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A 10-YEAR EXAMINATION OF ACTIVE INVESTMENT IN EMERGING MARKETS:

Can active managers utilize market inefficiencies cost effectively?

WHITE PAPER
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Can one expect better returns from active management in emerging markets due to their perceived inefficiency? A common belief is to invest actively in inefficient markets since these markets reward those with superior information. Emerging markets are often judged to be among the most inefficient markets, leading investors to consider them fruitful places to engage in active strategies. Yet, Sharpe's [1991] tautology that the average actively managed dollar performs like the cap-weighted index holds even in inefficient markets. For each winner there is a loser, creating performance variability centered on the cap-weighted return. The variability and consistency of outperformance has interesting implications for those considering investment in emerging markets. ▸▸

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INTRODUCTION

The more inefficient a market is, the greater the return possibilities for those with superior information. For investors to garner outperformance through active management, though, they must determine which managers have superior information. If investors do not know which managers have superior information, then their expectation should be index-like returns before costs. However, by investing actively, they take on underperformance risk and subject themselves to fees that make their net expected return less than the index. As the distribution of outperformance among active managers widens—as one might expect in an inefficient market—the risk associated with underperformance increases.

Here we compare excess returns of active managers over the past 10 years to the S&P IFCI emerging markets index. In addition to looking at the distribution of excess performance, we also look at fund fees, turnover, performance consistency, diversity measures and risk adjusted performance. Our objective is to characterize active performance in emerging markets, not to dissuade investors from investing actively. As expected, we find that the average active manager performs like the index before costs. Perhaps more interesting, though, is the wide distribution of excess returns that signifies underperformance risk; and the evidence of survivorship bias in the data that can mask this risk.

Data

We use diversified emerging markets active fund manager data obtained from Morningstar throughout this paper. The data covers the period from January 1, 1999 through December 31, 2008. We also rely on data obtained from eVestment Alliance to comment on attributes that are not tracked by Morningstar. The data is not mixed during presentation and we always note when the data from eVestment Alliance is used. Each dataset describes annual returns, turnover and the expense ratio of active emerging market funds. In the Morningstar database, there were 54 funds with a 10-year track record, 62 with a five-year track record, 73 with a three-year track record and 114 with a one-year track record. So that track records are compared over consistent dates, the ending date in a track record is always December 31, 2008.

ANALYSIS: ACTIVE PERFORMANCE IN EM

The cap-weighted index

Throughout, we present results relative to the cap-weighted S&P IFCI emerging markets index. Exhibit 1 displays selected metrics of the index as of December 31, 2008.

We compare active funds directly to the index without considering the cost to invest in an index fund. Indeed, an investor that chooses to invest passively will still be subject to turnover costs, fund expenses and tracking error considerations associated with an index fund.

Few managers beat the index

The percentage of actively managed funds that beat the index over various track records demonstrates just how difficult it is to beat the index after costs. Exhibit 2 shows that most active managers don't outperform the index.

Exhibit 1:

S&P IFCI INDEX DESCRIPTION

Number of Securities	1574
Number of Countries	23
10 year return (%)	9.9
10 year volatility (%)	24.4
Sharpe ratio	0.56
2008 Turnover (%)	10.96

SOURCE: FactSet Research Systems

Exhibit 2:

PERCENTAGE OF MANAGERS OUTPERFORMING THE INDEX OVER DIFFERENT LENGTHS OF TIME

Track Record (Years)	3	5	10
Percentage of funds beating index (%)	20.5	14.5	37.0

SOURCE: Morningstar, Inc.

It appears that funds with a 10 year track record did better relative to the index, but this may be due to survivorship bias. We were unable to estimate survivorship bias in the Morningstar data because it did not track the results of funds that exited the universe. However, we found evidence that many diversified emerging markets funds left the universe during the same 10 year period when analyzing the eVestment Alliance dataset. At the start date of this study there were 43 funds in the eVestment Alliance data, but only 28 completed a 10-year track record, implying that 15 dropped out of the dataset–more than 1/3 of the funds.

The search for alpha is expensive in EM

Active returns must be weighed against their costs. When transaction costs are high, as shown in Exhibit 3, it is expensive to trade. A fund that turns over its entire portfolio will lose approximately 2*1.41% = 2.82% of its value on average to transaction costs. We see in Exhibit 4 that active emerging market funds have high turnover. Outperforming a low-fee, low-turnover, cap-weighted index is not easy given the management fees and high transaction costs.

Exhibit 3:

ESTIMATED ONE WAY PROPORTIONAL TRANSACTION COSTS.
Transaction cost estimates are derived from actual transactions in local markets and estimates of commissions, fees and bid ask spreads across 39 emerging and frontier countries. The overall impact of turnover could be much higher due to other costs, such as local taxes, market impact and slippage from fx trade execution.

	AVERAGE	MINIMUM	MAXIMUM
Transaction costs (bps)	141	10	480

SOURCE: Parametric

Exhibit 4:

COST AND TURNOVER RANGE FOR ACTIVELY MANAGED FUNDS

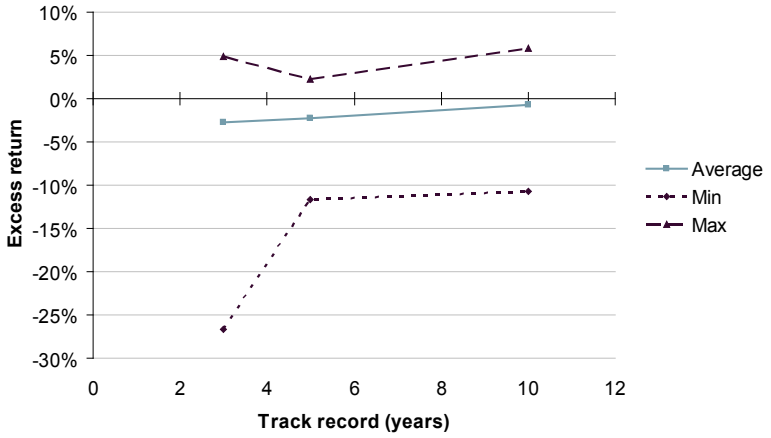
	AVERAGE	MINIMUM	MAXIMUM
Net expense ratio (bps)	151	44	273
Turnover (%)	66.0	0.0	173.0

SOURCE: Morningstar, Inc.

The data in Exhibit 5 conforms well to Sharpe's tautology given the turnover and transaction costs noted above. For example, the average 3 year excess return is -2.72% after costs. With an average turnover of 66%, and an average one-way proportional transaction cost of 1.41% we estimate that the average fund loses 1.85 % per year to transaction costs. Adding this transaction cost estimate to the expense ratio, we calculate the loss of value to fees and costs at approximately 3.32%. This is not far from the -2.72% excess return result shown in Exhibit 5. Upon accounting for these costs the average return is similar to the index.

Exhibit 5:

EXCESS RETURN OF ACTIVELY MANAGED FUNDS FOR 3, 5 AND 10 YEAR TRACK RECORDS



SOURCE: Morningstar, Inc.

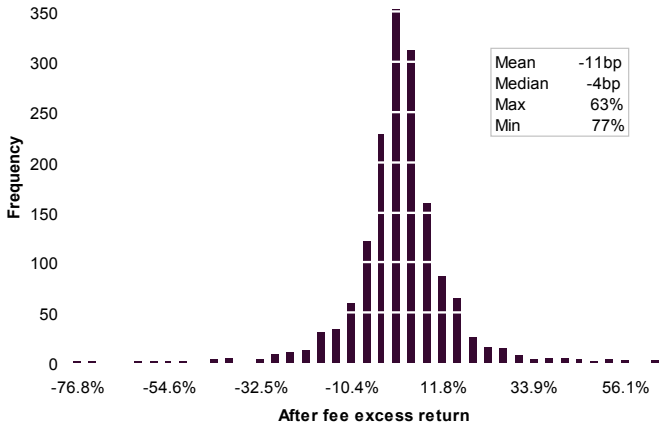
Assessing active risk

Exhibit 6 characterizes active returns collectively for all managers over all years. It is a histogram of 1 year excess returns, after fees, for all funds that existed in the database during the 10 years examined. An investor looking to gauge active risk for a fund with a limited history might use this aggregate profile to assess typical active risk in emerging markets.

We also examined plots not shown here similar to Exhibit 6 using the eVestment alliance data. When funds that left the universe are included in this type of plot the distribution extends farther to the left, indicating that extreme underperformance can be worse than illustrated.

Exhibit 6:

HISTOGRAM OF ANNUAL EXCESS RETURNS AFTER FEES FOR ALL FUNDS THAT REPORTED DURING THE 10 YEARS



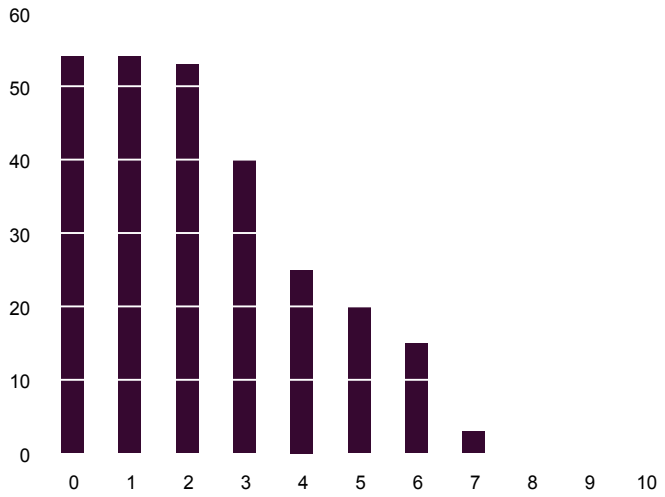
SOURCE: Morningstar, Inc.

Performance consistency–Over ten years, less than 6% of mangers studied beat the index 70% of the time

Excess return quantifies a fund's outperformance over a defined period. Return consistency measures how often a fund outperforms. A fund that outperforms for 2 out of 10 years but underperforms in the other 8 years poses a significant risk. Many investors do not hold an investment for 10 years, leaving the real possibility of missing large performance years. A strategy that has consistent outperformance after costs imposes less underperformance risk on an investor. Exhibit 7 shows the number of funds that beat the index for at least the number of years listed on the horizontal axis. For example, 40 of the 54 funds with a 10 year track record beat the index at least 3 of the 10 years, while only 3 funds beat the index for 7 of the 10 years. These results illustrate the challenges investors face. In selecting active managers, not only is it necessary to identify those with superior information and insights, but one must also gauge their ability to transform knowledge into outperformance year after year.

Exhibit 7:

NUMBER OF FUNDS BEATING THE INDEX FOR AT LEAST X YEARS OUT OF 10



SOURCE: Morningstar, Inc.

Concentration / Diversification…How big are the bets?

An important factor affecting investment performance and risk is diversification (or lack of concentration). Not surprisingly concentrated portfolios exhibit high returns when active bets are favorable and low returns when active bets are wrong. This elevates volatility. Conversely, a diversified portfolio places numerous bets across many assets. The value derived from diversification will depend on the correlation among the assets chosen and the weighting scheme used [see Choueifaty and Coignard 2008 and Stein et al 2009]. Obviously, holding many highly-correlated assets detracts from diversification value. As a rule of thumb, emerging market portfolios holding more countries and securities will be less volatile. Exhibit 8 shows country and security diversification for the active funds with a 10-year track record. The average fund holds far less securities than the index, but invests in approximately the same number of countries.

Exhibit 8:

FUND DIVERSIFICATION BY NUMBER OF COUNTRIES AND NUMBER OF SECURITIES FOR 10 YEAR TRACK RECORD FUNDS.
We use the evestment alliance database to construct this table because the number of countries held was not reported in the morningstar database.

	AVERAGE	MINIMUM	MAXIMUM	INDEX
Number of countries held	22	12	43	23
Number of securities held	154	39	1571	1574

SOURCE: eVestment Alliance and FactSet Research Systems

Generally, less concentrated portfolios experience less volatility. Many view volatility as a means to characterize risk, but it has return implications as well. With the same expected return, a less volatile portfolio will have a higher growth rate than a more volatile portfolio due to volatility drag [see Fernholz 2002]. Inasmuch as volatility should be considered as a risk measure, its effect on portfolio growth should also be considered. From Exhibit 9 we can see that the average fund has approximately the same volatility as the index. The fund with the largest number of countries is the same fund that holds the most securities, which is also the fund with the lowest volatility.

Exhibit 9:

VOLATILITY RANGE FOR 10 YEAR TRACK RECORD FUNDS

	AVERAGE	MINIMUM	MAXIMUM	INDEX
Volatility (%)	24.6	21.6	27.6	24.4

SOURCE: Morningstar and FactSet Research Systems

Measures that combine return and volatility are also useful because they measure the amount of return garnered per unit of risk taken. Below we examine Sharpe ratios and other measures of relative performance.

How similar are active returns to index returns?

There are several relative comparisons that are important when evaluating actively managed funds that we list in Exhibit 10.

Exhibit 10:

RELATIVE STATISTICS OF ACTIVE MANAGERS OVER 10 YEARS.
Here, we define beta as the slope of the regression of the fund's returns on the index's returns. To compute the sharpe ratio we use the 6 month cd rate as the risk free rate.

	AVERAGE	MINIMUM	MAXIMUM
Sharpe Ratio (annual)	0.52	0.21	0.78
Tracking Error (%)	7.70	2.20	21.30
Correlation	0.982	0.905	0.998
Beta	1.005	0.881	1.231

SOURCE: Morningstar, FactSet Research Systems and Board of Governors of the Federal Reserve System

The average active fund has a fairly high tracking error. The high correlations and the betas being close to 1 indicate that most active funds do in fact move in unison with the index, even though the tracking errors are high. In comparing the index's Sharpe ratio of 0.55 to the average of the 10-year track record active managers, 0.52, we conclude that on average, active managers have after cost risk-adjusted performance that is similar to the index.

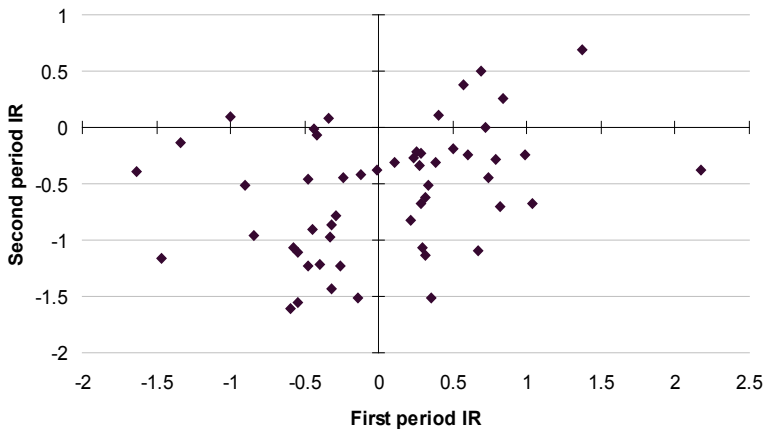
Inferring future performance

Selecting top active managers from historical data is straightforward. Identifying, today, the top active managers for the next 10 years is difficult. We see from Exhibit 5 and Exhibit 6 that it is quite possible to pick a manager that significantly underperforms or outperforms. In analyzing predictors of emerging markets mutual fund performance Gottesman and Morey [2007] found that only the expense ratio significantly predicted out-of-sample fund performance. Those with low expense ratios tend to outperform. The information ratio[1] is a standard metric for evaluating an active strategy. Funds with a demonstrable high information ratio (IR) should be favored. However, higher IRs can be temporary and may not persist through time. Below, we inspect information ratios to see whether funds with past high information ratios continue with high ones.

Exhibit 11 plots, for each fund with a 10-year track record, the IR computed from the first 5 year period against the IR computed from the second 5 year period. There is an apparent positive relationship between the past IR and the future IR. However, we must analyze this data more carefully due to the funds that have exited the data that we do not know about. Grinold and Kahn [2000 pp114] indicate that the theoretical median IR is 0. The median IR of the funds in the first period is 0.16, and -0.45 in the second period. Seventeen of the 27 funds (63%) with an information ratio greater than the median in the first period also had an information ratio greater than the median in the second period. If better-than-median performance were to occur only from chance 13.5 of the 54 funds (25%) would have better than median performance over both 5-year periods. The results here, 17 of 54, are not statistically different from 13.5 of 54.

Exhibit 11:

SCATTERPLOT OF FOLLOWING 5 YEAR INFORMATION RATIO PLOTTED AGAINST THE PREVIOUS 5 YEAR INFORMATION RATIO



SOURCE: Morningstar, Inc.

[1] Mean excess return divided by tracking error.

CONCLUSION

In examining 3-, 5- and 10-year sample periods, we find that the average returns generated by active managers in this study do not outperform the S&P IFCI Emerging Markets index after costs. In fact, the average manager performs similarly to the index; again, an expected outcome given Sharpe's assertion. However, in analyzing the distribution of excess returns we see considerable underperformance risk, emphasizing the need to understand an active manager's investment process and its risks before investing.

The variability of outperformance is high in emerging markets. In a single year, one manager outperformed by 56%, and in another year, one underperformed by 33%. Among the funds with a 5-year track record, the maximum annualized outperformance was 2.3%, and the minimum, -10.7%. Over the 5-year period the best fund generated 12% more wealth than the index and the worst generated just over half, 53.7% of the index's wealth creation.

Strategies that build concentrated active positions will logically have higher underperformance risk. Judging from the turnover values in this study, it is apparent that active bets shift often. If an investor does not understand the informational advantages of his/her ctive manager, then active risk is high, and the expected excess return before costs is zero. After deducting costs, excess return can be much less due to high turnover and high transaction costs.

We found that past information ratios cannot be relied upon to identify future succesful strategies. While we do not doubt that the asset class of emerging markets is, at times, inefficient and therefore presents fruitful opportunities for those with insightful strategies, it is also evident that the penalty for acting on spurious information can be severe when compared to a passive approach.

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