_{9,p}$), and the proportion of Bank Indonesia Sharia Certificates ($\delta_{10,p}$).

Table 3. Asset Allocation of Mutual Funds

Mutual Funds	($\delta_{1,p}$)	($\delta_{2,p}$)	($\delta_{3,p}$)	($\delta_{4,p}$)	($\delta_{5,p}$)	($\delta_{6,p}$)	($\delta_{7,p}$)	($\delta_{8,p}$)	($\delta_{9,p}$)	($\delta_{10,p}$)	R^2
TRIM Syariah Saham	2%	13%	7%	5%	4%	10%	0%	2%	37%	20%	62%
Batavia Dana Saham Syariah	5%	12%	6%	6%	3%	15%	0%	2%	31%	20%	63%
PNM Ekuitas Syariah	6%	13%	4%	7%	3%	15%	0%	1%	31%	20%	68%
CIMB-Principal Islamic Equity Growth	8%	9%	7%	6%	3%	17%	1%	1%	28%	20%	59%
Mandiri Investa Atraktif Syariah	3%	13%	7%	1%	5%	13%	1%	2%	35%	20%	59%
Cipta Syariah Equity	3%	14%	6%	4%	2%	18%	1%	2%	30%	20%	79%
Manulife Syariah Sektoral Amanah	4%	11%	5%	6%	3%	14%	1%	1%	35%	20%	70%
Panin Dana Syariah Saham	1%	4%	4%	6%	4%	18%	1%	1%	41%	20%	48%
Average	**4%**	**11%**	**6%**	**5%**	**3%**	**15%**	**1%**	**1%**	**34%**	**20%**	**64%**

From table 3, it can be seen that the trade sector is the most substantial average composition in a sharia equity fund with 34% proportion and the composition of sharia equity funds which dominates the second is SBIS with a proportion of 20% in each equity fund. The R^2 value from all equity sharia funds shows that the average is 64%, meaning that its style influenced the investment manager of sharia equity fund compared to its selection, or in other words the majority of sharia equity fund shares in Indonesia using passive strategy. Meanwhile, the average selection (1- R^2) on equity funds is 36%.

The result also shows that three from eight equity fund have R^2 value below the average; it is mean they use active strategy in investment style compare to the other equity fund. Furthermore, Panin Dana Syariah is more active due to the lowest R^2. Likewise, when it applied to the rolling window the R^2 value Panin Dana Syariah shows a fairly consistent or changes in R^2 do not show a significant value.

Based on the rolling window, three patterns occur in the analysis as follow:

- There are two compositions whose changes are interrelated. When the trading sector proportion decline, the property sector continues to grow. At the beginning of the period of July 2015, the proportion of sharia shares in the trade sector dominated the mutual funds, but in the first 2016 property sector began to take the position of the trade sector.

- Bank Indonesia Sharia Certificates (SBIS) have a reasonably stable proportion throughout this research period, a maximum proportion of SBIS at 20%.

- Almost all factor class assets are including in composition, only the infrastructure sector less attractive in any sharia equity funds.

Table 4. Analysis of Equity Fund Performance

Equity Funds	R^2	Average of selection *return*
Trim Syariah Saham	62%	-2,3%
Batavia Dana Saham Syariah	63%	-2,2%
PNM Ekuitas Syariah	68%	-2,6%
CIMB-Principal Islamic Equity Growth Syariah	59%	-2,6%
Mandiri Investa Atraktif Syariah	59%	-2,5%
Cipta Syariah Equity	79%	0,2%
Manulife Syariah Sektoral Amanah	70%	-2,1%
Panin Dana Syariah Saham	48%	-2,4%

Mutual fund performance is a benchmark in determining which investment managers can provide good returns. Investment managers who work well have successfully implemented their strategies, both active and passive and able to produce a selection return above zero or an actual return that is far above its style.

From the table 4 shows the average value of selection return is negative in all equity funds, it indicates the strategy used by investment managers is not correct so it cannot increase returns above their return style. It would be more profitable for each sharia equity fund in this research to follow their style in the distribution of asset class allocations. However, there is one equity fund that has an actual return above the value of the style return, which is the Cipta Syariah Equity fund. The processed data also shows that Cipta Syariah Shares have R^2 of 79% it can be said that this fund's passive strategy was right.

5. Discussion

The results of this research indicate that the main composition of sharia equity fund in Indonesia is the trade sector, this has contrary to the previous research conducted by Mangiring & Husodo (2014) who found that the main composition of stock mutual funds is the infrastructure sector. Differences in the results of this research possibly occurred due to differences in the research object, which focuses on equity mutual funds. The time shift also caused changes in the performance of this sector, from 2013 to 2017 trade sector shown excellent performance with a positive average return.

Currently, the trade sector has the most significant component in the list of Islamic shares. Total shares in the trade sector are 91 shares, while total shares in other sectors are below the trade sector. This condition allows sharia mutual funds to allocate funds to trade sector because so many stock choices can be invested. From a risk point of view, the trade sector has the lowest risk compared to the others, shows by standard deviation value. The property sector also currently shows better performance than other sectors; this also allows the property sector to be included in the main components of an equity fund.

In general, sharia equity funds in Indonesia have a passive strategy; this result is in line with previous research conducted by Mangiring & Husodo (2014) and Braga (2016) that equity funds at that time were passive strategies. The chosen passive strategy may be due to reduce costs in managing funds and try to generate a return that is the same as the chosen benchmark.

The majority of the performance of sharia equity funds cannot outperform the style as a benchmark; it is indicating that the investment manager in sharia equity fund does not use the correct strategy. The performance will become useful if the investment manager uses the strategy based on this style analysis. This result also contradicts to Mangiring & Husodo's (2014) research that stated in general mutual funds perform better than their style, but based on t-value there is no significance of the research, in other words, there is no difference in actual performance with style.

6.   Conclusions

Based on the style analysis, almost all asset class factor is becoming composition in sharia equity funds such as agricultural sector, mining sector, primary industry sector, various industry sectors, consumer goods sector, property sector, financial sector, trade sector, and Bank Indonesia Certificates Sharia. Averagely, the main composition of sharia equity fund in Indonesia is the trade sector with a proportion of 34%, and its still below half portion of the portfolio (50%). The proportion of the value is considered good because based on the principle of the portfolio must expose the risk by not having a dominating asset class factor.

The majority of sharia equity fund in Indonesia has a passive strategy, meaning that their style more influences sharia equity fund in Indonesia compared to selection. While the performance of sharia equity in Indonesia cannot beat its style, only one equity funds have a definite selection return value; it means that the actual performance of this equity fund can outperform its style.

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