Net Assets Value and its Determinants of Mutual Funds in Nepal: An Analysis of Monthly Returns

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Abstract

The research work has been conducted to examine the impact of age, total expense, total investment, and turnover ratio on financial performance of mutual funds in Nepal. Out of 29 mutual funds reported by Nepal Stock Exchange Ltd (as on 15 January, 2022), a total of 10 mutual funds following judgmental sampling technique have been selected as sample of the study. Samples are selected with the objective of getting 32 months data (from 12-Feb 2019 to 16-Sep 2021) resulted 320 observations. The required balanced panel data have been extracted from the monthly reports published on respective websites. Based on the regression result, it has been found that the age, total investment and turnover ratio have significant positive impact on net asset value but the magnitude of turnover ratio is negligible. However, impact of total expense on net asset value is positive but not found significant. The result can give mutual fund managers an insight on improving funds performance. On the other hand, the result can be helpful to investors in deciding their investment on mutual funds. Analysis with adding more variables will be beneficial in increasing the generalizability of the findings.

Keywords: mutual funds in Nepal, net assets value, performance determinants of mutual funds, analysis of monthly report

Introduction

A mutual fund is essentially designed to diversify risk for smaller savers who do not have enough money to achieve this diversification themselves. Professional management, diversification, simplicity, flexibility, and controlled liquidity are the major five benefits of mutual funds (Wyss, 2001). The primary goal of investing in mutual fund is to earn good return with comparatively low risk (Upadhyaya & Chhetri, 2019). History of mutual funds in Nepal can be traced back to the year 1993 where Nepal Industrial Development Corporation (NIDC) Capital Market started NCM Mutual Fund 2050 for the first time in Nepal (Rakhal, 2017). Though it has been a good history,

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Nepalese mutual funds have not performing above the benchmark indicators (Bajracharya, 2016).

As a result of good performance, investors expect high time value of money for the risk taken from the investment in mutual funds. On the other hand, from the view point of regulatory institutions and the management, mutual fund's performance is measured in terms of net assets value (NAV) over the period (Sharpe, Alexander, & Bailey, 1999), reward to volatility (Treynor, 1965), reward to variability (Sharpe, 1966), selectivity (Jensen, 1969), market timing (Treynor & Mazuy, 1966), portfolio diversification and month-end NAV (Upadhyaya & Chhetri, 2019).

NAV is a fund's per unit market value. It equals the per unit market value of the fund's assets minus its liability. The increase in NAV indicates that the investment value of shareholders per unit of investment is increasing, while if there is a decrease in NAV it means that the investment value of shareholders per unit of participation decreases (Komariah, Amalia, & Suhardi, 2020). Performance indicators of the mutual funds are performance persistence, turnover, expense ratio, asset size, load fee, investment style, mutual fund managers and the ownership style of the mutual funds (Goel, Mani, & Sharma, 2012). Performance persistence means that the performance of mutual funds depends on their past performance. Ferreira et al. (2013) found past performance of US funds is economically meaningful. Similar to the past performance, effect of age on performance can run in both directions. Chen et al. (2004) did not found any relation between age and performance of mutual funds. Though Ferreira et al. (2013) found result consistent with Chen et al. (2004), they found newer funds perform better than older outside the USA. In contrast, Lobao and Gomes (2015) found younger funds performing worse than funds that been in business for a longer period. However, in case of bond mutual fund, Philpot et al. (1998) found that the past performance does not predict future performance.

Similarly, total expense (TE) is a measure of the total costs associated with managing and operating an investment fund, such as a mutual fund. Expense ratio has been measured by funds monthly operating expenses (including management fees, distribution fees, license fees and other expenses). The total cost of the fund is divided by the fund's total assets to arrive at a percentage amount, which represents the total expense ratio. A fund's net asset value is reported only after deducting these expenses on a daily basis. If the expense is more than the return, then mutual fund can't perform well. So, to boost NAV, expenses must be minimized. Goel, Mani, and Sharma (2012) and Jan and Hung (2004) reported negative relation between expense ratio and the performance. However, Ferreira et al. (2013) reported statistically insignificant negative relation. In contrast,

Kaur (2018) also found insignificant effect of expense ratio on the performance of mutual funds.

Mutual funds invest with the objective of minimizing risk. Total investment is the sum of the aggregate capital contributions made by a mutual fund on different stocks, bonds and financial assets. Graham, Lassala, and Navarrete (2019) found US and European funds achieved good profit with large fund size. However, using data envelopment analysis (DEA) approach, Basso and Funari (2017) found no relationship between size and performance of European equity mutual funds. Though the difference in the performance scores between small and large mutual funds are found to be statistically significant. In a study using dynamic panel approach, Kaur (2018) found negative effect of size on fund performance. She added that the negative effect is a result of liquidity constraints that large funds generally face.

On the other hand, turnover ratio reveals the entire story about the buying and selling activity happening within mutual funds. A high turnover ratio indicates the funds following active investing strategy. Because of better stock-picking skill of managers of high-turnover funds, those funds perform higher than low-turnover funds (Warmers, 2000). In line with the finding of Kaur (2018), Silva, Roma, and Iquiapaza (2020) also found positive relationship between portfolio turnover and performance of the equity investment funds. Based on those earlier findings, this research has been conducted with the objective of examining the impact of age, total expense ratio, total investment, and turnover ratio on NAV (proxy of performance) of Nepalese mutual funds.

Research Methodology

The research work has been conducted to examine the impact of age, total expense, total investment, and turnover ratio on financial performance of mutual funds in Nepal. Financial performance is measured in terms of net assets value. Out of a total 29 mutual funds (as listed by NEPSE as on 15th January, 2022) in Nepal, 10 mutual funds have been selected as sample for the study. Samples are selected following judgmental sampling method. Only funds operating for more than 32 months are considered as sample. Thirty-two-month data (from 12-Feb 2019 to 16-Sep 2021) from each sample are taken for the analysis. Therefore, this study includes a total of 320 numbers of observations. The required balanced panel data have been extracted from the monthly reports published on websites of the respective sample units. As used by Philpot et al. (1998), the data is regressed using the time-series cross-sectional analysis model. In addition, data are transformed into natural log as per the requirement.

$$NAV_{it} = \beta_0 + \beta_1 Age_{it} + \beta_2 \ln(TE_{it}) + \beta_3 \ln(TI_{it}) + \beta_4 TR_{it} + \varepsilon_{it}$$

Where,

NAV_{it} represents net assets value of i th mutual fund for the t th month period

Age_{it} represents age of i th mutual fund for the t th month period

TE_{it} represents total expense of i th mutual fund for the t th month period

TI_{it} represents total investment of i th mutual fund for the t th month period

TR_{it} represents turnover ratio of i th mutual fund for the t th month period

ln represents natural log

β_0 represents the intercept of the regression line

β_1, β_2, β_3, and β_4 represent the regression coefficients

ε_{it} represents error component

Variables and Hypothesis

Dependent Variable

Net Assets Value of a fund is the market value of the assets minus the liabilities on the day of valuation. It represents per share intrinsic value of a mutual fund. In other words, it is the amount which the shareholders will collectively get if the funds are dissolved or liquidated. The net assets value of a unit is the net assets value of fund divided by the number of outstanding units.

Independent Variables

Age means the number of months the funds are operational. Among total mutual funds operating in Nepal, this research picked up 10 mutual funds that are operating in the market for more than 32 months with significant performance. As fund goes older, they are able to increase their risk bearing capacity to manage their fund and boost to maximize the profit. Based on the finding of Lobao and Gomes (2015) that younger funds perform worse than funds that been in business for a longer period, a hypothesis regarding the consequence of age on NAV has been developed as:

H_1: There is a positive impact of age on NAV.

Total Expenses is the cost of managing a fund that is expressed per unit. A fund's net asset value is reported only after deducting these expenses on a daily basis. Based on the findings of Goel, Mani, and Sharma (2012), the following hypothesis regarding TER and NAV has been developed for the study:

H_2: There is a negative impact of TER on NAV

Total Investment means the sum of the aggregate capital contributions made by a mutual fund on different stocks, bonds and financial assets to earn return along with

minimum risk. The investment on capital market is made with the objective of generating regular income. Graham, Lassala, and Navarrete (2019) found that the larger US and European funds achieve good profit. With the support of their finding, a hypothesis regarding the consequence of investment on return in terms of NAV has been developed as:

H_3: There is a positive impact of investment on NAV.

Turnover Ratio indicates the frequency with which the fund's holdings have changed over the past one year. A low turnover ratio indicates a buy and hold strategy which mean that the fund manager is confident about his stock purchase. A high turnover ratio indicated the funds following active investing strategy. After Jensen published a study in 1968 academics have debated whether fund manager who actively trade add value. Nevertheless, still some controversy exists (Wermers, 2000). In line with the finding of Kaur (2018) and Silva, Roma, and Iquiapaza (2020), a hypothesis regarding the impact of turnover ratio on NAV has been developed as:

H_4: There is positive effect of turnover ratio on NAV.

Results and Discussion

Correlation Analysis

The correlation between variables using 32-month's data of ten sample mutual funds from the monthly NAV report from 12-Feb 2019 to 16-Sep 2021 is presented in Table 1.

Table 1
Pearson Correlation Matrix of the Variables

	NAV	Age	TE	TI	TR
NAV	1.000				
Age	0.476	1.000			
TER	0.176	-0.047	1.000		
TI	0.740	0.412	0.227	1.000	
TR	0.054	0.020	-0.012	-0.0267	1.000

Note. Results are derived from the data analysis software 'Gretl'. Figure of total expense and total investment are transformed into natural log value.

As per the result, the correlation of NAV with all four determinant variables is found to be positive. The highest correlation of NAV is with total investment with regression coefficient value 0.740. On the other hand, magnitude of relation of turnover ratio with NAV is found to be least with 0.054 regression coefficient. The value of Pearson correlation coefficient between age and NAV is moderately positive. The highest value

of correlation coefficient between independent variables is 0.412 which also indicates that the multicollinearity problem does not exist in the data used.

Regression

The highest value of variance-inflating factor (VIF) is found to be 1.301, which indicates that that there is not existence of multicollinearity problem. As a rule of thumb, if the VIF of a variable exceeds 10, the variable is said to be highly collinear (Gujarati, Porter, & Gunasekar, 2012). Further, Durbin-Watson statistics (1.414192) and the zero value of rho (p) under Wooldridge test confirmed that there is no first order autocorrelation. It is found that the model is fairly fitted at 1% level of significance and a total of 57.85% of the variance on NAV is collectively explained by the predictor variables; age, total expense, total investment, and turnover ratio. Regression result examining the impact of determinant variables on NAV is presented in Table 2.

Table 2
Regression Results with NAV

Variable	Coefficient	Standard Error	t-ratio	P-value
Constant	-77.1555	5.19288	−14.86	0.0000 ***
Age	0. 05194	0. 00985	5.271	0.0000 ***
Total Expense	0.18148	0.16333	1.111	0.2674
Total Investment	6.20771	0.40195	15.44	0.0000 ***
Turnover Ratio	0.00009	0.00005	1.843	0.0663 *
R^2 = 0.583798	Adjusted R^2 =0.578513		F-stat = 110.4610	F-sig = 0.0000

Note. Results are derived from the data analysis software 'Gretl'

The regression result showed that the total investment has the greatest impact on NAV among four predictors. The coefficient 6.20771 at 1% level of significance indicates that the 1% change in total investment leads the NAV to 6.1769% (6.20771 * ln of 1.01) change to the same direction. The result is consistent with the findings of Graham, Lassala, and Navarrete, (2019). Similarly, the coefficient statistics revealed that the factor age ($t = 5.271$, $p = 0.000$) is also significant predictor of Nepalese mutual funds' performance. The coefficient 0.05194 denotes that the older funds perform better that the younger ones. The result as expected is consistent with the findings of Lobao and Gomes (2015).

However, though the effect of turnover ratio on NAV found to be statistically significant at 10%, the magnitude is negligible (0.00009). It specifies that the impact of turnover ratio on the performance of mutual fund is weak. The result is not found as per the

expectation made based on the report of Kaur (2018) and Silva, Roma, and Iquiapaza (2020). Surprisingly, on the other hand, total expense is not found significant in defining the variance of NAV. The coefficient result of total expense (coef. = 0.18148, t = 1.111, p = 0.2674) is found inconsistent to the findings of Goel, Mani, and Sharma (2012). Summary of the regression results and comparison with the hypotheses set is presented in Table 3.

Table 3
Summary of Regression Result using NAV Criterion

Predictor Variables	Expected Relationship	Reported Relationship	Significance
Age	Positive	Positive	Sig. at 1% level
Total Expense	Negative	Positive	Not Significant
Total Investment	Positive	Positive	Sig. at 1% level
Turnover Ratio	Positive	Positive	Sig. at 10% level

Conclusion and Implications

This study has been conducted to examine the impact of age, total expense, total investment, and turnover ratio on the performance of mutual funds in Nepal. NAV is taken as the proxy of the performance. To attain the purpose of the research, efforts have been made to consider representing from different aged mutual funds and data are extracted from the monthly NAV report of each sample mutual funds of Nepal. With the balanced panel data of 10 mutual funds for 32 months period, the regression result confirms the impact of age on NAV seems positive and statistically significant. It implies that the funds with longer maturity perform better than the short term mutual funds. On the other hand, it can also be generalized that the funds in their later period increase their NAV more than in the early age. In the same way, the impact of total expenses on NAV found positive. But due to having statistically insignificant result, the relation has not much strong evidence. Further, effect of total investment of funds found positive on NAV. It means that the funds with larger investment are able to generate bigger NAV. Similarly, the result in relation with turnover ratio also suggests that managers that use active investment strategy are able to better their performance in terms of NAV.

Though this research is based on a limited number of observations, the result leaves a significant input to the stakeholders. The study can be a good remark for policy makers and regulatory bodies in building, executing, and evaluating mutual fund related policies. Similarly, fund managers can get insight in adding features and plans while issuing fund in the market. Moreover, this study is sufficient to serve as landmark for the researchers interested in this field. Addition of other predictor variables such as macroeconomic

indicators, performance proxy variables and other analyzing tools can make the result more meaningful.

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