Flow of Funds and Abnormal Performance of Emerging Market Equity Funds: Is It Simply the Market Attraction or the Real Deal?

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This study analyzes 56 unique emerging market equity funds over the period 2000-2010. Results of this study show that, on average, U.S. domiciled funds that invest mainly in the emerging markets earn positive risk adjusted return. Results also demonstrate that U.S. domiciled emerging market funds outperform matching U.S. domiciled funds that invest only in the domestic equity based on one to one comparison of their risk adjusted returns. Cross-sectional analysis shows that risk adjusted return is significantly affected by the portfolio rebalancing and timing of investment. Finally, flow of funds is heavily influenced by lagged month's flow of funds and previous period's raw return.

1. Introduction

Mutual funds are the second largest financial institutions after commercial banks in the U.S. Due of their large size and dependence of substantial number of households on these funds, performance evaluation of mutual funds has been a constant piece of attraction to academic researchers and practitioners alike. During the past decade or so, U.S. investors have increasingly tilted their funds towards emerging markets. It is no surprise that both the fund managers and fund investors in the U.S. have increased their appetite towards emerging markets. According to the Global Financial Stability Report published by the International Monetary Fund (IMF), gross flows to emerging markets increased by three fold over the last decade.[1] Combined net assets under management of diversified emerging market funds used in this study grew at 19.41 percent per year over the period 2000-2010. Interestingly over the same period (2000-2010), average combined total net assets under management of all mutual funds in the U.S. increased only by 6.97% per year.[2]

This over explosive growth in emerging market funds stems from variety of reasons; prominent among them are diversification, stable growth, technological advancements, liberalization of these economies, and strong labor market[3]. For example, FTIF Templeton Emerging Markets Fund (Franklin Templeton Investments) sums up its reasons to invest in emerging markets because *"Emerging markets are, on average, projected to grow faster than those of developed countries...The growth differential between emerging and developed countries is more than 3%."* According to Dr. Mark Mobius, portfolio manager of FTIF Templeton Emerging Markets Fund (Franklin Templeton Investments), *"Templeton Emerging Markets Fund invests in equity securities of developing- or emerging market issuers because we believe in the strong economic growth potential of these regions of the world."*

Above normal growth in emerging economies coupled with less than average growth in developed economies definitely attracted investors toward emerging markets. Emerging markets are

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[1] Gross flows to emerging markets equity increased by three fold over last decade. "*According to the Global Financial Stability report published by the IMF, gross flow into emerging markets was partly $132 billion in 1997 which has increased to $421 billion by the end of 2009*". (Gelos 2011)

[2] According to the Investment Company Institute Factbook (ICI Factbook 2011), combined net asset for all U.S. mutual funds increased from $6,965 billion in the year 2000 to $11,821 billion by the end of year 2010.

[3] For more information please refer to Harvey (1994, 1995), Zhao (2007), Li, Sarkar, and Wang (2003), Tkac (2001) to name a few.

generally more risky[4] in nature, but it seems that investors are willing to take that risk because they believe they can earn higher returns at the given level of risk. A large set of literature exists to explain the abnormal performance and above normal flow of funds for U.S. equity funds; however, despite the explosive growth in emerging market equity funds, only a few studies are available to explain the same for emerging market equity funds. Moreover, results of over or under performance of mutual funds with an objective of investing in emerging markets equity are mixed[5] at best and inconclusive at worst.

Underperformance of actively managed equity funds is very well documented in the finance literature, but still there are funds or fund managers that have been able to earn superior returns consistently over a long period of time. Gauging the mindset of investors who, on continuous basis, are putting money in emerging market funds is difficult, but one thing is clear that investors do believe that after adjusting for risk and style, investment in emerging market equity will bring better returns than what they would earn otherwise from their investment in a domestic equity fund. As a result, we should expect to see a higher return per unit of risk from emerging market equity funds. Another interesting issue that attracts investors' attention is the managerial characteristic of a fund. Because emerging market equities are more volatile than stocks of a well-defined developed economy therefore *who manages the fund* and *portfolio construction* should play a significant role in explaining the fund's abnormal performance. As a result, the emerging market fund with an experienced manager or a long term serving manager should deliver higher return per unit of risk. Generally, if a fund is managed by an experienced and/or long term serving fund manager then we expect to see more conservative fund composition. In other words, if a manager has been with the fund for a long time then he tends to put more of new money in those stocks that have been generating higher returns for quite some time. These stocks are also known as "best ideas" of fund manager. The question is does this strategy work?

Another interesting concern is: this increase in net flow into emerging market funds is real or artificial? In other words, is it due to investors' genuine interest toward emerging markets and faith in higher expected corporate earnings, *a structural shift*, or naïve perception of earning the higher rate of return because these equities were able to earn superior returns in the past, *chasing the past returns*. As stated earlier that only a handful of studies have examined the abnormal performance, fund characteristics, and flow of funds pattern for emerging market funds despite the above average growth of such funds, this study attempts to fill this gap by examining the performance and flow of funds pattern for emerging market equity funds. Specifically, this study attempts to answer three key issues related to this observable fact: 1) how well U.S. domiciled funds that invest mainly in emerging markets have performed compared to their peers that mainly invest in the U.S equity, 2) whether flow of funds has any impact on the performance of these funds, and 3) which cross-sectional characteristics of emerging markets funds may explain their abnormal performance and above normal flow of funds.

Results of this study show that, on average, risk adjusted return of U.S. domiciled funds that invest mainly in emerging markets outperform risk adjusted return of matching size U.S. equity funds that invest only in the U.S. equity market. Results of this study also document that size and expenses are not relevant factors behind abnormal performance of the emerging market funds. On the contrary, how a fund is managed and how monies are allocated play significant roles in explaining the fund performance. Conservative style of fund management delivers higher risk

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[4] *"Inflation is particularly worrisome in emerging countries, where rising food and energy prices weigh heavily on the underclass, said Simona Mocuta, economist at HIS Global".* (Emerging market funds take a back seat, Los Angeles Times, April 10, 2011).

[5] Banegas (2010) shows superior performance of emerging market funds and evidence of benefits created by active management in emerging markets, Michelson, Philipova, and Srotova (2008) document above normal performance by emerging market funds over MSCI and S&P Indexes, and Huij and Post (2011) demonstrate persistence of performance for emerging market funds. Whereas, Eling and Faust (2010) and Abel and Fletcher (2004) failed to find any superior performance by these funds.

adjusted returns.

Results also suggest that U.S. investors that invest in emerging market funds are conservative, i.e. tend to invest in well diversified portfolios. Results further suggest that investors in emerging markets are not so sophisticated investors. They tend to invest money in funds that attracted large inflow in the previous period and in funds that earned higher returns in the previous period. In other words, U.S. investors who invest money in emerging market equity funds either follow the money or chase past returns.

The organization of this article is as follows: section 1 reviews the existing literature, section 2 explains the data and descriptive statistics, section 3 describes the methodology, results are presented in section 4, and section 5 concludes the paper.

2. Literature Review

Zhao (2008) examined 1,603 open-end international equity funds and finds diversification benefits as a major reason for investors to invest in international funds. His findings also suggest that investors in international funds are less sensitive to loads and fees and international funds originated from families that offer variety of investment objectives attract more investors. Fortin and Michelson (2005) examined 831 funds to analyze the benefits of active international fund management. Their results demonstrate that actively managed international funds outperform the passive indexes thus support the viewpoint of creating benefits from investing in international mutual funds. Eling and Faust (2010) analyzed the performance of hedge funds and mutual funds that invest mainly in emerging markets. They document the superior performance for emerging market hedge funds; however, their findings failed to support the same for the emerging market mutual funds. Hedge funds in their study provide more than double returns than mutual funds and that too at a lower standard deviation than that of mutual funds. In other words, for their sample of funds, the Sharpe Ratio, a measure of return per unit of risk, is much larger for hedge funds compared to the Sharpe ratio of mutual funds. Their results indicate that mutual funds, on average, under perform passive indexes. Analyzing the performance of UK unit trusts with an objective to invest in emerging market equity, Abel and Fletcher (2004) failed to find any superior performance by these trusts over the period 1993-2003. Huij and Post (2011) document persistence of performance for emerging market mutual funds. Their findings suggest that emerging markets are less efficient (compared to developed markets) and therefore active fund management is able to beat the passive indexes, i.e. fund managers with strong selectivity skills are able to earn superior returns. Michelson, Philipova, and Srotova (2008) analyzed 55 emerging markets funds over the period 1999-2005 against three different benchmarks. Their findings reveal that on average, emerging market funds earn monthly return of 0.9163 percent compared to average monthly returns of MSCI Index and S & P index of 0.4330 percent and   -0.0189 percent, respectively. Their results show superior performance by emerging market funds over MSCI and S&P indexes and slight underperformance against emerging market index. Disyatat and Gelos (2001) suggest that emerging market funds tend to outperform their passive market indices. Using a Bayesian framework, Banegas (2010) shows emerging market funds after adjusting for risk and style outperform passive benchmarks.

3. Data and Descriptive Statistics

Majority of the data is taken from Morningstar Direct database. In order to avoid any survivorship bias, all funds including those that are currently dead or merged or acquired over the period 2000-2010 are included in the sample selection process. Any U.S. domiciled fund that invests at least three fourth (75 percent) of funds in emerging market equity is selected. Further, any fund that is classified as index fund, institutional fund, and fund of funds is excluded from the sample selection. It is common that mutual funds shares are issued with multiple share classes and since different share classes differ only in terms of loads and fees and have claims on the same assets therefore consistent with the existing literature, the oldest class of fund is chosen in case multiple share classes are offered by any fund. The initial screening delivers 72 funds that are U.S. domiciled but invest at least 75 percent in emerging market equity. Consistent with the existing literature, only

those funds with a minimum of 36 observations are selected. The final sample consists of 56 unique funds for empirical purposes. Monthly return, monthly net assets and other fund specific variables such as the expense ratio, turnover ratio, manager tenure, percent of fund's investment in its top 10 holdings, investment in different sectors, and average market cap of holdings are taken from Morningstar Direct database. MSCI Emerging Market index is chosen as the proxy for the market. Monthly return of MSCI emerging market index in U.S. dollar is taken from Morningstar Direct database. Three month U.S. Treasury bill rate is used as a proxy for the risk free rate and a time series of monthly returns of 3 month T-bills is taken from the Federal Reserve website. Since this study also attempts to compare the risk adjusted performance of U.S. domiciled funds that invest in emerging markets with U.S. domiciled funds that invest only in the U.S. equity therefore any fund that invests 100 percent in domestic equity is screened out by using the same criteria, i.e. index funds, institutional funds, and fund of funds are excluded from the selection process. Altogether, 368 funds over the period 2000-2010 are selected that invest 100 percent in domestic U.S. equity.

The Sharpe ratio, a measure of return per unit of risk, of each emerging market fund is compared against the Sharpe ratio of the matching domestic fund. To find a suitable match, average total net assets (also known as size of a fund) of each sample fund is compared with the average total net assets of 368 domestic equity funds. Any pure domestic fund whose size (net assets) falls within 70 percent to 130 percent range of the size of sample fund is chosen as the matching fund. In case, multiple funds fall within the specified range, the closest net assets fund is chosen as the matching fund. This criterion is repeated every year. In other words, a matching fund may cease to exist or its size may change dramatically therefore it may not be the right match any more. To remove such a bias, matching is done every year by using the same specified criterion.

Descriptive statistics are shown in table 1. Monthly net assets grew steadily from year 2000 to year 2010.

Table 1
Descriptive Statistics

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
N	33	34	34	36	37	39	46	53	53	53	53	43
TNA	229.1	164.1	155.9	183.5	260.5	391.5	648.2	848.4	672.3	511.1	745.1	437.2
Expense Ratio (%)	2.0	2.0	2.0	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8
Turnover Ratio (%)	103.6	81.3	93.7	93.8	86.5	119.0	113.1	90.5	123.2	119.1	90.0	101.3
Monthly Return (%)	-1.5	0.4	0.0	3.6	1.7	2.1	2.6	2.5	-5.6	5.2	1.5	1.1
Cash (%)	4.4	3.6	3.1	4.7	5.8	7.1	7.5	5.9	4.9	5.6	4.5	5.2
Equity (%)	74.6	73.3	71.0	69.2	70.1	69.9	70.6	73.9	74.2	71.8	73.4	72.0
TTOP (%)	43.8	41.8	43.1	41.4	39.4	40.0	41.1	42.1	44.1	39.8	35.6	41.1
Holdings	107.0	93.0	80.0	96.0	91.0	102.0	118.0	153.0	153.0	165.0	175.0	121.0
Median Market Cap	7,418	4,561	4,674	4,201	5,449	7,513	10531	16,666	17,007	14,234	16,176	9,857
Information Tech.(%)	40.1	30.6	26.3	24.6	25.9	25.5	21.5	19.7	21.8	18.2	17.5	24.7
Manufacturing (%)	34.0	38.1	44.7	46.4	48.4	45.9	47.4	44.6	45.4	47.3	44.3	44.2
Service Sector (%)	25.9	31.3	29.0	29.0	25.7	28.5	31.1	35.8	32.9	34.6	38.2	31.1
Manager Tenure	7.0	6.8	6.7	6.7	6.7	6.6	6.1	5.7	5.5	5.5	5.5	6.3

Note: The table 1 shows average values of fund specific variables of sample funds over the period 2000-2010. *N* is the number of unique funds per year, *TNA* is the average monthly net assets under management(in millions $), *Expense Ratio* is the average expense ratio charged by the fund, *Turnover ratio* is the minimum of aggregated sales or aggregated purchases of securities divided by the average 12-month total net assets of the fund, *Monthly Return* is average monthly return earned by a fund in this study, *Cash* is the average percentage of investment held as cash, *Equity* is the average percentage of investment held in equity, *TTOP* is the fund's investment in its top 10 holdings, *Holdings* is the number of stocks held by a fund, Medcap is the average market cap of a fund's holdings(in millions $), Information Technology Sector is the investment in information technology sector by a fund, and Manufacturing Sector and Service Sector are the investments in Manufacturing and Service sectors respectively by a fund and *Manager Tenure* is the average (years) manager tenure of a fund manager.

In the year 2000, TNA managed by roughly 33 funds was $229.10 million that increased to $745.09 million by the end of 2010, an average growth rate of 20.48 percent per year. The highest amount is noticed in the year 2010 when approximately 53 funds managed approximately $745.09 million worth of net asset while the year 2002 witnessed the lowest amount (of assets under management) of $155.92 million. One of the arguments of not investing in emerging market equity funds is higher expense ratio charged by these funds. Average expense ratio over 11 year period is 1.79%. Over the period 2000-2010, maximum expense ratio was 2.04% (in year 2001) whereas the lowest was 1.66% (in years 2006 and 2007). Expense ratio is pretty consistent throughout the period of this study and in accordance with the general notion, emerging markets funds for this study also charge higher expenses.[6] On average, emerging market equity funds keep 5% investment in cash and cash equivalent. Another observable fact is manager tenure. It appears, on average, managers retain their tenure with funds for 6.25 years which is a pretty solid indication of manager driven performance of these funds. On average, managers invest 41% of a fund's investment in its top 10 holdings. Some analysts argue this as the best ideas of fund managers whereas some may view it as the risk borne by fund managers[7]. It also appears that emerging market funds invest in stable firms; average market cap, an average of market cap of stocks in which fund invests, is $9.86 billion. On average, funds manage a diversified portfolio. Average number of holdings per fund is 121 with highest of 175 in the year 2010 and lowest holdings per fund of 80 in the year 2002. It also appears that emerging market funds invest more in manufacturing sector than in service and technology sectors. In general, it appears that emerging market funds manage a diversified portfolio of stable/large firms and charge higher expense ratio (compared to domestic U.S. equity funds) from a fund investors. Altogether 56 unique equity funds exist in this study over the period 2000-2010; lowest number of funds, 33 unique funds, existed in year 2000 whereas 53 funds existed in each year from 2007 to 2010.

4. Methodology

A fund's alpha and the Sharpe ratio are the two most commonly ways to estimate the abnormal performance of any fund. In the former approach, excess fund return is regressed on the excess market return to test the significance of alpha, commonly known as Jensen alpha. Since market risk alone is not the only factor to influence security's excess return therefore to observe true alpha, fund's excess return is regressed on Fama-French three factors and Carhart's momentum factor (for more details, please refer to Fama and French (1997), Carhart (1997), Wermers (2000) among others). The other method to assess the abnormal performance of any fund is to estimate the Sharpe ratio of the fund (for example, refer to Shawky and Smith (2001), In, Kim, Marisetty, and Faff (2008) among others). Nobel laureate William Sharpe developed this estimation which shows return earned per unit of risk of that security's returns. Several factors are very critical to analyze the abnormal performance of emerging market funds that include: 1) Risk of investment: risk of emerging markets is quite different from risk of domestic U.S. equity market and it is one of the most critical factors for investors who invest in emerging market equity, 2) funds in this study invest in different economies and estimating Fama and French three factors and Carhart momentum factor could be very subjective. Moreover, this research also attempts to compare abnormal performance of each sample fund against a matching fund that invests 100 percent in domestic U.S. equity therefore the Sharpe ratio to assess the abnormal performance is more relevant for this study.

Estimation of the Sharpe Ratio

$$SR_i = [R_{i\ average} - RF_{average}] / \sigma_{Ri}$$

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[6] For example, Chen, Hong, Huang, and Kubik (2004) reported 0.97 percent expense ratio for U.S. equity funds whereas Carhart (1997) documented approximately 1.14 percent expense ratio for his sample of U.S. domestic equity funds.

[7] Shawky and Smith (2005), Lauricella (2001), Kaushik and Barnhart (2008) among others indicate that investment in top 10 holdings is similar to the best ideas of fund managers. Morningstar defines this as "*a measure of portfolio risk. Specifically, the higher the percentage, the more concentrated the fund is in a few companies or issues, and the more the fund is susceptible to the market fluctuations in these few holdings*".

Where:

$R_{i\,average}$ is the average return of fund i over its entire life

$RF_{average}$ is the average 3 month T-bill rate of return[8]

$\sigma_{R\,i}$ is the standard deviation of returns of fund i

Since monthly returns are used in this study therefore average monthly return is multiplied by 12 and standard deviation of monthly returns is multiplied by the square root of 12 to estimate the annual Sharpe ratio.

Cross-sectional Analysis to Explain Abnormal Performance

Though most of these funds have same investment objective, but they tend to be heterogeneous in terms of their fund specific attributes. Therefore, it is important to explain the cross-sectional behavior of abnormal performance of emerging market funds. In order to estimate cross-sectional pattern, the Sharpe ratio of each fund per year is estimated and regressed on fund specific variables.
Model

$SR_{it} = \beta_0 + \beta_1\,Size_{it} + \beta_2\,Expense\,Ratio_{it} + \beta_3\,Turnover_{it} + \beta_4\,Cash_{it} + \beta_5\,Equity_{it} + \beta_6\,Holdings_{it} + \beta_7\,TTOP_{it} + \beta_8\,Tenure_{it} + \beta_9\,2000_{it} + \ldots + \beta_{18}\,2009_{it} + \varepsilon_i$

Where:

SR_{it}	is the annual abnormal performance for each fund obtained by dividing the excess monthly return of fund i over 3 month T-bill rate by the standard deviation of monthly returns. Average monthly returns are multiplied by 12 and standard deviation of monthly returns is multiplied by the square root of 12 to estimate the annual Sharpe ratio of each fund per year.
Size	is the log of Total Net Assets
Expense Ratio	is the management, administrative, and 12b-1 fees as percent of total net assets
Turnover	is the minimum of aggregated sales or aggregated purchases of securities divided by the average 12-month total net assets of a fund
Cash	is the percent of total funds invested in cash
Equity	is the percent of total funds invested in stocks
Holdings	is the number of stocks in a fund
TTOP	is the percent of total funds in its top 10 holdings
Manager Tenure	is the average number of years manager stay with a fund
$\beta_9\,2000_{it} + \ldots + \beta_{18}\,2009_{it}$	are time dummies and year 2010 is the omitted class.

Flow of Funds

Following Sirri and Tufano (1998), and Jain and Wu (2000), this research estimates flow by calculating fund flow as the difference between the total net assets (*TNA*) at time t and the product of total net assets at time period *t-1* and $(1+ R_t)$:

$$\Delta TNA_t = TNA_t - TNA_{t-1} * (1+ R_t)$$

Following the literature, this study does not distinguish between negative and positive flows. To adjust for the size of the fund flow, fund flows are further scaled by taking percentage changes as:

$$Flow_t = \Delta TNA_t / TNA_{t-1}$$

Cross-sectional Analysis to Explain Flow of Funds

In order to explain cross-sectional pattern of flow of funds, this study regresses flow of funds against various fund specific variables that are known to explain abnormal inflow of fund.

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[8] "This benchmark is relevant, even for international funds, because this study takes the perspective of a U.S. investor whose alternative investment is a risk-free Treasury bill" (Tkac, 2001).

Model

$$Flow_{it} = \beta_0 + \beta_1 Flow_{it-1} + \beta_2 MRET_{it-1} + \beta_3 \text{ Expense Ratio}_{it} + \beta_4 Size_{it} + \beta_5 Manager\_Tenure_{it} +$$
$$\beta_5 Dummy\_Technology_{it} + \beta_6 Dummy\_Manufacturing_{it} + \beta_7 Holdings_{it} +$$
$$\beta_8 \text{ Average MarketCap}_{it} + \beta_9 TTOP_{it} + \varepsilon_i$$

Where:

$Flow_{it}$	is the monthly flow of fund of funds
$Flow_{it-1}$	is the monthly flow of funds of a fund lagged by one month
$MRET_{it-1}$	is the monthly return of a fund lagged by one month
$\text{Expense Ratio}_{it}$	is the management, administrative, and 12b-1 fees as percent of total net assets of a fund in month t
$Size_{it}$	is the monthly log of Total Net Assets of fund
$Manager\ Tenure_{it}$	is the average number of years manager stay with a fund
$Dummy\_Technology_{it}$	is a binary variable that takes a value of 1 if investment in information technology sector is more than investment in manufacturing and investment in service sector by fund i in month t else it takes a value of 0
$Dummy\_Manufacturing_{it}$	is a binary variable that takes a value of 1 if investment in manufacturing sector is more than investment in IT sector and investment in service sector by fund i in month t else it takes a value of 0
$Holdings_{it}$	is the number of stocks in a fund in month t
$\text{Average MarketCap}_{it}$	is the average capitalization of the holdings of a fund in month t
$TTOP_{it}$	is the monthly investment of a fund in its top 10 holdings

Expense ratio is reported only on annual basis therefore in accordance with the existing literature, annual expense ratio is divided by 12 to estimate monthly expense ratio. Manager tenure is one figure per fund therefore it is constant per fund per month.

5. Results

Initial Results

Two interesting findings emerged out of this study's initial analysis. Consistent with the findings of a few recent studies, this study also finds positive risk adjusted performance by emerging market equity funds. All 56 emerging market funds have the positive Sharpe ratio whereas only 42 matched funds (U.S. domiciled funds that invest 100 percent in domestic equity) deliver the positive Sharpe ratio over the same period. Moreover, results in table 2 also show that 75 percent of emerging market funds outperformed their domestic peers. Out of 56 funds, 42 emerging market funds beat their matching U.S. equity funds based on one to one comparison of their Sharpe ratios. In other words, return per unit of risk earned by 42 emerging market funds is superior compared to the same earned by the U.S. only equity funds over the period 2000-2010. Results clearly are indicative of superior risk adjusted performance of emerging market funds compared to their matching domestic equity funds. Results find support from the findings of Huij and Post (2011) that emerging market funds exhibit better performance than that of domestic funds.

Cross-sectional Results

Fund Specific Variables and Risk Adjusted Performance

Results in table 3 show that the Sharpe ratio (a measure of risk adjusted return) is heavily affected by the portfolio rebalancing and time period. Consistent with the findings of existing literature on emerging market funds, I find expenses have no impact on fund's return. Interestingly, size is also not relevant for the abnormal performance of emerging market funds. A fund's risk adjusted return is negatively related with fund's turnover ratio. In other words, rebalancing of portfolio is costly and decreases fund's abnormal return. Timing of investment plays a greater role in the performance of these funds. Especially, time period from 2000 to 2003 has negative influence on the risk adjusted return earned by these funds. Our results resonate with the time period of global

recession that started in the beginning of year 2000 and slowed down continues until the end of year 2003.

Table 2
Comparison of the Sharpe Ratio

Name	Sharpe Ratio Sample Fund	Sharpe Ratio Matching Fund	Difference
JPMorgan Russia A	0.2119	0.7476	-0.5357
ING Emerging Countries A	0.1748	0.6560	-0.4812
Templeton Instl Emerging Markets Ser Adv	0.3871	0.8558	-0.4687
ING JPMorgan Emerging Markets Equity S	0.3596	0.8207	-0.4612
Wasatch Emerging Markets Small Cap	0.3867	0.7995	-0.4128
Eaton Vance Parametric Struct Em Mkts A	0.4847	0.8823	-0.3976
JPMorgan India A	0.2555	0.5975	-0.3419
PACE International Em Mkts Eq P	0.2796	0.5233	-0.2437
Invesco Developing Markets A	0.4458	0.6581	-0.2123
Goldman Sachs Struct Emerg Mkt Eq A	0.0197	0.2248	-0.2051
ProFunds UltraLatin America Inv	0.0592	0.2218	-0.1626
T. Rowe Price Emg Europe & Med	0.4495	0.5966	-0.1471
BlackRock Latin America Inv A	0.6395	0.7626	-0.1231
Metzler/Payden European Emerging Markets	0.6942	0.7556	-0.0615
Eastern European Equity A	0.5393	0.5148	0.0245
DWS Emerging Markets Equity S	0.3390	0.2713	0.0677
Templeton BRIC A	0.4153	0.3300	0.0853
Clough China A	0.7645	0.6763	0.0881
Wells Fargo Advantage Emerg Mkts Eq A	0.4901	0.3936	0.0965
Eaton Vance Greater India A	0.3840	0.2653	0.1187
Legg Mason Batterymarch Emerging Mkts C	0.4184	0.2840	0.1344
Goldman Sachs Emerging Market Debt A	0.7646	0.6200	0.1446
Harding Loevner Emerging Markets	0.5255	0.3655	0.1600
Cohen & Steers Emerging Mkts Rel Est A	0.1307	-0.0301	0.1608
ING Russia A	0.7217	0.5583	0.1634
Federated Strategic Income A	0.6779	0.5104	0.1675
Invesco Van Kampen Emerging Markets A	0.3186	0.1236	0.1951
U.S. Global Investors Glbl Emerging Mkts	0.2025	0.0065	0.1960
ProFunds UltraEmerging Markets Inv	0.2445	0.0303	0.2142
U.S. Global Investors Eastern European	0.5713	0.3442	0.2271
Guinness Atkinson China & Hong Kong	0.4031	0.1673	0.2357
Dreyfus Greater China A	0.5209	0.2765	0.2443
Buffalo China	0.0451	-0.2291	0.2741
Laudus Mondrian Emerging Markets	0.1820	-0.1260	0.3080
GuideMark Core Fixed Income Service	0.6377	0.3078	0.3298
Direxion Spectrum Global Perspective Svc	0.3913	0.0611	0.3303
Templeton Developing Markets A	0.3718	0.0398	0.3319
JPMorgan Latin America A	0.5018	0.0550	0.4468
DWS Latin America Equity S	0.5244	0.0770	0.4474
Matthews India Investor	0.6194	0.1475	0.4718

Table 2
Comparison of the Sharpe Ratio

Name	Sharpe Ratio Sample Fund	Sharpe Ratio Matching Fund	Difference
Consulting Group Emerging Mkts Equity	0.3704	-0.1041	0.4744
Federated Emerging Market Debt A	0.7242	0.2302	0.4940
Columbia Greater China A	0.4988	-0.0030	0.5018
Waddell & Reed Global Bond A	0.5802	0.0675	0.5127
Fidelity Advisor Emerging Markets Inc T	0.8168	0.3011	0.5157
T. Rowe Price Latin America	0.6430	0.0810	0.5619
Fidelity Latin America	0.5514	-0.0686	0.6200
Goldman Sachs BRIC A	0.4603	-0.1613	0.6215
Matthews China Investor	0.6714	-0.0006	0.6720
EquiTrust Strategic Yield B	0.6165	-0.0617	0.6782
Croft Income	0.7372	0.0321	0.7051
Invesco China A	0.6395	-0.1033	0.7427
Lazard Emerging Markets Equity Instl	0.5152	-0.2641	0.7793
Aberdeen Emerging Markets A	0.4940	-0.2868	0.7808
Fidelity New Markets Income	0.8435	-0.0507	0.8942
Third Millennium Russia A	0.5093	-0.4005	0.9097

Note: The table 2 shows one to one comparison of the Sharpe ratio of sample funds against matching U.S. domestic funds over the period 2000-2010. Every year each fund's average net assets amount is compared with the set of funds that invest only in domestic equity. Any domestic equity fund that lies within 70% to 130% of net assets of sample fund is selected as the matching fund. This process is repeated every year. In case, multiple funds fall within the specified range, the closest net assets fund is chosen as the matching fund. The Sharpe ratio is the ratio of excess return over standard deviation of returns. *Difference* is the difference between the Sharpe ratio of the sample fund and the Sharpe ratio of the matching fund.

For example, equity market in China experienced as much as -30.5 percent decline whereas equity markets in India, Russia, and Latin America declined by -21.7 percent, -30.1 percent, and -16.6 percent respectively in the year 2000.[9] Results in table 3 Model 1 show that, on average, fund's risk adjusted return decreased by 223 basis points for every 100 basis points increase in investment in emerging equities in year 2000 whereas risk adjusted return increased by as much as 125 basis points for every 100 basis points increase in emerging market equities in year 2009.

Fund Specific Variables and Flow of Funds

Results in table 4 show that investors in emerging market funds follow a conservative style. Results also indicate that investors may not be sophisticated investors, i.e. they simply follow the money and chase past returns. Flow in the current month is heavily influenced by flow in the previous month and raw return in the previous month. Flow of funds in current month increases by 15 basis points for every 100 basis points increase in flow of funds in the previous month whereas flow in the current period increases by 29 basis points for every 100 basis points increase in raw return in the previous month. Results also show that investors are concerned about the size and diversification of a fund, but they are not concerned about loads and fees charged by a fund. Investors do not like to invest in large funds, but they tend to invest in a fund that is well diversified. For example, on average, a 10 percent increase in size reduces flow by 45 basis points a month whereas an increase in 10 percent holdings increases the flow by 4 basis points a month. Moreover, investors also don't care about *sector investment* by these funds. Total investment by these funds can be classified into three categories namely information technology, manufacturing, and service

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[9] Source: Morningstar Inc.

respectively. In order to examine the effects of sector and style investment, I created dummy variables for each sector. For example, if a fund invests more in information technology sector than it invests in either manufacturing or service sector then dummy for information technology is 1, else it takes a value of zero. Similarly, dummy variables for manufacturing and service sectors are created. Cross-sectional estimates for all three dummy variables are insignificant. Further, results show that flow of funds in the current period is neither affected by managerial tenure nor by a fund's investment in its top 10 holdings. Findings of this study strongly indicate naïve attitude of investors. In other words, investors chase past winners or funds that attracted more flow in the previous period. However, results do indicate diversification and size influence investors' decision to invest in emerging market funds.

Table 3
Cross-sectional Analysis to Explain the Abnormal Performance

Variable	Estimate	Estimate
	MODEL 1	MODEL 2
Intercept	1.3627***	1.3335***
Size	-2.4385	-4.2742
Expense Ratio	1.0745	-8.5720
Turnover Ratio	-5.0154***	-4.4197*
Cash		-0.6932
Equity	-0.1915	
Holdings		2.5482
TTOP		3.0672
Tenure		0.4339
2000	-2.2286***	-2.2286***
2001	-0.8491***	-0.8444***
2002	-1.0619***	-1.0755***
2003	1.6156***	1.6094***
2004	0.2350	0.2387
2005	0.2530	0.2637
2006	0.6819***	0.6926***
2007	0.2573	0.2459
2008	-2.8363***	-2.8521***
2009	1.2522***	1.2524***
N	448	448
Adj. R²	0.7029	0.7019

Note: Cross-sectional analysis is presented in the table 3. Dependent variable is the annual Sharpe ratio of fund i. *Size* is the log of average TNA of fund i in year t, *Expense ratio* is the annual expense ratio of fund i in year t, *Turnover ratio,* the minimum of aggregated sales or aggregated purchases of securities divided by the average 12-month total net assets of the fund, is the annual turnover ratio of fund i in year t, *Cash* is the average annual investment in cash by fund i in year t, *Equity* is the percent of investment in common stocks by fund i in year t, *Holdings* is the number of stocks held by the fund by fund i in year t, *TTOP* is the investment in top 10 holdings by fund i in year t, *Tenure* is the average manager tenure, *Size*Holdings* is the interaction term between size and holdings of fund i in year t, *Size*Tenure* is the interaction term between size and manager tenure of fund i in year t, and *TTOP*Tenure* is the interaction term between investment in top 10 holdings and the manager tenure of fund i in year t. *N* is the number of fund year observations.

Model: $SR_{it} = \beta_0 + \beta_1 Size_{it} + \beta_2 Expense\ Ratio_{it} + \beta_3 Turnover_{it} + \beta_4 Cash_{it} + \beta_5 Equity_{it} + \beta_6 Holdings_{it} + \beta_7 TTOP_{it} + \beta_8 Tenure_{it} + \beta_9 2000_{it} + \ldots + \beta_{18} 2009_{it} + \varepsilon_i$

***, **, and * represent the statistical significance at 1%, 5%, and 10% level respectively.

Table 4
Flow of Fund and Fund Specific Variables

Variable	Estimate	Estimate	Estimate	Estimate
	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Intercept	0.0243	0.0262	0.0230	0.0447
LFLOW$_{it-1}$	0.1478***	0.1459***	0.1455***	0.1451***
MRTRN$_{it-1}$	0.2854***	0.2864***	0.2764***	0.2772***
MEXP	5.2555	0.1346	0.8999	-2.2206
MSIZE	-0.0028	-0.0055**	-0.0034*	-0.0052**
TTOP	-0.0037	0.0001	-0.0037	0.0015
Tenure	-0.0008	0.0000	-0.0006	-0.0002
Holdings		0.00004*		0.00003*
MedMCAP		0.0012		-0.0001
Dummy$_{info}$			-0.0002	-0.0163
Dummy$_{manufacturing}$			0.0140	-0.0017
Dummy$_{service}$			0.0073	-0.0056
N	2,431	2,029	2,555	2,153

Note: Cross-sectional analysis to explain the pattern of flow is presented in table 4. *Flow$_{it}$* is the dependent variable and is estimated as the difference between the total net assets (TNA) at time t and the product of total net assets at time period t-1 and (1+ R$_t$). Flow$_t$ = Δ TNA$_t$ / TNA$_{t-1}$

Flow$_{it-1}$ is the flow of fund of fund i lagged by one month, *MRTRN$_{it-1}$* is the lagged monthly return of fund i, *MEXP* is the monthly expense ratio of fund i, *Size* is the log of average TNA of fund i in month t, *TTOP* is the investment in top 10 holdings by fund i in month t, *Tenure* is the average manager tenure, *Holdings* is the number of stocks held by the fund by fund i in month t, MedMCAP is the average market of holdings of fund i in month t, Dummy$_{info}$ is the dummy that takes value of 1 if investment in information technology sector is more than investment in manufacturing and investment in service sector, else 0. Similar rule is applied to estimate Dummy$_{manufacturing}$ and Dummy$_{service}$. N is the number of fund month observations. *Model*

Flow$_{it}$ = β$_0$ + β$_1$ Flow$_{it-1}$ + β$_2$ MRTRN$_{it-1}$ + β$_3$ MEXP$_{it}$ + β$_4$ MSIZE$_{it}$ + β$_5$ TTOP$_{it}$ + β$_6$ Tenure$_{it}$ +

B$_7$ Holdings$_{it}$ + β$_8$ MedMCAP$_{it}$ + β$_9$Dummy$_{infoit}$ + β$_{10}$ Dummy$_{manufacturingit}$ + β$_{11}$ Dummy$_{serviceit}$ + ε$_i$

***, **, and * represent the statistical significance at 1%, 5%, and 10% level respectively.

6. Conclusion

Emerging markets have attracted a lot of capital in the last decade or so. By an estimate, flow of fund in emerging market stocks increased by three fold at an average growth rate of roughly 17% per year. Strong economic growth, liberalization of emerging economies, and technological advancement coupled with slow economic growth rate in the developed economies may explain the excessive demand for emerging markets. This study compares risk adjusted performance of 56 U.S. domiciled funds that invest in emerging markets with matching funds that invest only in the U.S. stocks over the period 2000-2010. Results show that, on average, 75 percent emerging market funds beat their same size domestic equity only counterparts based on risk adjusted return over the period of this study. Moreover, every U.S. domiciled emerging market fund sampled in this study earns the positive Sharpe ratio whereas only 75 percent of matching domestic only equity funds are able to show similar performance. Cross-sectional analysis shows that risk adjusted return is heavily influenced by the time of investment and turnover ratio. Cross-sectional results indicate that funds that rebalance often deliver lower risk adjusted returns. Flow of funds results strongly indicate that investors are not much concerned about loads and fees charged by these funds. They tend to invest money in funds that attract higher inflows in the previous period and funds that earn superior returns in the past. These results indicate naïve behavior of fund investors. Results of this study also suggest that investors in emerging market funds do not care much about sector investment, but they tend to invest in well diversified portfolios.

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