

# Empirical Analysis Of International Mutual Fund Performance

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## ABSTRACT

*Since 1990 there has been a tremendous growth in the investment in international mutual funds. This growth is likely to continue as domestic stock market cools down and more U.S. investors seek higher returns as well as the diversification benefits of foreign assets. Investors are also attracted to international funds in the belief that such funds earn abnormally high returns because of the previous relative inefficiency in those markets. This study examines the annual risk-adjusted returns using Sharpe's Index for ten portfolios of international mutual funds for the period September 2000 through September 2006. The international funds were analyzed by combining the funds into individual portfolios based on sector, geographics and company size. The benchmarks for comparison were the U.S. mutual fund performance reported by MorningStar. The risk-adjusted returns were then determined and compared to each other and to the U.S. market. During this period, nine out of ten of the international mutual fund portfolios outperformed the U.S. market. The portfolio that contained all International Mutual Funds (IMF) significantly outperformed on a risk-adjusted basis the fund that was made up of all of the U.S. stock mutual funds, (All U.S. Stock Funds- USSF). Additionally, the Foreign Small Value (FSV) portfolio, Foreign Small Growth (FSG) portfolio, Emerging Markets (EM) portfolio, Latin America (LA) portfolio, and the Pacific Asia without Japan (PA-J) portfolio all had average annual returns (not adjusted for risk) that exceeded USMF's returns by more than 10 percent.*

## INTRODUCTION

In the aftermath of the 1997 Asian crisis and the 1998 Russian debacle, investors began to question the benefits of international diversification and in particular investing in emerging markets. After a short period of lower investing rates, investors returned strongly to international mutual fund investments. The market responded. As of 2005, almost one-half of the total net asset value of mutual funds is in non-U.S. funds. Most economists believe that the recent trend for investors to increase the holding of international stocks and mutual funds will continue.

There are of course advantages and also unique risks for investors to include non-U.S. mutual funds in their portfolios. Many of the best-known brands in the U.S. are actually owned by foreign firms. The majority of these firms are focused on maximizing shareholder value. There are a large number of firms, and of course their stocks domiciled outside of the U.S., that have extraordinary growth and earning potential. New technologies, advancements in transportation, communication and political changes have created a global economy where currencies are merging and borders are more transparent. With the globalization of the world, competition will be more formidable, which will provide more equity opportunities. Companies outside the U.S. dominate major industries in the world. Worldwide economic expansion has sparked growth of many foreign companies making them increasingly attractive with large cash holdings and aggressive expansion plans.

Investing in international markets provides greater investment diversification that may reduce the overall portfolio risk. Markets of the world are not perfectly correlated and do not move in lockstep. A downturn in one country's economy may be offset by a rise in another.

Including non-U.S. stocks in domestic portfolios does result in an increase in the standard deviation of the portfolio. Though, the higher risk is usually associated with a higher portfolio return. There is evidence that foreign markets are more volatile and emerging markets are especially instable. However, volatility measures upward movement as well as downward. Foreign governments can change quickly and with the change in power there can be a disruption in the business environment. Currency risk is a concern. Changes in the exchange rate with respect to the dollar can impact valuations and returns.

Evaluation of the performance of mutual fund managers is a topic of considerable interest to practitioners and academics alike. To date, most mutual fund performance evaluations have been fairly simplistic: how has a fund performed relative to "the market"? The Standard & Poor's 500 Stock Index is usually used as a proxy for the market, despite the fact that it accounts for only about 70% of the capitalization of the U.S. stock market and is dominated by corporations with gigantic market capitalizations. The decision is normally based on historical returns without any further analysis of relevant risks. When risk is considered, if at all, it is generally in the context of comparing the return of a fund to its peer group; for example, a small cap growth fund is compared with other small cap growth funds or relevant Exchange Traded Funds (such as iShares Russell 2000 growth index, IWO or iShares S&P SmallCap 600/BARRA Growth (IJT)) or some official benchmark index. This method also ignores extremely different risk/return profiles of funds. Sharpe's Reward to Variability ratio (R/V), a useful measure of performance is utilized in this empirical study of mutual funds. The numerator shows the difference between the fund's average annual return and the risk free interest rate; it is thus the reward provided for investor for bearing risk. The denominator measures the standard deviation of the annual rate of return; it shows the amount of risk actually borne. The ratio is thus the reward per unit of variability and the purpose of this study is to quantify this reward to variability ratio, which is also known as risk-adjusted performance, of international mutual funds relative to U.S. mutual funds for the period 2000 to 2005. This study examines the R/V ratios for ten portfolios made up of foreign mutual funds. The international portfolios were formed by combining funds into individual portfolios based on sector, geographics and company size. The benchmark for comparison was the U.S. mutual fund performance reported by MorningStar.

## **LITERATURE REVIEW**

An early empirical analysis of mutual fund performance was done by Friend, Brown, Herman and Vickers (1962). Well-known studies by Trynor (1965), Sharpe (1966) and Jensen (1968) established the standard indices to measure risk-adjusted mutual fund returns. Chang and Lewellen (1985) used arbitrage-pricing theory to investigate mutual fund performance and found that the funds did not outperform a simple buy-and-hold strategy. Cumby and Glen (1990) extended the literature to include international mutual funds. They found that the Morgan and Stanley index did not outperform an international equity index. Droms and Walker (1994) studied international funds for the period of 1971-1990 and concluded that the majority of international funds under performed the U.S. market. Redman, Gullett and Manakyan (2000) studied risk-adjusted returns for international mutual funds. They found for the period 1990-1994, the portfolios of international mutual funds outperformed the U.S. market.

## **METHODOLOGY**

Sharpe's Index of Reward to Variability ratio was used to evaluate the risk-adjusted performance of the mutual funds in the sample. The R/V ratio is calculated as:

$$Sip = (Rp - Rrf) / Sp$$

Where,

Sip = Sharpe's Index of Reward to Variability for portfolio p,

Rp = Return on portfolio p,

Rrf = return on risk-free asset,

Sp = standard deviation of portfolio p.

The numerator in the equation is the excess return over the risk-free return on a portfolio, and Sp is the measure of total risk of the portfolio. Rp, the annual rate of return on a fund is based on the sum of dividend

payments, capital gains distributions, and changes in net asset value; it is thus a measure of net performance-gross yield less the expenses of management and administration. A portfolio has better performance than the benchmark if the Sharpe’s Index is greater than the benchmark. The data for the estimation of the Sharpe’ Index of Reward to Variability came from the Morningstar database for the years 2000-2005. For this study, ten international mutual fund portfolios were constructed and compared to the U.S. equity market portfolio. The ten international funds are All International Stock Funds (AISF), World (W), Foreign Large Value (FLV), International Mutual Funds (IMF), Foreign Small Value (FSV), Foreign Small Growth (FSG), Emerging Markets (EM), Latin America (LA), and the Pacific Asia without Japan (PA-J), and Europe (E). The U.S. equity market portfolio was the All U.S. Stock Funds (USSF).

**RESULTS**

Table I presents the minimum, maximum and average return characteristics for the ten international mutual funds as well as the benchmark, All U.S. Stock Funds. For the period September 2000-September 2006, empirical results show that international funds have performed very well and on average have outperformed U.S. mutual funds. With respect to the U.S. market, the international funds have provided higher returns across all categories of funds.

**Table I**  
**Summary Characteristics 2000-2005**

<b>Fund</b>	<b># Funds</b>	<b>Minimum Return</b>	<b>Maximum Return</b>	<b>Average Return*</b>
All International Stock Funds	1545	-10.6	47.75	12.97
World	312	-8.80	17.48	8.00
Foreign Large Value	130	1.22	19.53	12.92
Foreign Small Value	54	-2.59	23.91	16.60
Foreign Small Growth	62	-3.14	30.68	16.47
Emerging Markets	153	-6.62	36.44	23.11
Latin America	18	3.23	29.57	27.38
Pacific Asia without Japan	75	-3.76	31.18	18.54
Europe (Russia)	232	-8.80	47.75	15.99
Japan	43	-10.6	14.72	8.12
All U.S. Stock Funds	5994	-8.81	31.91	5.37

Average Annual Rate of Return

The variability of return or the standard deviation for the funds as well as Sharpe’s Index, the reward to variability are shown in Table II. Reward is the difference between average annual return and the interest rate; it is thus the reward provided for the investor for bearing the risk. For the period 2000-2006, based on reward to variability ratio, many international mutual fund portfolios have outperformed the overall U.S. mutual fund portfolio. Emerging Markets fund has the largest return after the adjustment for risk followed by funds pertaining to categories of Latin America, Foreign Small Value and Europe. A particularly striking fact about the last finding is that the cost of selecting wrong category of mutual funds is very high.

Table II: Results 2000-2005

Fund	# Funds	Standard Deviation	Average Return	Sharpe's Index Of R/V ratio*
All International Stock Funds (8)	1545	12.92	12.97	.617
World (9)	312	10.50	8.00	.286
Foreign Large Value (7)	130	10.22	12.92	.751
Foreign Small Value (3)	54	12.26	16.60	.946
Foreign Small Growth (5)	62	14.14	16.47	.811
Emerging Markets (1)	153	17.60	23.11	1.029
Latin America (2)	18	22.69	27.38	.986
Pacific Asia without Japan (6)	75	16.77	18.54	.807
Europe (Russia) (4)	232	12.43	15.99	.884
Japan (10)	43	18.86	8.12	.165
All U.S. Stock Funds	5994	11.31	5.37	.033

Significant at the .05 level, except for Japan.

## CONCLUSION

Investors have a large array of mutual funds to select from to form their investment portfolio. Mutual fund offerings have grown in numbers and many funds are very specialized. There are over 10,000 mutual funds; the majority concentrate on specific industries, firm size, geography or growth expectations (risk). Investors may not fully take advantage of possible portfolio risk reduction and higher returns if they exclude international mutual funds from their portfolio. This study shows that performance can be evaluated with a simple, yet theoretically meaningful measure that considers both average return and risk. During the study period, Foreign mutual funds appear to have more volatility and higher risk but have outperformed U.S. mutual funds in nominal and risk-adjusted terms. Predicting in advance which mutual funds would outperform is difficult and the cost of selecting the "wrong" mutual fund is very high. Investors have to keep in mind that sound investment decision-making combines the science of quantitative analysis with the art of qualitative judgment and reason

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