

Are Actively Managed Funds Really that Bad?

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Project Summary

The literature has tended to cast active managers in a fairly poor light. While, undoubtedly, there are active managers who perform poorly after adjustment for risk there are active managers who perform strongly. We argue that studies using size-based, or style-based portfolios, to minimise survivorship bias or those assuming constant portfolio risk over time cannot properly address the question of whether active funds achieve abnormal performance. Instead, we will use a Kalman filter to estimate the time series variation in mutual fund performance measures with emphasis on individual fund performance for the time that they are in existence.

Discussion

Active funds have been accused of churning. Active funds have also been accused of behaving like expensive passive funds with the criticism that they tend to track the index rather than take speculative positions. This project focuses on measuring the performance of individual active funds, taking into account the time changing nature of the performance measures that these funds generate. In achieving this goal it is necessary to correct returns for risk and it is also important to correct for the possibility of changes in the underlying performance measures over time.

Performance evaluation of mutual funds is an important topic both in the economics and finance literature and it has an immediate impact on practitioners. The search for an appropriate adjustment for risk when ranking fund performance begins with the path breaking work of Treynor (1965), Sharpe (1966) and Jensen (1968). This is further extended with development of multifactor models. Examples include the Gruber (1996) four-factor model, the Carhart (1997) four-factor model and the Grinblatt and Titman (1989) eight-factor model.

The models described so far assume that the fund managers do not actively time the market and so a further set of risk adjusted performance models have been developed to deal with timing. The work of Treynor and Mazuy (1966) and Henriksson and Merton (1981) provide a framework for assessment of both timing ability and asset selection ability and specific adjustment for time changing risk or expected returns is provided in Ferson and Schadt (1996) and Ferson and Warther (1996).

The problem of survivorship bias has also been identified in the literature (Brown, Goetzmann, Ibbotson, and Ross, 1992) and while this is a critical problem in assessing whether funds generally earn abnormal returns on average it should have little to do with testing the abnormal performance of individual active funds over time.

The question of whether mutual funds generate abnormal returns is of considerable significance. There is a considerable literature that criticises active managers and a similarly considerable literature that supports them (particularly Gruber, 1996 and Pastor and Stambaugh, 2002) yet much of the prior research has

been based on the creation of portfolios constructed to avoid survivorship bias. We argue that it is this portfolio creation process that reduces the chance of finding superior active managers and so we focus on individual fund performance rather than portfolio performance.

We extend on the work of Ferson and Schadt (1996) and Ferson and Warther (1996) who argued that it is critical to adjust for time changing fund beta in any test of firm performance. We are interested in the time variation in excess performance that is exhibited by active funds, as well as time variation in the other parameters. For example, it is quite possible that an active fund may achieve the average for its cohort over much of the year and then take a series of informed speculative positions that result in abnormal returns for the overall period. Unlike the current literature we are interested in how individual fund alphas vary through time rather than focusing on the alpha calculated for a portfolio of funds.

Approach

Fund return data is obtained from Morningstar with all funds being accessed, rather than just surviving funds. Various abnormal return measures are calculated including the Jensen, Gruber, Cahart, Treynor and Mazuy and Ferson and Schadt or Ferson and Warther measures. These performance measures will be estimated within a Kalman filter model to obtain time series estimates of the various performance measures and other parameters in the model. Appropriate standard errors will be estimated within this modelling approach and statistical tests will be conducted on these time series to identify whether individual funds do exhibit abnormal performance. The key objective of this project is to estimate time changing conditional performance measures. Failure to correctly account for time changing behaviour in these estimates will result in biased estimates (Lo, 2002) in the case of measures such as the Sharpe ratio or biased tests using a similar argument to that adopted in Ferson and Schadt (1996). The general form of the model is taken from Hamilton (1994, pp. 399-403))

$$\begin{aligned}\xi_{t+1} &= F(x_t)\xi_t + v_{t+1} \\ y_t &= a(x_t) + [H(x_t)]'\xi_t + w_t\end{aligned}$$

Where $F(x_t)$ is an $(r \times r)$ matrix whose elements are functions of x_t , $a(x_t)$ is an $(n \times 1)$ vector-valued function, and $H(x_t)$ is an $(r \times n)$ matrix-valued function. The residuals terms, v_t, w_t , are normally distributed, uncorrelated with each other, have zero mean with variance that is a function of x_t . This model will be used to estimate time varying performance measures for individual funds using all available data for each fund. We are interested in identifying when, and how often, active funds exhibit unusually large increases or decreases in risk adjusted performance on a month-by-month basis.

This analysis also identifies the volatility of the performance measures over the available data set as the Kalman filter technique provides a measure of parameter stability. Thus we will also be able to get some sense of just how aggressive active funds are and whether periods of aggressive trading are time specific, fund specific or driven by some other variables such as the level of the equity market or the level of interest rates. These additional variables, such as the equity market index and interest rates, will be obtained from Datastream.

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