

United States-based international mutual funds: Performance and persistence

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Abstract

This study examines market behavior of U.S.-based international mutual funds that invest solely in the international equity markets from 2005 to 2009. With a reputation of high expense ratio, these funds outperform the stock market indices; and their performances can be explained by fund characteristics, such as size, turnover ratio, and beta. Funds are categorized as winners or losers based on their relative performance in the category. The probability of winner funds becoming loser funds or vice versa is close to 50%. The post one- to three-year annualized returns for winner funds and loser funds are very similar. Thus, the relative performance of one fund to another appears more like a random walk than a persistent trend. © 2012 Academy of Financial Services. All rights reserved.

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1. Introduction

The first international mutual fund was introduced in the United States in 1955. By the end of 2008, international equity mutual funds accounted for 9% of mutual fund industry assets.¹ The fast growth of international mutual funds can be attributed to their most prominent benefit of the diversification function, while this is hard to achieve from direct investing by individuals in the international market (Grubel, 1968; Levy and Sarnat, 1970). The fast economic growth of the emerging markets (Li and Lin, 2011) also helps to explain the growth of the United States-based international funds, because mutual fund investors believe

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there exists a higher degree of market inefficiency in emerging markets than in the U.S. market (Tkac, 2001).

Mutual fund performance is always an attractive topic for both researchers and investors because investment performance is the most influential of the many factors that shape fund owners' opinions of the fund industry.² If it is true the degree of market inefficiency is higher in the international market, domestic investors would want to spend even more effort doing research on international funds to find the most rewarding investments. Although there exists a large amount of literature regarding domestic fund performance (Fortin and Michelson, 2002; Lin and Yung, 2004; Downen and Mann, 2004; Haslem, Baker, and David, 2008), we find very few studies that have examined international mutual fund performance. Fortin and Michelson (2005) studied the relative performance of international funds versus the market index. Their findings support the existence of market inefficiency in the international market and, thus, investors are benefited by selecting actively managed international funds to capture the inefficiency. Moreover, they explored the relation between funds' return and characteristics, and they found that size and turnover can contribute to funds' return but not the expense ratio. From an individual investor's position, the fund characteristics, such as load, turnover ratio, size, manager's tenure, and star rating are most convenient to observe and utilize. Thus, it is meaningful to investigate fund performance relative to these characteristics to facilitate investors as they construct more effective portfolios.

This study focuses on United States-based international funds that solely invest in the equity market outside of the United States. Evaluating performance of international funds is relatively challenging compare to evaluating performance of domestic funds because of the lack of appropriate benchmarks for international funds. For example, even the most sophisticated data gathering company, Morningstar, uses only one single benchmark (MSCI EAFE)³ to measure performance of all international funds. In this study, we use classical measures to analyze international fund performance, such as three-year and five-year annualized returns, fund alpha, sharp ratio, and Morningstar rating. We do not use factors models, which are most commonly seen in studies for domestic mutual funds to examine returns, because we believe there may be lack of a common set of factors to explain international fund returns.

Besides performance measures, performance persistence is another important indicator of a manager's skill. While there is a large amount of literature regarding performance persistence for domestic funds (e.g., Grinblatt and Titman, 1992; Goetzmann and Ibbotson, 1994; Malkiel, 1995; Carhart, 1997; Brown and Goetzmann, 1995), the only study we see dealing with international mutual fund performance persistence was done by Droms and Walker (2001), in which the authors applied Brown and Goetzmann (1995) methodology to detect international fund persistence in one- to four-year periods. Instead, our study detects fund performance persistence through two ways. Firstly, unlike Droms and Walker (2001) who rank all funds disregarding fund categories to obtain winners and losers, we form the winner and loser funds based on the relative performance of a fund in its category defined by Morningstar. We then use the same methodology applied by Droms and Walker (2001) to examine the percentage of "winner–winner, winner–loser, loser–loser, and loser–winner" funds. Secondly, we examine the post one-, two-, three-year annualized returns for both

winner and loser funds to see whether there exists a divergent difference between winner and loser returns.

We find that fund turnover ratio and size are relevant factors to explain fund performance while neither expense ratio, the length of manager's tenure, nor the existing years of a fund have impact on performance. There exists little performance persistence since relative performance of one international fund to another seems to be more like a random walk than a persistent trend. The evidence we find is meaningful to individual investors since they highly rely on fund characteristic data and past performance when selecting funds. Our findings contribute to the financial services literature in that we update and provide recent evidence on international fund performance and examine fund persistence in a unique way.

2. Sample construction and characteristics

Sample firms are identified and data are collected through Morningstar Investment Research Center. Several criteria are used to construct the final sample, such as exclusion of institutional funds, index or enhanced index funds, socially conscious funds, and life cycle funds. Funds formed after 2005 are excluded from this study. All funds used in this study were launched before 2005 and are actively traded through 2010. Because many mutual fund families offer multiple versions of shares from the same funds with different fee structures, only one fund from the same offering is utilized in the sample. Consistent with the definition of international funds (Bodie, Kane, and Marcus 2010), all sample funds must be "pure" international funds; in other words, United States-based international funds do not invest in their own country. This is a very strong criterion since many of so-called international funds also invest in the United States and, thus, should be called "global" funds. The final sample includes 117 equity funds investing outside of United States in the period of 2005 to 2009.

Sample funds cover 11 fund categories defined by Morningstar-based on investment styles and geographical locations. Categories with the most funds are Diversified Emerging Markets funds and Foreign Large/Blend funds, which combined account for 41% of the total sample. In contrast, Latin America Stocks funds only make up 1.7% and Foreign Small/Middle Value funds make up 0.8% of the total sample. International funds favor large stocks, shown through their investment styles, because 87% of our sample funds fall within large growth, large value, or large blend styles; and only 13% of the sample funds belong to middle and small firm styles. (Data for investment style are not reported in Table 1 because of space limitations.) While relatively few funds are in the Foreign Large Growth category, their assets under management are extremely large, with an average of \$3,102.33 million.

As expected, international funds are expensive investment instruments to investors. The sample has an average expense ratio of 1.63%; in contrast, the average expense ratio for mutual funds in the United States is about 1.34% (Mamudi, 2010). Based on Morningstar's definition, the annual expense ratio includes 12b-1 fees, management fees, administrative fees, operating costs, and all other asset-based costs incurred by the fund. Portfolio transaction fees, or brokerage costs, as well as initial or deferred sales charges are not included

Table 1 Sample descriptive characters

Category	%	Net assets (\$mill)	Expense ratio	Turn-over	Manager tenure	Three-year annualized return	Five-year annualized return	Morning star rating	Sharp ratio	Alpha
Diversified pacific stock	3.4	299.75	1.67	120	7.5	-3.09	6.99	2.25	-0.17	4.72
Diversified emerging markets	20.5	1292.71	1.80	103.63	5.46	1.34	12.72	2.71	0.01	11.18
Europe stock	12.8	277.73	1.78	78.4	5.2	-6.90	6.43	2.67	-0.24	3.57
Foreign small/mid value	0.8	1131	1.54	46	15	-5.87	6.41	3	-0.09	6.89
Foreign large blend	20.5	474.42	1.44	86.88	5.08	-6.29	3.86	2.88	-0.33	0.52
Foreign large growth	2.6	3102.33	1.42	55.67	9.67	-4.09	5.45	3.67	-0.22	2.65
Foreign small/mid growth	6.0	536.14	1.44	78.14	6.14	-6.13	5.25	2.57	-0.22	3.14
Foreign large value	12.8	1164.67	1.32	65.87	6	-6.76	3.30	2.67	-0.32	0.12
Japan stock	4.3	125.8	1.88	95.8	3.6	-11.95	-4.02	2.4	-0.514	-4.56
Latin America stock	1.7	1817.5	1.46	35.5	5	12.68	27.41	3.5	0.275	23.16
Pacific ex-Japan stock	14.5	1035	1.83	62.41	5.06	5.01	13.67	3	0.06	12.24
Total	100	865.78	1.63	81.94	5.57	-2.96	7.67	2.78	-0.17	5.33

Notes. MSCI EAFE Index return: three-year -8.66%, five-year 0.85%.

S&P 500 Index return: three-year -7.7%, five-year -1.65%.

Table 2 Performance measurements correlation matrix

	Three-year annualized return	Five-year annualized return	Sharp ratio	Alpha	Morningstar rating
Three-year annualized return	1				
Five-year annualized return	.884**	1			
Sharp ratio	.901**	.913**	1		
Alpha	.870**	.924**	.970**	1	
Morningstar rating	.510**	.373**	.403**	.313**	1

**Correlation is significant at the 0.01 level.

in the expense ratio. Commonly, financial media like to educate investors in choosing funds with an expense ratio less than 1%; in our sample, no single category meets this criterion. Funds' turnover ratios appear divergent among categories; for example, 120 for Diversified Pacific Stocks funds and 35.5 for Latin America Stocks funds.

3. Fund performances

This study measures funds' performance through five variables; (1) past three-year annualized return (2007 to 2009), (2) past five-year annualized return (2005 to 2009), (3) fund Sharp ratio, (4) fund alpha, and (5) Morningstar three-year rating. The sample's three-year and five-year annualized returns are -2.96% and 7.67% , respectively. The relatively lower three-year annualized return is because of a very poor performance in the year 2008 when the U.S. stock market tumbled, which indicates there exists a strong correlation between U.S. market and foreign markets. The S&P 500 index had the corresponding returns of -7.70% and -1.65% , while the international stock index MSCI EAFE, which is assigned as the benchmark for all international funds by Morningstar, had three-year and five-year annualized returns of -8.66% and 0.85% . Overall, based on raw returns, our sample funds outperform both domestic and international index portfolios. When taking risk into account, the sample funds have a negative Sharp ratio. This ratio shows the funds have an even worse performance than risk-free assets for the past three years. The average alpha for the sample is 5.33% and indicates, on average, the sample funds earn an abnormal return of 5.33% after adjusting for the market risk.

Table 2 represents the correlation coefficient between pairs of the five performance measures. It is not surprising to see that these measures are highly correlated with each other except for the Morningstar rating. Based on Morningstar's own formula, Morningstar rating represents each individual fund's relative performance compared with similar funds after adjusting for its load and downside risk. Returns utilized in the other four measures are calculated after deducting expenses but before loads.

The popular view in current literature regarding mutual fund performance is that active managed funds underperform comparable index funds after considering expense ratio or other transaction costs (Miller, 2010; Trainor, 2010; Elton et al., 1993). In other words, there is no positive correlation between performance measure and expense ratio. Wermers (2000)

Table 3 Performances sorted by expense ratio quartile

	Expense ratio	Front load	Turn-over	Three-year return	Five-year return	Standard deviation	Sharp ratio	Alpha	Morningstar rating
1	1.02	0	77.52	−3.94	5.46	27.44	−0.23	3.39	3.03
2	1.41	1.87	83.41	−4.55	6.38	29.49	−0.22	3.83	2.55
3	1.69	3.43	84.45	−1.65	9.28	31.22	−0.13	6.60	2.83
4	2.36	3.02	82.37	−1.73	9.49	32.56	−0.10	7.42	2.7

find opposite evidence that supported the value of active fund management in that funds picked stocks well enough to cover their costs. We believe that the international market is very different from the domestic market in terms of market efficiency; and, thus, international funds' managers have a better chance to explore market inefficiency than domestic funds' managers.

To test whether investors are rewarded for choosing skilled managers who might charge higher expense ratios, this study sorted funds into four quartiles based on their expense ratios (see Table 3). The highest expense ratio quartile funds have the highest five-year annualized return, best Sharp ratio, and alpha, but relatively lower Morningstar rating. While comparing quartile 4 and 1, their five-year annualized return difference is 4.03% per year, and their expense ratio difference is 1.34% per year. Consequently, the preliminary result shows that an investor's extra cost was paid off through additional earned returns. Data in Table 3 also shows that those funds in quartile 3 and 4 with higher expense ratios also have higher front load charges. This finding falls in line with the study by Houge and Wellman (2006); they find that load fund expense ratios are higher than those of no-load funds.

Similar to Haslem, Baker, and Smith's (2008) model, this study utilize five regressions with each individual performance measure as the dependent variable. The independent variables include beta, turnover ratio, asset under management, fund age, expense ratio, front load, and average manager's tenure. Asset under management and fund age are utilized as independent variables in this study because findings from the hedge fund industry indicate that younger funds tend to outperform older funds and small funds tend to outperform large funds (Table 4).⁴

As expected, beta, as a measure of systematic risk, can significantly explain all performance variables. The negative coefficient of beta in the regression with the Morningstar rating as the dependent variable is inconsistent with the positive coefficients of beta in the other four regressions. The inconsistent negative sign represents the higher the market risk a fund bears, the lower the Morningstar rating. Turnover ratio is significantly negatively related to all performance measures. Combined data in Table 3 and 4 show that higher turnover ratios did not enhance fund expense ratios, but did lead to worse fund performance. The explanation of this finding might be that turnover activities increase fund transaction costs, which are not captured by expense ratio.

The size of the fund, measured by assets under management, helps to explain its performance, which is consistent with findings of Haslem et al. (2008). For the same expense ratios of a large fund and a small fund, large fund managers can secure higher management fees; and, thus, large fund companies can attract better skilled managers. Better

Table 4 Regression results with performance measurements as dependent variables

	Beta	Turn-over ratio	Assets under management	Fund's age	Expense ratio	Front load	Average manager's tenure
Three-year return	12.126 (4.065)***	-0.024 (-2.107)**	.001 (2.639)***	.065 (0.486)	.580 (0.538)	.148 (0.485)	-0.009 (0.953)
Five-year return	21.101 (9.064)***	-0.018 (-2.090)**	.001 (2.900)***	.039 (0.532)	.438 (0.597)	.276 (1.682)*	-0.008 (-0.070)
Sharp ratio	.665 (7.587)***	.000 (-2.380)**	2.986E-5 (3.015)***	.001 (0.378)	.030 (1.102)	.004 (0.596)	.000 (0.037)
Alpha	24.478 (9.509)***	-0.026 (-2.683)***	.001 (3.049)***	.023 (0.291)	.944 (1.163)	.062 (0.338)	-0.012 (-0.093)
Morningstar Rating	-1.719 (-3.293)***	-0.003 (-1.519)	.000 (3.160)***	.003 (0.208)	-0.056 (-0.342)	.009 (0.234)	-0.003 (-0.102)

*** Significant at 0.01 level.

** Significant at 0.05 level.

* Significant at 0.10 level.

performing managers are likely to be promoted from small funds to large funds, and the best performing managers might go to hedge funds (Ding and Wermers, 2005). While controlling the variables of beta, turnover ratio, size, and other fund characteristics, expense ratio is not significant in explaining any performance measures. This finding falls in line with most current research and indicates that the expense ratio variable is irrelevant in predicting fund performances. A manager's tenure is also irrelevant to any performance measures. This is consistent with Fortin and Michelson's evidence (Fortin and Michelson, 1999) that selecting a mutual fund on the basis of manager tenure is not a good investment strategy.

4. Performance persistence

Morningstar ranks all funds every year based on the fund's total return position compared to funds in the same category. The highest or most favorable percentile rank is "1" and the lowest or least favorable percentile rank is "100." A ranking of 1 means this fund's return is at the top 1%, and the ranking of 100 means the fund's return is at the bottom percentile in the fund's category. In other words, the top-performing fund in a category will always receive a rank of 1 and the median performing fund receives a rank of "50." Investors always have an interest to know whether the best funds can still be ranked at the top, and the worst funds still stay at the bottom in the future.

This study first examines funds' rankings in a two-year period. A "winner" fund is a fund with a ranking equal to or less than 50, and the "loser" fund is a fund with a ranking more than 50. Any sample funds should belong to either winner funds or loser funds. Then the question becomes what is the percentage of previous year winner funds that still belong to winner funds in the following year and likewise for loser funds. In an extreme case, the 100

Table 5 Percentage of winner and loser funds based on previous year performance

Previous year		Following year	Number of funds	Percentage
2005	Winner	Winner	41	61.19%
		Loser	26	38.81%
	Loser	Winner	19	38.00%
		Loser	31	62.00%
2006	Winner	Winner	31	51.67%
		Loser	29	48.33%
	Loser	Winner	21	36.84%
		Loser	36	63.16%
2007	Winner	Winner	19	35.85%
		Loser	34	64.15%
	Loser	Winner	36	56.25%
		Loser	28	43.75%
2008	Winner	Winner	29	52.73%
		Loser	26	47.27%
	Loser	Winner	40	64.52%
		Loser	22	35.48%
Total	Winner	Winner	120	51.06%
		Loser	115	48.94%
	Loser	Winner	116	49.79%
		Loser	117	50.21%

percentage means that all previous winner funds are persistent winner funds in the following year. Table 5 represents the results.

Performance persistence is not evident in the results of the sample funds shown in Table 5. For example, 35.85% of year 2007 winners stayed as winners, while 65.15% winners fell into losers in the year 2008. It is interesting to note that for the total sample funds (2005–2009) the chance of winners falling into losers or losers becoming winners is very close to 50%. The switch between winners and losers looks more like a random walk than any appearance of persistence.

Table 6 represents the post one- to three-year annualized returns for winner funds and loser funds. Some previous studies argued that fund performance in the short term is affected by its investment style (e.g., Grinblatt, Titman, and Wermers, 1995). Thus, it is unfair to compare a value fund that pursues a long-term strategy with funds that pursue momentum

Table 6 Postreturns for winner and loser funds

	One-year	Two-year	Three-year
2005 winner	29.80	0.25	−0.09
2005 loser	29.38	0.26	−0.06
2006 winner	23.35	−0.23	−0.03
2006 loser	19.36	−0.21	−0.03
2007 winner	−50.38	−0.14	
2007 loser	−47.25	−0.12	
2008 winner	47.18		
2008 loser	56.69		

strategy based on one-year returns. Post three-year returns after the formation of the winner and loser funds are examined in this study to solve the problem caused by investment style. For example, for the 2005 winners and losers, their post one-year return difference was 0.42%, and their post three-year return difference was just only -0.03% . For the 2006 winners and losers, their post three-year annualized returns were exactly the same. Results in Table 6 are consistent with Table 5 in that we see little performance persistence for the sample funds.

5. Conclusions

We study the past five-year market behavior of United States-based international mutual funds. These funds are relatively expensive to investors, with an average expense ratio of 1.63%, while they also outperformed the benchmark of MSCI EAFE by 6.82% annually. Fund performance is examined through (1) annualized five-year returns, (2) annualized three-year returns, (3) fund Sharp ratio, (4) fund alpha, and (5) Morningstar rating. Managers who traded less often tended to have better performance than managers who traded more often. Large funds, which can explore the economies of scale and attract skilled managers, had significantly better market performance than small funds. Interestingly, expense ratio, a very important factor for selecting a fund, appeared irrelevant to any of the five performance measures after controlling for fund characteristics. This indicates that investors are not better off investing in expensive funds. Neither the length of manager's tenure nor the existing years of a fund have impact on the five performance measures.

We confirmed previous findings regarding the mutual fund industry in that there exists little performance persistence for international mutual funds. The probability of winner funds becoming loser funds or vice versa is close to 50%. The post one- to three-year annualized returns for winner funds and loser funds are very similar. The strategy of buying previous year winner funds and shorting previous year loser funds would fail based on our findings. Overall, the relative performance of one international mutual fund to another international mutual fund appears more like a random walk than a persistent trend.

Irrelevance of expense ratio, length of manager's tenure, and fund age to performance challenges the conventional wisdom of fund selection. Investors are educated from many sources that avoid high expense funds and select low expense funds. Our findings indicate that a higher expense ratio does not mean poor returns, and a lower expense ratio does not guarantee high returns. The same findings can be applied to manager's tenure and fund age. In addition, investors need to avoid favoring star funds, which have had super performance in the past. Our results show that star funds can perform poorly like other funds. Overall asset allocation and portfolio management might be more important and more practical than individual fund selection based on fund characteristics. This article can lead to further research on individual investor's perspectives and questions, such as (1) how can portfolio performance be explained? and (2) is portfolio performance a result of fund selection or asset allocation?

Notes

1. The 2009 investment company fact book (Investment Company Institute, Washington, DC).
2. Ownership of mutual funds, shareholder sentiment, and use of the Internet, 2010 (Investment Company Institute, Washington, DC).
3. MSCI EAFE is a stock market index to measure the equity market performance of developed markets in Europe, Australasia, and Far East.
4. CFA program curriculum, level III, volume 5 (CFA institution, 2010).

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