Original Article

Analysis of Consumer Reports' recommended mutual funds compared to actual performance

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ABSTRACT This study examines 60 mutual funds presented in the February 2007 issue of Consumer Reports. In addition, data for the same group of mutual funds were obtained as of 30 September 2008 to evaluate the recommendations provided in Consumer Reports. In order to exclude the major declines that occurred in the stock market in October 2008, the time periods of 30 November 2006 and 30 September 2008 were analyzed in this study. Specifically, this research examines the relationship between mutual funds' net assets, share prices, manager tenures, expense ratio, tax–cost ratio and annualized returns to see whether Consumer Reports is a reliable source for investors seeking to purchase mutual funds.

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Keywords: mutual funds; manager tenure; net assets; expense ratio; tax–cost ratio; annualized returns

INTRODUCTION

Consumer Reports has been published monthly since January 1936. It is generally regarded as a reliable reference for consumers to obtain various product ratings. This research focuses on the February 2007 article '60 Funds you can count on', which highlights the 60 mutual funds recommended by Consumer Reports.

The rapid growth in managed assets over the period of 1980–2004, along with the increased exposure of Americans to the stock and bond markets, has provided investors

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University of Texas at Arlington – Operations Management (PhD student), 716 Benge Dr Apt.#105, Arlington, TX 76013, USA E-mail: hui-chuan.chen@mavs.uta.edu with numerous choices in terms of types of funds, investing styles, risk and expense information.¹ Furthermore, mutual fund prospectuses customarily offer data on a fund's management expenses, return performance, marketing fees and loads, along with details of the portfolio's holdings.¹

Mutual funds provide a relatively low-cost way to achieve a well-diversified portfolio. Presently, a massive variety of investment options are now available to meet the needs of both individual and institutional investors. In fact, at the end of the fourth quarter, mutual fund assets worldwide increased 1.6 per cent to US\$26.20 trillion. In the third quarter of 2007, worldwide net cash flow to all funds was \$383 billion in the fourth

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quarter, up from \$316 billion.² With such a wide range of investment choices, ordinary investors must seek investment advice. Therefore, the objective of this article is to determine whether Consumer Reports provides a reliable reference for investors to choose the correct mutual funds.

Consumer Reports utilizes eight variables to determine its 60 most consistently successful stock mutual funds across six categories. These eight variables are: annualized returns 10-year, annualized returns 5-year, best/worst 12 months, expense ratio, tax-cost ratio, manager tenure, fund stewardship grade and minimum initial investment. Moreover, Consumer Reports utilizes these eight variables to rank each mutual fund based on its consistency of returns. In this study, five of the variables were selected for further analysis: annualized returns 10-year, annualized returns 5-year, expense ratio, tax-cost ratio and manager tenure - all of which have been widely studied for predicting mutual fund returns.

In addition, two more variables – net assets and share prices – as listed on the Yahoo Finance website are included to verify the datasets for this study. Therefore, seven variables will be evaluated to determine the quality of mutual fund returns as recommended by Consumer Reports. For this study, the time periods of 30 November 2006 and 30 September 2008 were chosen for analysis in order to avoid the major declines that occurred in the stock market in October 2008.

In the aftermath of the Dow Jones Industrial index falling to a low of nearly 6700 points in March 2009, many investors suffered massive losses. Fortunately, many affected investors have recently recovered some of their investment. Obviously, consumers rely on dependable instruments to assist in making correct decisions on mutual fund investments. This study examines whether Consumer Reports is a reliable financial services instrument capable of assisting consumers who seek to gain above average financial returns. In doing so, the data provided by Consumer Reports will be tested under theoretical analysis involving expense ratios, tax-cost ratios, manager tenures, overall returns, share prices and net assets. The results present valuable insight that consumers should compare various financial instruments as part of their investment decision-making processes, and not rely on a single source for major financial investments. Furthermore, this article establishes a benchmark for future studies on predicted mutual fund performance and actual results that will occur months and years later.

LITERATURE REVIEW

Expense ratio is the ratio of all expenses (management fees and operating expenses) to the funds assets. Gullett and Redman³ maintain that a negative relationship exists between expense ratio, and higher expenses will reduce risk-adjusted returns; hence, more cost efficient funds should generate higher returns when all other elements are held constant. Furthermore, Khorana⁴ maintains that the overall effect of reducing total fund expenses leads to a higher level of price sensitivity with a greater of economic scales of investors.

Also, Rao and Schaub⁵ recognized that in 89 per cent of the cases, funds with lower expense ratios than their counterparts outperform those with higher expense ratios. Lower expense ratios cannot guarantee better performance; however, when investors choose funds with low expense ratios, they generally have a better chance of receiving greater overall returns. Moreover, Haslem et al⁶ point out that management fees account for the largest parts of expense ratios and reveal a positive effect on the expense ratio. Furthermore, investors are likely to purchase higher performing mutual funds; for example, the mutual fund companies can use the extra money to cover fixed costs, which, in turn, should assist in reducing the expense ratios. Therefore, when funds sizes are

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increasing, the managements become more efficient in operating from economies of scales by reducing the expense ratios.⁶ Thus, fund asset size and performance have a positive relationship.

Indro *et al*⁷ report that an increase in net assets provides cost compensation because growth raises net returns. Brokerage commissions will decrease when trading in larger firms owing to larger transaction volume. Therefore, it is expected that valuable resources, including data, research services or supports and overhead costs can be shared. When fund sizes are increasing, a fund manager can focus more on strategies or investing in a more aggressive scenario. Therefore, 'total net assets' is also one of the variables for applying under this research. Gullett and Redman³ state that larger funds earning higher returns would be an indicator of economies of scale in mutual funds because funds with greater assets would achieve a lower management expense per dollar of assets. In addition, investors are required to pay for gains that are not tax deferred and are extra expenses, which reduce the returns for investors.⁸ Nevertheless, the receipt of taxable interest and dividends is another tax benefit for a mutual fund, which produces a taxable result for the investor. The fund's management has the responsibility to insure that investors do not suffer any unnecessary tax liability.8

Fortin *et al*⁹ found that manager tenure and turnover have a negative relationship. However, manager tenure and mutual funds size are positively related. Therefore, investors are advised to consider factors (other than manager tenure) in light of other investment elements, which might affect performance – namely, turnover, fund size and expense ratio. Haslem *et al*¹⁰ proposed that retail S&P 500 Index funds with low net expense ratios also lean toward higher annualized returns compared with those with net expense ratios that are high. Therefore, lower costs mean larger returns.

DATA

The data for the present study were obtained from the February 2007 Consumer Reports article titled '60 Funds you can count on'. The data include 60 mutual funds, which Consumer Reports ranks as the most consistent in returns. Consumer Reports took the most current 10 years of stock-fund performance data compiled by Morningstar and then analyzed that data through a series of dependability tests. As in 2005, the various mutual funds were ranked based on how many quarters they beat the S&P 500 (or the Russell 2000, in the case of small-cap) rather than their annualized averages.¹¹

Consumer Reports¹¹ also looked at management tenure and fund expenses, which often take an unnecessary portion of returns. Those indexes consist of a total of 60 funds as of 30 November 2006; 20 largecap funds, five mid-cap funds, eight smallcap funds, 12 asset-allocation funds, nine global funds and six sector funds from the Morningstar website. The stocks of the 3000 largest companies comprise the broad-market Russell 3000 Index, whereas the largest 1000 of those companies make up the large-cap Russell 1000 Index; likewise, the bottom 2000 (the smallest companies) make up the small-cap Russell 2000 Index.¹² The asset-allocation funds attempt to manage returns by using different asset allocation strategies, depending on current economic conditions.13

A sector fund offers a concentration in a particular industry, such as computers or tobacco. A sector fund might be chosen because of the bright future of a particular industry.¹⁴ For this study, additional data (including net assets and share prices) was added to the 30 November 2006 dataset.

Additional data of 30 September 2008 was added to the 2008 dataset with 10-year annualized, 5-year annualized, expense ratio, tax-cost ratio, manager tenure, net assets and share prices. The data collected for the 2008 dataset were obtained at Yahoo Finance. Items include net assets, expense ratio and

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share prices. The 10-year annualized, 5-year annualized and tax–cost ratio was collected from Morningstar. As for the manager tenure variable, one extra year was added for year 2008's manager tenure variable.

HYPOTHESES AND METHODOLOGIES

The variables used, along with their characteristics, are described as follows. 'Manager Tenure' represents the actual number of years that the fund manager is accountable for a certain fund. 'Expense ratio' is a percentage of the net asset divided by the total fund expenses. Also, Consumer Reports¹¹ (p. 20) states that 'tax-cost ratio is a percentage point reduction in a fund's annualized 10-year return due to tax liability'.

Share price is used as the adjusted value, which are the closing prices as of 30 November 2006 and 30 September 2008 adjusted for dividends and splits. Regression techniques are utilized to process the data. A total of six hypotheses will be tested, based on the data collected for this study.

Golec¹⁵ found that yield and tenure are significantly positively related; however, other research shows that no relationship exists. The results obtained by Porter and Trifts¹⁶ (p. 63) indicate that 'experienced managers, on average, perform no better than their less experienced peers for the sample period'. Fortin *et al*⁹ reached the same conclusion, finding no significant difference at the 5 per cent level in manager tenure. It is further suggested that these results demonstrate that investors should look further than manager tenure and consider other investment variables, such as reliability of return, investment objective, turnover, expense ratio and fund size. Haslem *et al*⁶ noted that while no consensus exists regarding the relationship between fund asset size and portfolio manager tenure, a generally positive relationship was expected. Furthermore, Golec¹⁵ encourages investors seeking high yields should avoid funds with

large management fees and choose larger funds exceeding \$280 million with longtenured management.

Hypothesis I: Longer manager tenure is associated with lower expense ratios.

Manager tenure and expense ratio are examined in Hypothesis I. As larger funds tend to have lower expense ratios, it is expected that a negative relation between tenure and expense ratio class will be observed. Khorana⁴ also found that higher past return volatility and higher fund expenses have a negative and statistically significant impact on net asset flows. These results are similar to the findings of Kim et al¹⁷ who found that tax liabilities on unrealized capital appreciation do not show up in net asset value (NAV), as predicted by the theory of capital gains tax liabilities. However, Dowen and Mann⁸ found a positive and significant relationship between tax cost and return; specifically, fund management cannot generate returns without creating tax costs for the shareholders of the fund. Overall, relatively few research studies discuss the specific tax-cost ratio and net assets.

Hypothesis II: Higher net assets will be associated with a lower expense ratio, longer manager tenure and lower tax-costs.

In order to evaluate Hypothesis II, a regression analysis between net assets, expense ratio, manager tenure and tax–cost ratio for year 2006 and 2008 was conducted. It was expected that the expense ratio and tax–cost ratio would show a negative relationship with net assets. As discussed by Indro *et al*⁷ an increase in the size of net assets provides cost advantages as overall growth produces an increase in net returns; that is, because transaction volume is relatively large for the larger funds, brokerage commissions on the execution of trades for

large firms are comparatively lower. In addition, the expenses of using the data, research services and support, as well as overhead and administrative costs, do not increase in direct amount to fund size.

Hypothesis III: Higher share prices will be associated with a lower expense ratio, longer manager tenure and lower tax-costs.

It is predicted that share prices will be negatively correlated with expense ratio and tax–cost ratio but positively correlated with manager tenure. Tsai *et al*¹⁸ (p. 572) confirmed that 'fund share prices and NAVs are cointegrated for virtually all the funds', which indicates a long-term relationship in which underlying assets and fund share prices will 'trend together' over extended periods.

Hypothesis IV: 'Net assets' is positively associated with share prices.

For Hypothesis IV, share prices for both 2006 and 2008 are tested with net assets (fund sizes) and a positive relationship is expected. Similarly, Kim et al¹⁷ suggest an explicit relationship between the share price and NAV of closed-end funds. Haslem et al⁶ states that the probability of a fund reaching a positive risk-adjusted return raises as its expense ratio decreases, leading many professionals to conclude that investors would be more comfortable in low-cost passively managed index funds. Also Gottesman and Morey¹⁹ found a general relationship between lower fees and improved performance; moreover, investors searching for outstanding fund performance will find that index funds are worthy of consideration. Likewise, Houge and Wellman²⁰ point out that different from other consumer products, higher mutual fund costs are not linked to higher quality. In fact, the opposite is true; all else equal, higher operating expenses will lower fund returns. On the other hand, studies by

Dowen and Mann⁸ show that no apparent relationship exists between the expenses ratios and returns for equity funds. Finally, Houge and Wellman²⁰ state that mutual funds aggressively advertise historical performance but rarely compete on expenses; moreover, while such fees have a direct impact on long-term returns, relatively few investors can calculate the annual expenses of their holdings.

Hypothesis V: Higher expense ratios will be associated with lower returns.

It is predicted that expense ratios will have a negative relationship toward annualized returns with 10-year and 5-year annualized amounts for both years. Other studies show a negative relation between fund net returns and expense levels.⁶ Therefore, a negative relation between expense ratios and performance is expected in this current study.

RESULTS

For Hypothesis I, expense ratio is tested as the dependent variable (DV) and manager tenure as the independent variable (IV). The results in Table 1 show that there is a negative relationship between manager tenure and expense ratio for both 2006 and 2008 output. This is in support of Hypothesis I.

The following regression model is used to estimate the characteristics of net assets as DV and expense ratio, manager tenure, and tax-cost ratio as IVs, which may explain the relationship for Hypothesis II:

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Net Assets (Transformed) = b_0 + b_1 (expense ratio) 
+ b_2 (manager tenure) 
+ b_3 (tax-cost ratio) + e
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(1)

Furthermore, the results of testing Hypothesis II are presented in Table 2. Both 2006 and 2008 have adjusted *R*-squared values (0.416 and 0.378, respectively). The 2006 data

Dependent variable: Expense ratio		Intercept	Manager tenure	Adjusted R-sqrd	F statistic	
11/30/2006	Coefficient Probability	1.126 0.000	-0.012 0.033*	0.06	4.76 0.033	
09/30/2008	Coefficient Probability	1.056 0.000	-0.10 0.064*	0.042	3.556 0.064	

Table 1: Hypothesis I

*Significant at the 0.10 level.

Table 2: Hypothesis II

Dependent variable: Net assets		Intercept	Expense ratio	Manager tenure	Tax–cost ratio	Adjusted R-sqrd	F statistic
11/30/2006	Coefficient Probability	4.430 0.000	-1.353 0.000*	0.027 0.015*	-0.003 0.657	0.416	15.028 0.000
09/30/2008	Coefficient Probability	4.202 0.000	-1.318 0.000*	0.028 0.014*	0.012 0.939	0.378	12.938 0.000

*Significant at the 0.10 level.

reveal that net assets have a negative relationship with expense ratio and a positive relationship, as longer manager tenure will assist higher net assets value. In addition, the outcomes shown in Table 2 present a negative relationship with net assets and tax-cost ratio. However, the relationship between 2008 data for tax-cost ratio is positive, which is inconsistent with 2006 results with a negative relationship. Therefore, the Hypothesis II is only supported for expense ratio and manager tenure.

Likewise, the following regression model is used to estimate the characteristics of share prices as DV and expense ratio, manager tenure and tax–cost ratio as independent variables (IVs), which might explain the relationship for Hypothesis III:

> Share prices = $b_0 + b_1$ (expense ratio) + b_2 (manager tenure) + b_3 (tax-cost ratio) + e

The results for Hypothesis III are provided in Table 3 with share prices as the DV and expense ratio, manager tenure, and tax-cost ratio as IVs. The overall models for both year 2006 and 2008 data are statistically significant. Nevertheless, upon closer investigation, share prices are shown to have a negative relationship with expense ratio for both years. However, only 'tax-cost ratio' for year 2008 exhibits a statistically significant with share prices along a negative relationship. Compared with Hypotheses II and III (with different DVs net asset values and share prices), the results for expense ratio are similar. However, as for manager tenure, a non-significant relationship exists with share prices in Hypothesis III. Therefore, the results indicate some inconsistency for Hypothesis III.

Hypothesis IV (see Table 4) includes share prices as the DV and net assets as the IV. The overall model is statistically significant – approaching the 0.10 level for both 2006 and 2008 (0.034 and 0.043), respectively. Such results indicate that a positive statistical significance exists between share prices and net asset value.

Hypothesis V (see Table 5) measured 'expense ratio' as the DV with 'annualized return 10-year' and 'annualized return

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(2)

Table 3: Hypothesis III

Dependent variable: Share prices		Intercept	Expense ratio	Manager tenure	Tax–cost ratio	Adjusted R-sqrd	F statistic
11/30/2006	Coefficient Probability	48.567 0.000	-20.193 0.013*	-0.325 0.347	0.270 0.149	0.124	3.786 0.015
09/30/2008	Coefficient Probability	72.198 0.000	-23.252 0.000*	-0.232 0.357	-17.260 0.000*	0.404	14.324 0.000

*Significant at the 0.10 level.

Table 4: Hypothesis IV

Dependent variable: Share prices		Intercept	Net assets	Adjusted R-sqrd	F statistic	
11/30/2006	Coefficient Probability	0.836 0.942	7.035 0.034*	0.059	4.727 0.034	
09/30/2008	Coefficient Probability	2.093 0.837	6.083 0.043*	0.053	4.297 0.043	

*Significant at the 0.10 level.

Table 5: Hypothesis V

Dependent variable: Expense ratio		Intercept	Annualized return 10-year	Annualized return 5-year	Adjusted R-sqrd	F statistic	
11/30/2006	Coefficient Probability	0.284 0.167	0.048 0.022*	0.012 0.297	0.157	6.476 0.003	
09/30/2008	Coefficient Probability	0.466 0.000	0.057 0.000*	-0.020 0.057*	0.190	7.940 0.001	

*Significant at the 0.10 level.

5-year' as IVs to provide an overall statistically significant level for both 2006 and 2008 (0.003, 0.001, respectively). The results show a positive statistical significance between expense ratio and annualized return 10 year. However, other research studies support Hypothesis V in that 'expense ratio' and 'annualized return' should have a negative relationship toward each other. For annualized return, the results show 5 year with non-significant probabilities for 2006 data; therefore, Hypothesis V is not supported.

CONCLUSIONS AND FUTURE RESEARCH

Manager tenures and expense ratio offer a negative relationship for both 2006 and 2008 datasets. The net assets with expense ratio, manager tenures and tax-cost ratio also suggest a negative relationship between net assets and expense ratio but a positive relationship between net assets and manager tenures for both years. This is consistent with the literature review. However, no significant relationship was shown between net assets and tax-cost ratio. Such a finding indicates that tax-cost ratio may not be a good indicator for determining the mutual funds' returns from Consumer Reports.

Adjusted share prices are also examined in regard to expense ratio, manager tenure and tax-cost ratio to assess the relativity. Thus, only expense ratio can determine the relationship with share prices. Moreover, the relationship between share prices and tax-cost ratios is only consistent with the 2008 dataset. Furthermore, the share prices and net assets provide a positive, significant relationship. As Consumer Reports did not include share prices or net assets in their assessment to determine the consistency of the mutual funds' return, investors will need to take caution when referring to Consumer Reports as their decision-making tool. When expense ratio and annualized return are taken into account, the outcome only provides a significant positive relationship with 10-year annualized return. However, a negative relationship should be expected even though some research supports a positive relationship between expense ratio and annualized returns; in conclusion, the majority of the literature supports a negative relationship.

Overall, this research provides some indication that Consumer Reports may not be a reliable indicator for investors seeking to improve their investment decisions. Hence, consumers must utilize all available resources to make accurate financial investment decisions as a way of concluding whether the mutual funds recommended each year by Consumer Reports provide investors with long-term profit and returns. Notably, the data information for 2008 is only until 30 September – a short time before the US Dow Jones Industrial Average dropped well below 10000. The results might be different if researchers investigate data after 30 September 2008. Finally, future researchers may wish to build upon the design of this study to investigate results of mutual funds over subsequent time periods.

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