Alphas: A Case Study in International Institutional Mutual Funds

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Abstract

For a sample of 64 international mutual funds, we examine fund drift and alpha measures over the period 2005-2016. While previous studies typically use broad market indices to benchmark fund performance, we use tradeable ETFs that invest in the same categories as the funds. Furthermore, we introduce an additional emerging markets benchmark to capture any deviation from the fund's stated categories. We show empirically that managers deviate from their stated fund categories, with subsequent upward bias to their fund alphas. The addition of the emerging market ETF into our regression analysis enables us to capture a deviation of approximately 13% to the emerging market fund category. We also find that alpha is biased upward on average 44 basis points for approximately half the funds examined.

Keywords: international funds, style drift, benchmarks, alpha; institutional

1. Introduction

Style drift occurs when a mutual fund deviates from its primary investment objective. When fund managers deviate from their stated categories or objectives, investors are subject to unanticipated risks. In 2001, the SEC adopted rule 35d-1 (the "Names Rule") under the Investment Company Act of 1940. This rule requires registered funds to invest at least 80% of their assets in investments consistent with their name. According to the SEC, "the rule also would address names suggesting that an investment company focuses its investments in a particular country or geographic region."

In fund prospectuses, investment objectives are generally broad enough to provide funds with at least some degree of flexibility. Nevertheless, the SEC notes that fund names are often the first piece of information investors see and they can have a significant impact on an investment decision. In March 2020, the SEC requested comment letters on, "whether the current requirements in rule 35d-1 are effective and whether there are viable alternatives that the Commission should consider". This issue is not only a cause for concern for retail investors. Froot and Teo (2008) note that institutional investors tend to make investment decisions at the style level. Similarly, Bams, Otten, and Ramezanifar (2016) note that, "style deviation is also relevant to institutional investors who diversify their portfolios by holding several mutual funds with different investment styles".

Our study examines the presence of drift for 64 international institutional mutual funds. The primary investment objective of these funds is to invest in developed countries. We measure fund performance and, importantly, show how the results differ with the inclusion of an additional index to capture drift to emerging markets.

The academic literature on mutual funds is extensive, with a heavy focus on the performance of active U.S. equity funds. Early studies by Friend, Brown, Herman and Vickers (1962) and Jensen (1968) concluded that mutual funds underperformed broad market indices. This result was at odds with the dramatic growth of the mutual fund industry at the time. In an attempt to explain this apparent inconsistency, subsequent studies have continued to focus on fund manager skill and, relatedly, the extent to which performance persists over time.

Grinblatt and Titman (1989, 1993) find some evidence to support the notion that mutual fund managers are skilled. On the other hand, Carhart (1997) found no such evidence. Fama and French (2010) find that although some fund managers do outperform the market, the returns generated do not compensate for their costs. With regards to performance persistence, Malkiel (1995) argued that performance persistence varies through time and that survivorship bias explains a significant amount of this persistence. Research by Bollen and Busse (2005) suggests

that superior fund performance is a short-lived phenomenon. Berk and Binsbergen (2015) however conclude that the average manager is skilled, and that cross-sectional skill differences persist for up to 10 years. While no broad consensus has emerged regarding performance, a recent study by Cremers, Fulkerson, and Riley (2019) suggests that the general sentiment that fund managers do not add value is unfounded.

One area where there appears to be consensus however, is the presence of style drift. An early paper by Brown and Goetzmann (1997) documented this phenomenon in the U.S. market. It has also been documented in other markets such as South Africa (diBartolomeo & Witowski, 1997), Australia (Holmes & Faff, 2007) and China (Chua, Tam & Tan, 2018). As previously mentioned, style drift exposes investors to unexpected risk. What is less clear however is whether drift results in improved fund performance. Previous studies have found that fund managers who stray further from their benchmarks provide higher risk-adjusted returns (Cremers & Petijisto, 2009), and Wermers (2012). In contrast, Brown, Harlow and Zhang, (2015) conclude that funds with lower levels of style volatility outperform funds with higher levels of style volatility. In a more recent study, Cao, Iliev and Velthius, (2017) provide evidence that while deviating small-cap mutual funds do not provide investors with higher abnormal returns or performance persistence, they did outperform their peers by 3% annually.

Compared to studies of U.S. mutual funds, there is considerably less research on the performance of foreign and international mutual funds. The results from this research however, are also mixed. While some studies find no evidence of positive abnormal returns (Cumby & Glen (1990), Droms & Walker (1994), Tsai & Wu (2015)) others find that performance results depend on the benchmark index used for comparison (Eun, Kolodny, & Resnick, 1991). Other papers have found consistent evidence of abnormal performance (Redmen, Gullet, & Manakyan, (2000), Boudreaux, Uma Rao, Ward & Ward, (2007)) but reach different conclusions regarding performance persistence. In a study of international equity funds, Droms and Walker (2001) find statistically significant performance persistence for very short-term (1-year) holding periods only. In contrast, Otten and Bams (2002) find positive net alphas for European mutual funds (especially small cap funds), and detect strong persistence in mean returns specifically for funds investing in the UK.

While style drift has been heavily researched the context of U.S. equity funds, and has been detected in other foreign markets, we are unaware of previous studies that have investigated drift for international institutional mutual funds. In this study, we document the presence of significant drift for our sample of mutual funds. In an attempt to more accurately measure fund alphas, we incorporate an additional index (over and above the benchmark index) to capture where the funds drift to. This approach results in alphas that are significantly lower than would otherwise be obtained. We also contribute to the literature by moving away from past studies that employ theoretical, non-tradeable, benchmarks in their models (Eun et al., 1991, Redmen et al., 2000). Instead of broad market indices, we utilize investable ETFs as our performance benchmarks for the funds examined.

The remainder of the paper is organized as follows: In section 2, we present our hypotheses, taking into consideration previous literature that looks at mutual funds both domestically and internationally. Section 3 details the data used in our study along with our empirical model for measuring mutual fund performance and drift. Section 4 presents our empirical results. Finally, section 5 concludes the paper with suggestions for further study.

2. Hypothesis Development

Wermers (2012) finds that the equity style orientation of an institutional portfolio has a large influence on its yearly returns. Subsequently, he develops a measure that decomposes style drift into components capturing the dimensions: size, book-to-market, and price momentum. Bams et al., (2016) also find that fund managers consistently deviate from the investment style specified in the fund prospectus highlighting the issue of fund drift. If managers seek higher returns, then this deviation will potentially be measurable as a shift to riskier stocks and may be captured by an emerging market index for international institutional funds. We anticipate that active managers in the international institutional fund arena will drift from their stated category, in this case the MSCI EAFE Index (EFA). This leads us to our first hypothesis:

H1: International mutual fund managers deviate from their stated sector to the emerging markets sector

It is evident that benchmarks play a key role in evaluating mutual fund performance and mangers. In order to use a benchmark upon which to compare a fund, Bailey (1995), proposes that a benchmark should be one that sizes up the competition. Specifically, he states that a benchmark should be unambiguous, tradeable and measurable. These criteria allow the researcher to select the most appropriate benchmark against which to compare the manager.

Pastor & Stambaugh (2002b) show that the addition of an unpriced benchmark can improve the inference about a manager's skills. In the context of international funds, if a manager were to deviate some of their holdings from the

developed fund category to the riskier emerging market category, this would necessitate an additional benchmark component in order to accurately measure this drift. We contend that once we introduce this additional benchmark to the analysis, we can more accurately capture the alpha or excess return generated by that fund. This leads us to our second hypothesis:

H2: Alpha will decrease with the inclusion of an emerging markets index

We use an ETF that tracks the MSCI Emerging Markets Index in order to better measure the drift for our funds.

3. Data and Methodology

3.1 Data

There are several types of funds that asset management (AM) companies can offer to their different clients. In very general terms the two types of clients AM companies serve are: (i) individuals and (ii) institutions. The stock selection is the same but the fees associated with the funds differ. For individual funds there are in general three types of funds, (i) A-Funds: slightly larger annual fees and an up-front commission called the load of the fund that in general is about 5.75%. (ii) B-Funds: these funds have much larger annual commissions and a back-end commission also equal to 5.75%, that declines to zero after five years. If the client keeps the investment with the company for the full five years, the commission will be waived. (iii) C-Funds will have somewhat larger commissions than A funds and a 1% upfront load. The funds with the lowest annual commissions are the institutional funds where costs are essentially passed on to clients. In this study, we examine international institutional mutual funds where the minimum investment is over a million dollars and there are no loads. As such, we do not have to make return adjustments to prorate loads according to the holding period of the investor.

Using the criteria above to select our sample of mutual funds, we obtain monthly data from the Bloomberg database for the period June 2005 thru July 2016. These include monthly returns for: 1. 64 international institutional funds 2. The MSCI EAFE Index (EFA) which is a stock market ETF that is designed to follow the equity market performance of developed markets outside of the U.S. (without Canada), 3. The MSCI EM Index (EEM), which is a stock market ETF designed to follow the equity market performance in emerging markets, and 4. SHY which is an ETF that invests in short term US treasuries and proxies for our risk free rate of return. Descriptive statistics for our regression variables are shown in Table 1.

Table 1. Descriptive Statistics for Independent Variables June 2005-July 2016

	EFA	EEM	SHY
Average Return Monthly	0.48%	0.74%	0.18%
Average Return Annual	5.79%	8.85%	2.11%
Standard deviation	21.29%	21.81%	1.64%

3.2 Modelling Fund Performance

In order to model fund performance, we compute the monthly percentage changes in our variables as the log difference between the current and previous month's data. We use excess monthly returns by subtracting the SHY (risk free rate) from both the EFA and the EEM as well as from the returns for our 64 institutional fund. The variables for our regression are outlined in Table 2 below:

Table 2. Regression Variables

Symbol	Regression Variable Description
R_{fund}	Excess monthly fund returns
R_{EFA}	Excess monthly returns on the MSCI EAFE ETF
R_{EEM}	Excess monthly returns on the MSCI EM ETF
α_{1fund}	Alpha for each fund in simple regression
α_{2fund}	Alpha for each fund in multiple regression
$\beta_{fund-EFA}$	Coefficient on the MSCI EAFE monthly excess returns
$\beta_{fund-EEM}$	Coefficient on the MSCI EEM orthogonal component
$\beta_{EEM-EFA}$	Coefficient on the MSCI EAFE on the MSCI EM

Our goal is to compare institutional international asset managers against the ETF's that invest in the same categories as their respective funds. Any deviation from the EAFE into riskier stocks should be captured by using the EEM as an additional benchmark. Our initial regression (equation 1) computes the regression before the addition of the emerging market benchmark. We regress excess monthly returns of each fund on the excess monthly returns of the MSCI EAFE (ETF):

$$R_{fund} = \alpha_{1fund} + \beta_{fund\text{-}EFA}\ R_{EFA} + \varepsilon \tag{1}$$

The next step of the analysis requires 2 separate regressions equations in order to (1) determine if there is a drift to emerging market stocks and (2) compute the bias to alpha for those funds that have a significant coefficient on the emerging market variable used in our analysis. Equations (2) and (3) below are used to accomplish this analysis:

$$R_{EEM} = \beta_{EEM\text{-}EFA}\ R_{EFA} + \varepsilon_{EEM} \tag{2}$$

$$R_{fund} = \alpha_{2fund} + \beta_{fund\text{-}EFA}\ R_{EFA} + \beta_{fund\text{-}EEM}\ \varepsilon_{EEM} + \varepsilon \tag{3}$$

ε_{EEM} (equation 2) is the "orthogonal" component of the emerging market ETF return with respect to the EAFE ETF. By using the orthogonal component, we can statistically capture any deviation to the emerging market index in equation (3) while addressing the presence of multicollinearity in the 2 independent variables. A significant coefficient on the $\beta_{fund\text{-}EEM}$ indicates that the EEM ETF provides additional explanatory value in the institutional fund's return and excess return to the individual funds is now captured by α_2. For those institutional funds with a significant beta on the EEM variable, we then compute (α_1- α_2) to illustrate the upward bias in performance measures for that fund.

4. Results

We conduct our analysis over the period June 2005 to July 2016. A summary of our findings can be found in Table 3 below.

Table 3. Regression Results

Time Period	6/2005-7/2016
Number of Funds	64
Number of Funds (Significant $\beta_{fund\text{-}EEM}$)	37
Average α_{1fund} - Average α_{2fund}	0.44%
Average Deviation to EEM	12.7%

Our results show that for the sample period from June 2005 to July 2016, more than half of our funds have a significant coefficient on the EEM ETF variable indicating that fund returns are in part attributable to drift from the stated category MSCI EAFE (EFA) to MSCI Emerging Markets (EEM). This drift is approximately 13% on average. In addition, consistent with our second hypothesis (H2), once we introduce the EEM fund as an additional variable to capture fund deviation, the alpha on the regression decreases significantly. Alpha decreases by 0.44% on average (annualized) for those funds that indicate drift in our analysis. Results for the individual funds are presented in table 4 below.

Table 4. Individual Fund Results (June 2005-July 2016)

Funds	α1-α2 (annual)	Deviation to EEM	Significant $\beta_{fund\text{-}EEM}$ (5% level)	Funds	α1-α2 (annual)	Deviation to EEM	Significant $\beta_{fund\text{-}EEM}$ (5% level)
GIGIX	0.98%	24.53%	*	PWIYX	NA	NA	
GIGSX	0.97%	24.39%	*	PISIX	NA	NA	
JIEIX	0.82%	22.38%	*	PIUIX	0.39%	11.43%	*
BBHLX	NA	NA		PIIIX	0.53%	15.23%	*
MAIIX	NA	NA		PINIX	0.39%	11.49%	*
MAILX	0.23%	7.01%	*	LGIEX	NA	NA	
BISIX	0.72%	19.10%	*	RINYX	0.15%	4.73%	*
CIVIX	NA	NA		RINSX	0.14%	4.57%	*

SBIYX	NA	NA		SIEPX	0.62%	17.00%	*
SUIIX	0.36%	10.55%	*	SCIEX	0.56%	16.02%	*
BTAEX	NA	NA		SEITX	NA	NA	
DFALX	0.17%	5.43%	*	SFFFX	NA	NA	
DNINX	0.59%	16.37%	*	RIIHX	NA	NA	
SGOIX	0.29%	14.63%	*	TCIEX	NA	NA	
GIEIX	0.27%	8.12%	*	TRIEX	NA	NA	
GSIEX	NA	NA		TIIEX	NA	NA	
HAINX	0.63%	16.54%	*	TSWIX	NA	NA	
HAOYX	0.58%	16.65%	*	VTMNX	0.06%	1.97%	*
IBVIX	NA	NA		EKSYX	0.41%	25.15%	*
JAIGX	1.98%	36.00%	*	MVIEX	0.67%	18.22%	*
VSIEX	0.25%	7.49%	*	EKSYX	0.41%	25.15%	*
OIEAX	NA	NA		MVIEX	0.67%	18.22%	*
JIOSX	0.16%	5.13%	*	IMSSX	NA	NA	
JFTIX	0.18%	5.40%	*				
LZIEX	NA	NA					
LZSIX	0.28%	9.30%	*				
MSILX	0.51%	14.92%	*				
LICYX	0.29%	9.06%	*				
ICEUX	NA	NA					
EXOSX	0.50%	15.08%	*				
MOSLX	NA	NA					
MOSSX	NA	NA					
MOSYX	NA	NA					
MKIEX	NA	NA					
MDIJX	0.45%	13.88%	*				
MINIX	-0.23%	-10.62%	*				
MRSIX	0.31%	9.38%	*				
MSACX	NA	NA					
MSIQX	-0.20%	-8.67%	*				
GIXIX	NA	NA					
OIIEX	0.21%	7.01%	*				

5. Conclusion

In this paper, we analyze the performance of 64 international institutional funds. We find that fund managers in over half of our sample deviate from their stated fund category to riskier stocks. On average, we find a 13% deviation to the emerging market ETF benchmark employed in this study. Whenever fund managers deviate from their stated categories towards riskier stocks, we find an upward bias in their alphas. For our sample funds, this bias is .44% annualized. With strong competition in the mutual fund market to attract and retain clients, it is not surprising that managers are motivated to deviate from their stated categories in order to boost their perceived performance. However, this results in client exposure to riskier investments. If there is a downturn in markets where managers deviated to, then this can result in substantial losses for investors, over and above what may have occurred if managers had stayed with their original stated category.

Based on the significant results in this study, future research on international retail mutual funds is warranted. Given manager behavior in the institutional arena, one would expect an even greater discrepancy in the alphas for these funds. We anticipate that retail investors in international mutual funds are less aware of the makeup of their investments. This could provide fund managers with an incentive to move away from their original stated categories into riskier market funds.

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