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The effect of fund size on mutual funds performance in Egypt

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Abstract

The growth of mutual funds investment and its importance to various economies has become more significant in the past few decades. There are many factors that affect the mutual fund performance one of those factors are fund size. The researcher will investigate the effect of fund size on mutual fund's performance in Egypt. The results showed that Log Net asset value NAV (Log fund size) has a significant negative impact on mutual fund performance, Age has a significant negative impact on mutual fund performance. The researcher also concluded that the Fund type has significant effect on mutual funds' performance. While Log total fund expense has a significant positive impact on mutual funds' performance.

Keywords: Mutual funds, Net asset value, Fund size, Fund age, Fund type, Total fund expense, Sharpe ratio, Mutual funds' performance

Introduction

The basic aim behind the mutual funds is to create a pool of money from individuals and organizations to invest in stocks, bonds and other assets in different industry sectors and regions of the world, the money collected from investor's is invested by the fund manager in different types of securities depending upon the objective and need of the investor based on the preferred risk and return.

Ferreira et al. [13] this research examined the determinants of the mutual funds' performance around the world by using a sample of 10,568 open-ended actively managed equity funds from 19 countries in the 1999–2005 period. researchers measured the performance of the mutual funds by a list of fund attributes including size, age, fees, management structure and management tenure, in addition country characteristics such as economic development, financial development, investor protection and familiarity. The researchers concluded that funds size is positively related with fund performance.

Larger funds perform better suggesting the presence of significant economies of scale in the mutual fund industry worldwide. The fund age is negatively related with fund performance indicating that younger funds tend to perform better, additional tests show that fees are positively associated with performance. If fees are seen as the price that uninformed investors pay to managers to invest their money, when paying higher fees investors are paying the benefits associated to that investment and obtain better performance. Mutual funds managed by an individual manager perform better. The possible benefits associated with team-management funds are exceeded by the costs.

Management tenure is positively linked to performance. This finding supported the hypothesis that the benefits of management experience outweigh the costs, such as lack of effort and attention. Domicile country characteristics are able to explain mutual fund performance beyond fund attributes. There is a positive relation between mutual fund performance and the country's level of financial development, countries with high trading activity and low transaction costs. The level of economic development is of importance for domestic funds. Funds located in countries with strong legal institutions

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tend to perform better. They concluded that the home trading, legal, and knowledge environment are important in explaining performance worldwide.

Minhas [24] the purpose of the study was to evaluate the factors that affect the mutual funds' performance in Pakistan. The author conducted his analysis on 30 open-ended mutual funds operating in Pakistan for the period from 2007 to 2014. The author used the regression analysis model to identify the impact of expenses, fund size, management style and liquidity on the mutual funds' performance. The results showed that expenses are the most significant variable that can impact the fund performance, while the size, management style and liquidity showed a very low significant.

Soeharto and Kisti [32] this research examined recent past performance and fund characteristics that affect the equity mutual fund performance, performance was measured by Jensen Alpha. The characteristics examined include Fund Size, Fund Age, Net Asset Value, and Fund Growth. This research used 33 mutual funds equity as a sample during 2010–2013. The hypotheses were tested using panel data regression with Fixed Effect Model. The results indicated past performance, Fund Size has negative effect to equity fund performance and Fund Growth have positive effect to equity fund performance. The findings also find same thing show that Fund Age have positive effect to equity fund performance. However, Net Asset Value was found have no significant influence on equity fund performance. In term of that, Net Asset Value is not a good predictor of future performance. Fund managers should understand the characteristics that will affect fund performance and develop strategies on how to increase their funds' performance.

Ramesh and Dhume [28] the paper aim was to establish a relationship between fund size and its performance. The attempt is also made to incorporate all the fund attributes and evaluate if these attributes have any favorable or adverse impact on the performance of the mutual funds. The study considers five fund characteristics. These are fund size, fund flow, expense ratio, portfolio turnover rate and fund age. Cross-sectional multiple regression approach is used to analyze the impact of the fund characteristics on the performance of the funds. The results indicated that, fund size and fund flow were inversely related with the returns earned on the fund. Increase in the fund inflow erodes the performance of the mutual funds. Expense ratio and portfolio turnover rate were highly correlated with each other. Increase in portfolio turnover rate increases the expense ratio indicating that, higher trading activity will incur higher costs. Fund performance was significantly related to the size of the fund and the new money flowing into the fund every year.

Rehman and Baloch [29] the study aimed to know the impact of factors affecting the performance of Mutual Funds in Pakistan. The study investigated the performance of 44 open-ended Mutual Funds operating in Pakistan for the period from 2010 to 2014. The dependent variable of the study was the fund returns, and the independent variables were fund size, expense ratio, asset turnover, liquidity and load fee. The results showed that the size, expense ratio and asset turnover have positive impact on fund return. And factors like liquidity and load fee are showing negative impact on fund return. The research advised fund managers to maintain a balance among the factors to ensure maximization of its return, benefiting both; Mutual Fund managers and investors.

Moore [25] in this paper, the author attempted to answer the question of whether or not there is a significant relationship between age and performance for actively managed equity mutual funds. Many investors require a multi-year track record before investing in a fund, which could be costly if new funds perform better than established funds. I investigate this question using performance information and fund characteristics (expense ratio, fund size, age, and manager tenure) from the CRSP database for all Morningstar U.S. equity funds between 1990 and 2015. This paper concluded that older funds are riskier, but this relationship reverses for very young funds, which exhibit more risk. The author found that older funds have slightly lower risk-adjusted returns, but this relationship again reverses for very young funds. Though both of these relationships are somewhat weak, results implied that investors may not want to flock to new funds in the hope of outsized risk-adjusted returns requiring a track record does not come at a significant cost and may, in fact, help investors avoid risk.

Asad and Siddiqui [7] the authors of this research were to determine the factors that impact the returns and performance of mutual funds of Pakistan. To determine this they selected 100 mutual funds of 9 different categories from Pakistan mutual fund market, it included conventional and Islamic both. To find the impact they include both micro factors (Expense ratio, Fund age, Fund size, Risk return coefficient, Standard deviation, Sharp ratio) and macro factors (GDP, Interest rate). This research concluded that fund age, fund size and risk return coefficient have no effect on mutual fund return and performance, however, in some model's risk return coefficient have negative effect on fund return and performance, strong positive relation has been found for factors expense ratio and risk (i.e., standard deviation), however, Islamic funds show the negative effect of expense ratio to Islamic mutual fund return and performance.

Alvi and Rehan [4] this research evaluated the potential mutual fund performance drivers and will benefit the

stakeholders in terms of smart investment decisions. The study is based on convenient sampling method covering 16 out of 19 asset management companies (AMCs) that comprise 114 outstanding funds in the Mutual Fund Association of Pakistan (MUFAP). The findings revealed that the asset under management, fund risk, KSE-100 returns, total income, total expense, age of the fund and lagged returns have a significant positive impact. Management quality rating has an insignificant positive impact on returns. In contrast, risk-free instruments have a significant negative impact on fund returns (FRs).

Previous studies showed that some authors found a significant inverse relation between fund size and fund performance, fund size negatively impact over the performance [17, 28, 32]. On the other hand, some authors found a significant positive relationship between fund size and performance, fund size directly and positively affect the performance of mutual funds, such as [6, 9, 13, 34]. Others found that the fund size has no linear correlation with mutual funds' performance [1, 8, 12, 21, 24, 31]. Due to conflict in findings this study aims to investigate the effect of fund size on mutual fund performance in Egypt.

Mutual fund performance

Maheswari and Dineshkumar [22], performance is how a firm effectively and efficiently the manager or the investor is in achieving the objectives in terms of return and risk, these objectives include growth funds seek high rates of return from capital gains undertake significant risks in order to earn this gain. Income funds seek both cash dividend income and, capital gains and, as a result, are less risky than growth funds. Income and growth funds want to earn primarily cash dividends and, to a smaller extent, capital gains. Balanced funds claim to be in pursuit of income, growth and stability.

Mutual fund performance can be analyzed through performance measurement ratios which are used in portfolio analysis George and Wayne [14], there are several models which are used for the performance evaluation of mutual funds. Most of the studies used five measures of performance evaluation of mutual funds [1, 26, 33] Sharpe measure; Jensen differential measure; Treynor measure; Sortino measure and Information measure. While Treynor measures only the systematic risk summarized by beta, Sharpe concentrates on total risk of the mutual fund.

The researcher defines mutual funds' performance as the determination of the success of the portfolio manager to achieve balance between the different rates of return and acceptable levels of risk. Thus, evaluating the performance of mutual funds does not mean only measure return on these funds, but also means measuring the levels of risk associated with those returns during a certain time.

Fund size

The total amounts of subscription of the unit holders in the fund in addition to the total loans payable by the fund. Johansson and Jacobsson [20] Small funds experience higher transaction costs than larger funds because they cannot take advantage of certain economies of scale. Younger funds may face significant higher costs in their start-up period. This is due not only to marketing costs but also the initial cash flows as it will place a greater load on the fund's transaction costs. One of the reasons of underperformance of younger funds, according to Bauer et al. [9], is their exposure to higher market risk since they are invested in fewer stocks.

Economies of scale provide cost reductions obtained from increasing asset size. Costs per unit of output decrease with increasing scale and constant variable costs as fixed costs are spread over more units of output. Operational efficiency is also often higher, with increasing scale leading to lower variable costs. In the case of mutual funds, there are fixed costs that go toward reducing the ratio of fund expenses Malhotra et al. [23].

The researcher defines fund size as the amount of money that a fund managers manage. Large funds have a benefit over small funds in term of economies of scale because large funds purchase balk of orders so they can pay fixed cost and have access to more resources. Moreover, managers of large funds will have better investment opportunities than managers of small funds and reduced brokerage commission with the amount of the transaction Malhotra et al. [23].

Fund expense

Investors willing to invest in mutual funds, as in any other transaction, must pay fees and incur cost associated with buying and selling, managing the accounts, and just simply gathering the information Alves [3]. Depending on their preferences investors can choose the fee structure that they find more suitable for them. These expenses include fund management fee, expenses incurred on selling and marketing, fees paid to the registrar and transfer agent and other expenses, agent commission, promotional expenses, and other costs that the mutual fund's manager charges from investors. Fund manager is the ultimate decision maker and his point of view cost a lot depending on years of experience Minhas [24]. The higher the expense ratio the more it affects the investor directly. As fund performance increases, it attracts many financial investors.

The costs involved with purchasing a mutual fund are not always as straightforward as buying a share of stock.

To buy stock, you simply pay your broker the agreed upon commission. Mutual funds may also involve a broker fee, but since these are professionally managed funds, there are other expenses involved. The fees involved vary widely across the range of mutual funds. Mutual fund fees broken down into two categories ongoing annual fees to keep you invested in the fund, and transaction fees paid when you buy or sell shares in a fund Wermers [36].

The researcher defines the fund expense as a charged price or fee for the services there are two types of fees incurred by investors' sales load which consist of load fund and no-load fund. Load fund it's a mutual fund with an upfront sales or commission charge that the investor must pay. While no-fund load is a mutual fund that doesn't charge upfront sales or commission. Fund operating expense it's a one type of upfront load charges on the initial investment in a mutual fund.

Fund age

Age of a mutual fund could play a role in deciding performance since younger funds may face significant higher costs in their start-up period due to diseconomies of scale, but also that the initial cash flows will have a greater weight on the fund's transaction costs. There is also evidence showing that "return of new mutual funds may be affected by an investment learning period" Gregory et al. [16].

According to Bauer et al. [9] one of the reasons for underperformance of younger funds is their exposure to higher market risk since they are invested in fewer stocks. Young funds tend to be smaller than older ones, which make the young funds' returns and ratings more prone for manipulation. The smaller the fund, the more a handful of stock picks can impact the performance of the entire fund Adkisson and Fraser [2].

Fund type

According to [35] mutual funds fall into several main categories. Some are bond funds (also called fixed income funds), and some are stock funds (also called equity funds). There are also funds that invest in a combination of these categories, such as balanced. In addition, there are money market funds, which are a specific type of mutual fund, Global/International funds, Regional funds, Sector funds, Islamic funds, Funds of funds, Asset allocator funds and Private equity funds.

The researcher defines the fund type as a short-term funds and long-term funds. Long-term funds include equity funds consisting of common and preferred stocks securities, bond funds consisting of fixed income capital market debt securities, hybrid funds consisting of both stocks and bond securities, index fund are long-term mutual funds in fund managers buy securities in proportions similar to those included in a specified major stock index. Finally, exchange-traded funds are designed to replicate a particular stock market index. However, unlike index funds, exchange traded funds are traded on a stock exchange at prices that are determined by the market.

Short-term funds include money market mutual funds which are a collection of short term to provide easy liquidity, preservation of capital and moderate income. Investors invest in safer short-term instruments such as treasury bills, certificates of deposit, commercial paper, investors earn interest at a rate faintly higher than commercial bank accounts.

Methods

Data collection and study sector

The study used secondary data and utilized panel data which consisted of time series and cross sections. The data for all the variables in the study were extracted from Egyptian Investment Management Association (EIMA) is an Egyptian Professional Association and the Egyptian Exchange website to provide the information needed about Mutual Funds in Egypt.

Data selection

The research selected 348 bank of seven different types from Egyptian mutual fund market representing 42 balanced mutual funds, 108 equity mutual funds, 108 money market funds, 18 fixed income mutual funds, 48 Islamic mutual funds, 12 fund of funds mutual funds, and 7 asset allocator funds mutual funds during the period from 2012 to 2017, this time frame was selected because most of the funds had available data for the period, and Egypt was undergoing a period of instability across all measures. The above-mentioned mutual funds are considered for analysis under this study.

Statistical Analysis

Descriptive analysis

In this subsection, descriptive statistics such as mean, standard deviation, minimum, and maximum are presented for all the variables of the study. Table 1 presents the descriptive statistics for the whole period covered from 2012 to 2017.

Table 1 Descriptive statistics

Variables	*N*	Minimum	Maximum	Mean	Std. Deviation
Age	348	6	24	13.31	5.966
NAV	348	15.45277	22.67951	18.73694	1.665022
Total Fund Expense	348	11.58236	20.56427	15.15587	1.545281
Sharpe	348	1	27	8.98	6.651

From Table 1, it is clear that.

- Minimum of the age in the study period is 6 while the maximum is 24, and the average is 13.31 with standard deviation equal to 5.966.
- Minimum of the NAV (fund size) in the study period is 15.45277 while the maximum is 22.67951, and the average is 18.73694 with standard deviation equal to 1.665022.
- Minimum of the total fund expense in the study period is 11.58236 while the maximum is 20.56427, and the average is 15.15587 with standard deviation equal to 1.545281.
- Minimum of the Sharpe in the study period is one while the maximum is 27, and the average is 8.98 with standard deviation equal to 6.651.

Means according to years

From the below graphs the researcher can conclude that the mean of the age is almost the same over years, while NAV (Fund size) decrease over years, and total fund expense decrease till 2014 then increase in 2015 then decrease again. For Sharpe it is increase till 2016 and decrease in 2017.

Means according to Fund Type

Figure 1 shows that the highest age mean for the Asset allocator funds and lowest for Funds of funds, while the highest NAV mean is for Money Markets while the lowest for Asset allocator funds, the highest total fund expense is for Islamic funds and the lowest for Asset allocator funds. Finally, the highest Sharpe is for Money Markets and the lowest for Asset allocator funds and Funds of funds.

Data Analysis

In determining the most appropriate method between Ordinary Least Squares Regression (OLS), Fixed Effect (FE) and Random Effect (RE) to make useful inferences and conclusions in this study, a number of criteria are applied. First, the *F*-test of the joint significance of the fixed effects intercepts is used to make a choice between the OLS and FE. The null hypothesis is that all the FE intercepts are zero. If the null hypothesis is rejected, then the FE method is considered good fit to produce unbiased estimates and therefore chosen over the OLS Wooldridge [37] (Table 2).

The results showed that since the Prob > F and less than 0.05 so we reject the null hypothesis that the coefficients

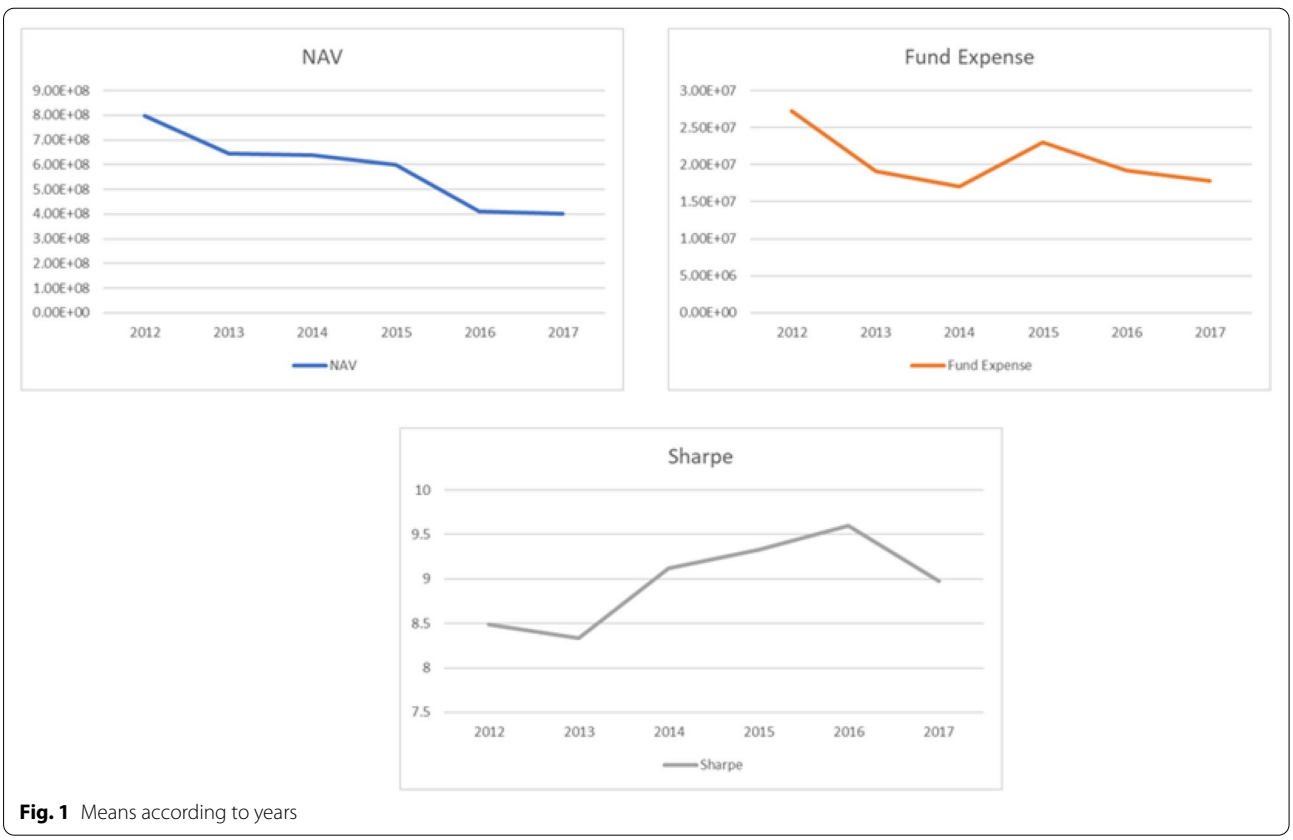

Fig. 1 Means according to years

Table 2 Summary of joint *F*-test statistical results. *Source*: calculated by the author

Model	*F*-test
Mutual Fund Performance (Sharpe)	0.0343

Table 3 Summary of Hausman Test statistical results. *Source*: calculated by the author using STATA 14

Model	Hausman test
Mutual fund performance (sharpe)	0.2825

for all years are jointly equal to zero, therefore time fixed effects are needed in this case.

Secondly, to decide between RE and OLS, the Breusch-Pagan Lagrange Multiplier (LM) test is applied. The null hypothesis in the LM test is that variance across panels is zero, that is, there are no significant differences across panels (mutual funds) (i.e., no panel effect) (Prob > Chibar2 < 0.05). If we fail to reject the null, then the conclusion is that RE is not appropriate. That is, there is no evidence of significant differences across industries, therefore a simple OLS regression is appropriate [15].

pooled regression vs. RE model, we have selected the RE model. Now the question is: Which one is better, FE or RE.

Finally, to determine which model between FE and RE is appropriate, Hausman tests are conducted where the null hypothesis is that the preferred model is RE versus the alternative the FE. These tests whether the unique errors (μ1) are correlated with the regressors, the null hypothesis is that they are not Green [15]. The Hausman test statistic (Prob > Chi2 < 0.05) indicates that the RE method may give biased and inconsistent estimators, hence the FE model is considered to give unbiased and consistent estimators (Table 3).

Breusch and Pagan Lagrangian multiplier test for random effects

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Breusch and Pagan Lagrangian multiplier test for random effects

        Sharpe[fundtupenum,t] = Xb + u[fundtupenum] + e[fundtupenum,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                  Sharpe |   44.04568       6.636692
                       e |   22.25303       4.717312
                       u |   17.64514       4.200612

        Test:   Var(u) = 0
                                 chibar2(01) =   150.41
                              Prob > chibar2 =   0.0000
```

Source: calculated by the author using STATA 14

We reject the null of Prob > chibar2; we cannot pool the data but select the RE model. We have earlier seen that in the context of pooled regression (OLS) vs. FE model, we have favored the FE model, and now in the context of

The results of the Hausman test revealed that random effect model is the appropriate model. Therefore, the model will run using generalized least square method (GLS).

Table 4 Unit root statistical summary. *Source*: calculated by the author using STATA 14

Variable	Statistics	*P*-value
Sharpe	772.5164	0.0000
Net asset value	923.2205	0.0000
Total fund expense	758.3676	0.0000

Panel data diagnostic tests

Panel root unit test

Panel unit root test was applied on all variables used in the analysis in order to determine whether or not the panel data were stationary. This involved solving for the value of ρ in the general equation: $\boldsymbol{Yit = \alpha + pYit - 1 \pm \mu\, it}$ Where: t = 1…0.5 years and i = 348 bank.

If ρ = 1, it implied that the observation Yit was dependent on its lag value Yit − 1 and hence the data was non-stationary. The converse would be true if ρ < 1. The necessity of this procedure was to avoid a situation where obtained regression results were spurious; hence jeopardizing testing of hypothesis Granger and Newbold (1974). The study applied Fisher-type test (with trend) because it has more advantages than other panel unit root tests. The Fisher-type unit root test requires specification of Dickey-Fuller to test whether a variable has unit root. The null hypothesis is as follows: **Ho: All panels contain unit roots, the data are not stationary.**

Based on the results displayed in Table 4 the study rejected the Null hypothesis that the panel data contained unit roots at 5% significance level for all variables tested in in their first difference except Sharpe tested at level.

Panel-level heteroscedasticity test

To test for panel-level heteroscedasticity, the study adopted Wald test for heteroscedasticity. This involved first estimating the specified empirical model by OLS and then running the test against the null hypothesis of homoscedastic (constant) error variance Torres-Reyna (2007). The tests results could be summarized as the following.

Heteroscedasticity statistical results

```
Modified Wald test for groupwise heteroskedasticity

in cross-sectional time-series FGLS regression model


H0: sigma(i)^2 = sigma^2 for all i


chi2 (58) =    8.6e+05

Prob>chi2 =      0.0000
```

Source: calculated by the author using STATA 14

The results signify that the chi-square statistic was significant at 5 percent level and hence the null hypothesis of constant variance was rejected. This indicated presence of panel-level heteroscedasticity in the study data to correct this violation of classical linear regression assumptions, robust standard errors were used instead.

Panel data regression results

In order to establish which panel effects (between fixed and random) provided better estimation results for the study, Hausman test was carried out for the specified panel regression model as mentioned earlier in chapter three. The steps of running the model were as follows; first for the model we test for heteroscedasticity, serial correlation, stationarity problems and all the required data treatment was taken as shown above. Therefore, the estimated model is:

$$\begin{aligned}\mathrm{MFP}_{it} = {} & -0.515139(\log \mathrm{FS}_{it}) - 0.0732911 FAit + 0.4947928(\log \mathrm{TFE}_{it}) \\ & + 7.145312d2 + 7.020556d3 - 3.127336d4 \\ & - 0.8338711d5 - 4.034741d6 - 3.172d7\alpha + u_{it} + \varepsilon_{it}\end{aligned}$$

where MFP = Mutual fund performance where i = entity and t = time; FSit = Fund Size; FA_{it} = Fund Age; TFE_{it} = Total Fund Expense; d2: Equity; d3: Money Markets; d4: Fixed Income; d5: Islamic Funds; d6: Funds of funds; d7: Asset Allocator Funds; β = the regression coefficient for the independent variables; α = constant term; u_{it} = between entity error; ε_{it} = within entity error.

Results

This research concluded that Log NAV (Log fund size) has a significant negative impact on mutual fund performance this with confident 95%. The p-value is 0.006 (less than 0.05) and β coefficient equals −0.515139. The results were in line with [6, 17, 28, 32, 34]. Thus, there is a significant negative relation between fund size and mutual fund performance this is consistent with the results of [5, 11, 12, 18, 27, 38].

The researcher concluded that Fund Age has a significant negative impact on mutual fund performance, this with confident 95%. The p-value is 0.031 (less than 0.05) and β coefficient equals −0.0732. This is consistent with the results of [13, 30–32]. Thus, there is a significant negative relation between age and mutual fund performance.

The researcher concluded that fund type has a significant impact on mutual fund performance, this with confident 95%. The fund type is categorical qualitative variable thus studying the effect of each type separately was necessary. The results show that there is huge variation in the performance between different funds; where mutual fund performance for equity fund type is greater than balanced fund type by 7.145 on average, fixing all other factors this with confident 95%. Mutual fund performance for money markets fund type is greater than balanced fund type by 7.020 on average, fixing all other factors this with confident 95%. Mutual fund performance for fixed income fund type is less than balanced fund type by −3.13 on average, fixing all other factors this with confident 95%. On the other hand, mutual fund performance for funds of fund type is less than balanced fund type by −4.034 on average, fixing all other factors this with confident 95%. Mutual fund performance for assets allocator funds fund type is less than balanced fund type by −3.172 on average, fixing all other factors this with confident 95%. In general, the fund type has a significant impact on fund performance.

The researcher also showed that Log total fund expense has a significant positive impact on the mutual fund performance, this with confident 95%. The p-value is 0.015 and β coefficient equals 0.2785. This is consistent with the results of [4, 10, 13, 17, 19].

Discussion

This research aimed to analyze the effect of fund size, fund age, fund type and total fund expense on mutual funds' performance in Egypt. The researcher adopted a quantitative balanced panel data and secondary data to collect the data, the statistical analysis was used to analyze the data.

The findings revealed that fund size, fund age, and total fund expense had significant effect on mutual funds' performance in Egypt, the hypothesis stated that fund size had significant impact on mutual fund performance supported by the results, where fund size negatively and significantly related with mutual fund performance. When the log fund size increases by one unit, the mutual fund performance decreases units given that all other independent variables are constant. Which indicate that large funds size tends to suffer from poor performance because they may face diseconomies of scale due large volume of fund flow and difficulty in liquidating large volume of securities although fund manager will find difficulty in managing funds effectively and in understanding the characteristics that will affect fund performance. Thus, won't be able to develop successful strategies on how to increase funds' performance. However, some authors argued that after funds reach a certain size, they no longer care about maximizing returns. They suggested that liquidity and diseconomies of scale related to hierarchy costs cause size to erode performance.

The results showed that fund age was significantly related to fund performance. Fund age seems to reduce fund performance, implying that younger funds perform better than older ones. As youth funds are smaller in size so they won't face diseconomies of scale and the fund manager will be able to manage the fund more effectively than older funds. This may be also due to providing numerous incentives and investment friendly policies to spur growth of these younger funds.

In this research beside fund size and fund age, the results showed that Log total fund expense had a significant positive impact on the mutual fund performance that is there is a significant relationship between total fund expense and mutual fund performance. A mutual fund's expense is very important to investors because fund operating, and management fees can have a large impact on net profitability which may have an impact the mutual fund performance.

Professional managers charge higher cost fees because they are financial investment experts who use their knowledge, skills and experience to invest money on behalf of their clients. With the guidance of the fund manager, an individual investor will choose a fund based on their investment objectives, risk preference. They play an important role in the investment and financial world. Successful Fund Managers can lead their fund to outperform market indexes, generate significant returns and are in high demand.

Finally, fund type had significant impact on mutual fund performance as the results showed a huge variation in the performance between different funds due to the fund characteristics which don't have the same effect on each mutual fund type.

Investors should select the funds based on the investor's preferred risk level and return. There's no inherent reason that larger fund is performing better than smaller fund. Small fund size experience higher total expense ratios than larger funds because they can't take advantage of certain economies of scale. On the other hand, large size funds may suffer poor performance due to large volume of fund flow and diseconomies of scale due to the difficulty in liquidating large volume of stocks, plus the fund manager may not be able to manage the fund effectively. Larger funds have a benefit over smaller funds in terms of economies of scale and diversification in which they can pay fixed cost and have access to more resources.

However, the case in Egypt based on the research results showed that small funds size tends to perform better than large funds size, because of the small volume of funds flow there's no pressure on fund manager, the fund manager is more likely to have time to process information, identify investment opportunities, formulate investment strategies, and monitor the fund progress. However, that can't be the only indicator whether to invest in this mutual fund or to indicate the mutual fund performance.

From researcher point of view an investor, before investing in a fund needs to focus on the quality of the fund portfolio and how the fund has been doing vis-à-vis its benchmark as well as the peer group. It is always good to invest in a fund that has done well over a longer period because when we talk about considering a fund which has a good performance track record over a longer period, it basically confirms that the fund has the ability to perform in different market conditions. As an investor, it is very important for you to understand that it is the quality of the portfolio, or its investment strategy, which matters and not the NAV because the NAV can become high over a period of time.

Conclusion

This research attempted to investigate the effect of fund size on mutual funds' performance in Egypt, through analyzing the development of the funds' performance based on seven types of mutual funds in Egypt during 2012–2017. Research have selected 4 independent variables (fund size, total fund expense, fund type, and fund age).

The results showed that Log NAV (Log fund size) had significant impact on mutual fund performance. Thus, there is a significant negative relation between fund size and mutual fund performance. When the log fund size increases by one unit, the mutual fund performance decreases by 0.753 units given that all other independent variables are constant.

Age had significant impact on mutual fund performance. Thus, there is a significant negative relation between age and mutual fund performance. When the age increases by one unit, the mutual fund performance decreases by 0.147 units given that all other independent variables are constant.

Fund type had significant effect on mutual fund performance. The fund type is categorical qualitative variable thus studying the effect of each type separately was necessary. The results showed that there is huge variation in the performance between different funds. It's clear in Fig. 2 that money markets fund has the highest Sharpe with 12.8, while funds of funds and assets allocator funds had the lowest Sharpe with 1.5 which accept the alternative hypotheses H_3.

Finally, the result of fourth hypothesis testing showed that Log total fund expense had a significant impact on the mutual fund performance, this with confident 95% with p-value 0.015 and β coefficient equals 0.2785.

A major conclusion of this research is that the performance of mutual funds investing in the Egyptian stock market depends on the fund size of mutual funds Therefore, many investors like to invest in big funds because they feel they are more likely performing well, but the fact is you can't invest or pick a large size fund just because it's large, it must be performing good. Investors must choose the fund with a better track record whether it's a small fund or large fund. Thus, an investor should choose funds based on his/her preferred risk level, and since expenses influence performance, the investor should choose those funds that invest heavily on investment research.

Recommendations

Based on the research results it's highly recommended to invest in money markets mutual funds since it has the highest performance which make it a good investment for investors. Fund of funds and asset allocator funds are not a good choice for investors to invest in because they have the lowest performance. Based on the research results it's recommended in Egypt to invest in youth small funds rather than old large funds. Thus, that can't be the only indicator to pick or invest in mutual funds.

It's recommended to decrease the fund expenses related to large funds size, since mutual funds are mainly for small investors so high expenses will affect their choice. The bank should allocate more than one management company so there will be more availability of fund managers in which they will be able to manage the fund effectively.

Fig. 2 Means according to fund type

Abbreviations

MF: Mutual Funds; NAV: Net Asset Value; TNA: Total Net Asset; FA: Fund Age; FT: Fund Type; FS: Fund Size; TFE: Total Fund Expense; MFP: MutualFunds' Performance; EIMA: Egyptian Investment Management Association.

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Author contributions

S.F. and H.W. conceived of the presented idea. S.F. Contributed to the design and implementation of the research, to the collection of data, analysis of the results and to the writing of the manuscript. H.W. supervised the whole thesis. All authors read and approved the final manuscript.

Availability of data and materials

The datasets analyzed during the thesis are available in Egyptian Investment Management Association (EIMA): http://eima.org.eg/ and https://www.alborsanews.com/

Declarations

Competing interests

The authors declare that they have no competing interests.

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