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MORNINGSTAR®

Nonlisted REITs: Buyers Beware

When listed REITs offer so many benefits, it's hard to go nonlisted, for now.

by
Philip J. Martin
REIT Strategist

Commercial real estate can and should be part of a long-term and diversified investment strategy. Beyond the benefits of low correlation to other investment classes, such as equities, commercial real estate provides the opportunity for inflation protection, income, attractive growth, competitive returns, and diversification. For many investors, gaining direct exposure to commercial real estate can be difficult, because of large capital requirements and limited liquidity. A more practical way to invest in the asset class is through publicly traded real estate investment trusts, or REITs.

Publicly traded REITs, which are "listed" on the major exchanges, have proved to improve both the return and risk of a traditional long-term investment strategy. Furthermore, listed REITs have generally outperformed other investment classes during periods of slow economic growth, as well as periods of rising inflation and interest rates. According to the FTSE NAREIT (National Association of Real Estate Investment Trusts) All REIT TR Index, listed REITs would have provided investors with an average annualized total return of 9.7% (and 10.4% for just equity REITs) over the past 20 years (ended Sept. 30), outpacing the S&P 500's 7.6% increase. The index's dividend growth has also impressed, averaging 5.8% annually since 1991 and exceeding the average annualized inflation of 2.6%.

Despite the long-term attractiveness and accessibility of listed REITs, yield-hungry investors have been clamoring for their less-liquid and less-shareholder-friendly nonlisted cousins in recent years. Since 2000, nonlisted REITs have raised an aggregate $73.7 billion, representing 80.2% of the current $91.9 billion equity capitalization of the nonlisted REIT segment. (Estimated enterprise value, or total capitalization, is $150 billion, which assumes 45% leverage on programs closed or within offering periods.) Nonlisted REITs are on pace to raise approximately $10 billion in 2011, the highest annual amount since 2007 when $10.9 billion was raised.

Nonlisted REITs can present a number of problems for the retail investor, to whom most nonlisted REITs are sold. Issues such as high costs, lack of transparency and standardization, a less-than-ideal corporate structure, pressure to invest capital quickly, and potentially unsustainable dividends and growth plague nonlisted REIT securities. The 2007–09 financial crisis has drawn even more attention to these issues. Investors feel misled, and regulators have noticed. Efforts are under way to both improve the product and investor suitability and to better align shareholder interest. For now, however, most investors would be better served in listed REITs.

What Are REITs?

A real estate investment trust is a business trust or corporation that acquires or provides financing for real estate through the combined use of multiple investors' capital. A REIT is a tax-advantaged structure and does not pay corporate income tax to the IRS as long as (among other criteria) it pays out at least 90% of its GAAP taxable net income to its shareholders in the form of dividends. REITs are active, as opposed to passive, managers in that they underwrite all aspects of the commercial real estate investment and management process, including acquisition, disposition, financing, leasing, maintenance, and value-add strategies. Typically, individual REITs focus on a specific commercial property type, such as offices, industrial, retail shopping centers and malls, multifamily/apartments, student housing, medical office, senior care, lodging, and storage facilities. REITs can be further classified as equity or mortgage. Equity REITs own and

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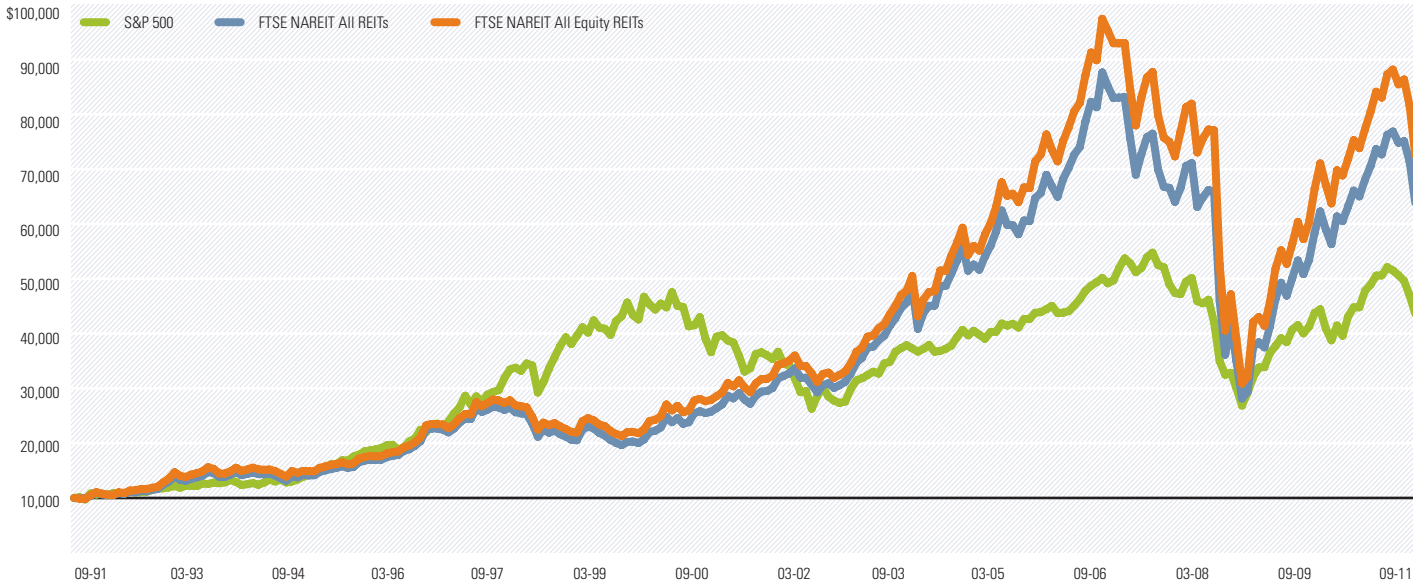
Growth of $10,000 (through 09-11)

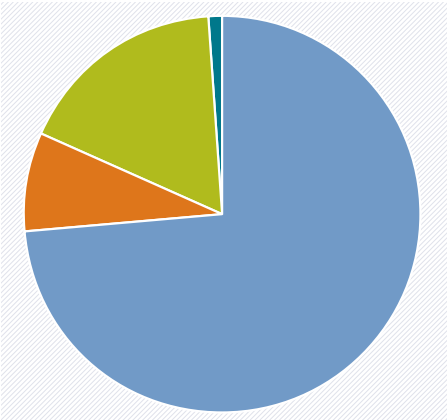


control the underlying commercial real estate and lease these assets to operating companies for profit. Mortgage REITs own real estate mortgages (commercial and/or residential) and profit from the spread on interest rates. Mortgage REITs are typically more volatile because they do not own or control the underlying assets and their revenues are closely tied to fluctuating interest rates.

REITs Date Back to 1960

Congress initially conceived the REIT Act in 1960, enabling the investing public to have access to and benefit from investments in the commercial real estate market. Benefits include access to professional property management/underwriting across investment class, real estate sector, tenant/industry, and geography. Today, the public REIT industry has an equity market capitalization of $505.7 billion (as of Sept. 30), consisting of both listed and nonlisted REITs. Listed REITs account for 81.8% of the total, or $413.8 billion (listed equity: $373.4 billion; listed mortgage: $40.4 billion),[1] while nonlisted account for 18.2%, or $91.9 billion (nonlisted equity: $86.8 billion; nonlisted mortgage: $5.1 billion).[2] Listed REITs are traded on major stock exchanges, while nonlisted REITs are sold by financial advisors and do not trade on major stock exchanges. Presently, there are 146 and 73 listed and nonlisted REITs, respectively.

Total REIT Market Capitalization $ Bil (as of 9-30-11)



Listed Equity REITs	$373.40
Listed Mortgage REITs	40.40
Nonlisted Equity REITs	86.80
Nonlisted Mortgage REITs	5.10
Total	**$505.70**

Significant Nonlisted Growth Has Occurred

Although the nonlisted segment of the REIT industry has been around for some 30 years, its most significant growth has occurred over the past 10 years, with the catalysts being broader acceptance of the REIT structure, healthy commercial real estate fundamentals, and a need for greater investor asset-class diversification and yield. Nonlisted REITs, as of the first quarter of 2011, owned and/or had an investment interest in real estate assets valued at $67 billion, up 419% from $1.6 billion in 2000. Nonlisted REIT sponsors and programs presently number 31 and 73, as compared with four and five in 2000, respectively. Of the 73 current nonlisted REIT programs, 27 are closed to new investors (these represent approximately $53 billion in assets under management), 46 are within effective offering periods (totaling about $19 billion in assets under management), and 13 are in the preliminary stage and not yet effective (a potential aggregate equity raise of about $20 billion).[3]

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1 *NAREIT® REITWatch®* A Monthly Statistical Report on the Real Estate Industry. October 2011.
2 Information provided by contacts at Robert A. Stanger & Co. Inc. and the Investment Program Association.
3 Information provided by contacts at Robert A. Stanger & Co. Inc. and the Investment Program Association.

Listed REITs Are the Precedent and Have Provided the Road Map

Both listed and nonlisted REITs should be considered as long-term investments (at least two to three years or more), but they are not both suitable for all investors.

First, it's important to understand the benefits of listed REITs. Investors in listed REITs benefit from intraday liquidity. Shares freely trade on the major exchanges, allowing investors to purchase shares easily and cheaply. According to NAREIT, approximately 80% of aggregate listed REIT shares outstanding are owned by institutional investors, as opposed to individual retail investors, making the market more efficient (albeit slightly more volatile at times). In terms of size, the equity market capitalization of the listed REIT industry is $413.8 billion ($798.8 billion enterprise value) and consists of 146 individual companies that invest across 15 different real estate types. The equity capitalization of listed REITs has grown at an average annualized rate of 20.7% since 1990, when it aggregated only $8.7 billion across only 58 individual companies. Listed REITs now span nearly all real estate sectors, geographic regions, and tenant type.

Listed REITs are known for being shareholder-friendly. Individual companies provide significant transparency into the management and underlying portfolios of the REITs. Much information can be found on company websites, as well as through conference calls (at least quarterly), SEC filings (10Qs and 10Ks), and press releases. Quarterly supplemental packages provide even greater detail on the REITs' cash flows, portfolio operations, individual properties and markets, tenant concentration and quality, lease terms, capital expenditures, capital structure health and strategy, value-added initiatives (such as redevelopment), investment pipelines, and corporate structure and governance. Furthermore, the majority of listed REITs have attempted to limit conflicts and align shareholder interests by being internally, or self-advised (as opposed to hiring an outside advisor), having destaggered boards (the annual election of board members), and creating compensation plans that are tied to earnings and share-price performance. Finally, many listed REITs are managed by professionals skilled in real estate underwriting, investment, and management. The combination of liquidity, transparency, solid governance, and better management has contributed to the industry's rapid growth.

Listed REITS: the Drawbacks

While listed REITs sound like great investments, they're not immune to losses. Listed REITs experienced significant losses during the recent financial downturn—the FTSE NAREIT All REIT Index dropped 72% between Feb. 7, 2007, and March 6, 2009, significantly more than the S&P 500. But listed REITs are well-positioned to resume growth, having experienced limited dividend reductions and having repositioned balance sheets. Since the crisis, listed REITs have recouped much of the 2007 and 2008 losses. Listed REITs are still trading approximately 29% below the peak valuations reached in February 2007, however, making them attractive relative to other asset classes.

Nonlisted REITs: the Basics

Nonlisted REITs differ dramatically from their listed counterparts. Nonlisted REITs are SEC-registered "public" entities, but they are sold as "blind pool" investments, meaning they raise investment capital before buying and/or identifying specific investments. Shares, or units, of the nonlisted REIT are typically available for $10 each throughout a "best-efforts" offering period, which often spans several years. Nonlisted REIT securities are typically distributed through a broker/dealer affiliated with the REIT sponsor. The affiliated broker/dealer receives fees for marketing, distribution, investor relations, and maintaining SEC registration and reporting requirements. Sales loads average 8%–10% of the initial investment. The nontraded REIT is most often advised by an outside, but affiliated, advisor, who also earns a fee.

Because nonlisted shares or units do not trade on a major exchange, liquidity is very limited. The offerings typically require seven- to 10-year holding periods, although share-redemption programs allow unit holders to redeem all or a portion of their shares after an initial holding period. Redemption prices usually occur below the initial share cost, however, and are subject to strict limitations. For example, redemptions generally must not exceed a certain percentage of shares owned or outstanding, and the REIT must have the available cash. Once the stated life of the nonlisted REIT is achieved, investors may be able to cash out through an initial public offering and listing on a major exchange, or a merger or liquidation. During the life of the nonlisted REIT, reported share prices remain at $10 per share, unless a liquidity event (such as an acquisition or sale) causes the REIT to mark its assets to market.

Nonlisted REITs are sold by financial advisors. On average, nearly 100% of a nonlisted REIT's shares outstanding are marketed to and owned by individual retail investors, rather than institutions, who stick to listed REITs. Investors are attracted to nonlisted REITs' monthly or quarterly dividends, reflected in the 6%–8% annualized historical yields.

Nonlisted REITs: the Drawbacks

Before investing in nonlisted REITs, investors should consider these 11 potential drawbacks:

1 Costs and fees

On top of the list are the costs and fees associated with an investment in nonlisted REITs, which average 15%–18% of the initial investment (a net investment of $0.82–$0.85 per $1.00). This compares with the $0.97–$0.99 net investment in shares of

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listed REIT purchased in the secondary market. Nonlisted REIT fees consist of: selling commissions of 7%–10% to brokers and affiliated broker/dealer; fees to the affiliated advisor of 1%–2%, including organization and offering expenses; asset-management fees of 1%–2% of gross real estate assets; acquisition and disposition fees of 1%–3% of acquisition or sale price; and finally, debt-financing fees of approximately 1%. Relative to listed REITs, the up-front selling commission is the most controversial.

2 Costly diversification

Like most listed REITs, nonlisted REITs generally follow narrow portfolio and operating strategies, which allow management to better capitalize on their sector or geographic expertise. This means diversification across commercial real estate property types is costly, as multiple nonlisted REITs mean multiple sets of high fees (described above).

3 Blind pool structure

Blind pool investments, such as nonlisted REITs, raise investment capital before buying and/or identifying investments. Because a nonlisted REIT's offering and investment (or stabilization) period is a several-year process, investors may find it difficult to evaluate the merits of the investment. In comparison, most listed REIT balance sheets already include existing real estate assets and business models, which generate operating cash flows and can be analyzed and assessed.

4 Will operating cash flows cover dividends?

The blind pool investment structure means there may be limited initial operating cash flow to meet the 6%–8% annual dividend yield expected by the investor. This may require the REIT to utilize cash reserves, investor capital, bank lines of credit, asset sales, and/or sales of additional shares to pay the dividend. Essentially, investors in nonlisted REITs may be receiving a return of capital instead of a return on capital. Although this is spelled out in the prospectus, it does not take away from potential harm to investors.

Even after the offering and stabilization periods have ended, the average nonlisted REIT pays dividends well in excess of operating cash flow, due in part to the high cost structure. For example, the average nonlisted REIT, currently and over the past several years, has paid out 110%–140% of FFO (funds from operations, or GAAP net income, excluding gains or losses from sales of properties, and adding back real estate depreciation and amortization), resulting in significant dividend reductions for many of these companies. In comparison, the average listed REIT, according to NAREIT, has an FFO dividend payout ratio of 70%, which means the operating cash flow sufficiently covers current dividends and can cushion against a future dividend increase or economic downturn.

In fairness, listed REITs did experience cash flow concerns and uncertainty during the recent economic crisis. According to an ongoing study by Florida International University and NAREIT, 30 of 129 listed REITs reduced dividends during the fourth quarter of 2008 and the first quarter of 2009. The average dividend reduction, according to Morningstar's estimates, was 61.1%. An additional 18 listed REITs suspended dividends entirely. Of the 48 listed REITs that reduced or suspended dividends, 21 have since reinstated and/or resumed dividend growth. As an industry, listed REITs have experienced average annual dividend growth of 5.0% since year-end 2008.

5 The "have to" investor

The dividend obligations, and the rate at which investors are pouring money into these offerings, put significant pressure on the nonlisted REIT and its advisor to invest the blind pool's money as quickly as possible, regardless of the current market conditions. This type of scenario does not lend itself to the best or most appropriate investment decision-making process. Furthermore, it does not allow for proper risk management throughout different market cycles. Consider that, between 2005 and 2008, nonlisted REITs raised and invested $33.3 billion (45.2% of the total assets raised since year-end 1999). This period is widely considered the peak in commercial real estate valuations. The real estate acquired during this period is likely worth less today.

6 Acquisition-only marketing machines

The majority of nonlisted REITs focus on acquisitions, rather than development, and spend significant resources on marketing, sales, and distribution. Morningstar favors proven REIT business models and management teams with a diversified real estate skill set, which includes acquisition, development, redevelopment, and property-management experience. These skills allow the REIT to exploit growth opportunities and manage risk and cash flows throughout real estate and economic cycles. Many of these characteristics and skills are lacking within many nonlisted REIT business models.

7 Potential conflicts of interest

A REIT can choose to be managed internally or externally. Most listed REITs are internally advised, while most nonlisted REITs are, at least initially, advised by an "outside" advisor that is affiliated with the REIT sponsor. Just like internal management, outside advisors operate and supervise REIT activities, including administration, acquisition, and disposal of assets, portfolio management, property management, shareholder services, and other related services. Outside advisors shoulder the costs of REIT management for a fee. Originally, the benefit of an outside advisor may have been cost efficiency (as the REIT lacks sufficient cash flows in its early years), but this point is arguable. What has occurred in practice,

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however, is that REIT sponsors choose "outside" advisors, which are most often owned, controlled, and managed by the principals and the board of the REIT. The advisor stands to benefit from a significant payoff when the REIT internalizes or acquires the advisor in the future. Much of this financial gain is at the expense of investors. (See below.)

8 Internalization

Internalization is the process by which a nonlisted REIT acquires its outside advisor, at a time deemed appropriate by a board, which may not be truly independent from the REIT sponsor or outside advisor. Unsurprisingly, the price paid by the nonlisted REIT for the advisor is typically high (often described as egregious) and based upon a multiple of advisor-fee revenue rather than the advisor's value creation or the portfolio's operating and return metrics. Even worse, these overpriced internalizations are marketed as an attempt to better align shareholder interests.

9 Lack of transparency

Nonlisted REITs are SEC-registered public entities and are therefore subject to minimum reporting requirements, such as filing quarterly and annual financial documents. We live in a relative world, however. Nonlisted REITs report far less useful or relevant data as compared with their listed counterparts. For example, most listed REITs host quarterly conference calls, property tours, and management visits for investors and analysts. Additionally, the majority of listed REITs provide information packages to supplement required filings. These disclosures outline, in detail, pertinent information such as individual properties and markets; aggregate and same store portfolio operating performance; leasing details, including tenant concentration and credit quality; capital structure; capital expenditures; FFO and adjusted-FFO breakdown; dividend coverage; and acquisitions and developments/re-developments. This transparency provides the public with the necessary tools to make an intelligent and informed investment decision in listed REITs and has contributed to the industry's global growth and investor acceptance. Conversely, nonlisted REITs rarely disclose more than is required by the SEC, making it difficult for investors to adequately screen or assess these companies, especially when considering their illiquidity and blind-pool structure. Investors can turn to the handful of firms, such as Robert A. Stanger & Co. Inc., which specialize in the research and valuation of nonlisted REITs. These firms are hardly independent, however, as they have financial relationships with the nonlisted REITs.

10 Volatility—more than meets the eye

One of the benefits touted by nonlisted REITs is that the shares do not swing with the stock market. It's true that the daily share-price movements are minimal, because these shares are not listed on a major exchange, because net asset value is determined very infrequently, and because the underlying investments are not marked-to-market until a liquidity event occurs. It would be naive to think, however, that underlying nonlisted REIT portfolios and business models are not affected, both positively and negatively, by many of the same factors that contribute to stock market volatility. In fact, the 2007–09 economic downturn resulted in significant declines in the underlying cash flows and rental-rate growth, and therefore portfolio valuations, for nonlisted REITs. Sudden dividend reductions and unit-price markdowns took many investors by surprise. More disclosures combined with a regular mark-to-market and an independent valuation process would have certainly exposed this increased volatility and risk profile. At the very least, better communication may have limited the panic felt by investors.

11 Limited access to capital and illiquidity

Nonlisted REITs gain access to capital primarily through retail investors (not institutional investors) during specific offering periods and under announced terms. These limitations may result in a nonlisted REITs' inability to raise capital when needed, for refinancing or capital-structure purposes, for example. This illiquidity may result in the undesirable scenario of having to sell assets at an inopportune time. The illiquidity extends to nonlisted REIT investors, who (as previously mentioned) have limited options to cash out. During the recent financial crisis, many share-redemption programs were suspended, at least temporarily.

A Call to Arms

The drawbacks of nonlisted REITs became readily apparent in the recent market downturn. Investors seeking to cash out better understood the illiquid and opaque nature of nonlisted REITs, many of which suspended share-redemption programs, reduced or suspended dividends, and gave no details regarding portfolio performance and share-price valuations. The result was investor outrage, followed by lawsuits in some cases.

FINRA took notice. In March 2009, FINRA began a broad-based investigation of broker/dealers selling nonlisted REITs, focusing on investor suitability, marketing practices, and adequacy of disclosures to customers. Enforcement action was taken on a number of brokers, including Merrimac Corporate Securities Inc. and David Lerner and Associates.[4,5] In September 2009, FINRA issued Regulatory Notice 09-09, which requires brokers to carefully investigate a nonlisted

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4 FINRA Disciplinary Proceeding No. 2007007151101 Dec. 8, 2010. Department of Enforcement, Complainant v. Merrimac Corporate Securities Inc. (CRD No. 35463). Respondent. http://www.finra.org/web/groups/industry/@ip/@enf/@adj/documents/ohodecisions/p122806.pdf

5 FINRA News Release, May 31, 2011. David Lerner Associates Inc. Complaint. http://www.finra.org/Newsroom/NewsReleases/2011/P123738

REIT's dividend-distribution program. Furthermore, these rules put 18-month limits on the staleness of a nonlisted REIT's share price. In September 2011, FINRA issued Regulatory Notice 11-44, requesting comments on a rule that proposes a less-strict share-price valuation rule, in lieu of the new 18-month rule. But at least this notice proposes that the initial share prices of nonlisted REITs (and other direct participation programs) appear net of fees and expenses on customer account statements.

The Dodd-Frank Financial Services Regulatory Reform Act of July 2010 also attempts to put more of the responsibility on the shoulders of broker/dealers. An SEC study released earlier this year recommends raising standards for the delivery of financial advice by brokers and broker/dealers. According to the study, the SEC recommends that all brokers and financial advisors adhere to the same strict fiduciary standard that currently applies to investment advisors when they provide personalized investment advice to retail customers. The primary change would categorize a broker/dealer as a fiduciary anytime it provides advice and receives a fee, directly or indirectly, for the advice. The prior rule required fiduciary status only when the advice-giving was provided on a regular basis.

Finally, the real hope for REIT reform may come from the nonlisted REIT sponsors themselves. Some existing nonlisted REIT programs are beginning to provide more disclosures, lower fee structures, regularly updated net asset valuations, improved advisor-internalization valuation methodologies, and compensation packages that are more aligned with shareholder interests. Some even offer daily priced offerings and are targeting institutional investors. Reporting metrics and valuation have also improved, as the industry now reports a standardized modified FFO and provides an independent net asset valuation or appraisal 18 months following the conclusion of an offering (unless the rule is repealed).

What the Future May Hold

Presently, Morningstar does not believe a significant investment in nonlisted REITs makes sense for most investors as there are still too many drawbacks and unresolved issues. We believe listed REITs to be the most appropriate option, from the standpoint of both the alignment of shareholder interests, and long-term risk/return potential. That said, a better nonlisted REIT product is possible—the segment is currently in a state of transition, with efforts under way to improve investor suitability, transparency, standardization, fee structure, and incentive programs. FINRA is driving much of this, but nonlisted REIT sponsors have, increasingly, begun to proactively address concerns. There is a real first-mover opportunity for both sponsors and the broker/dealer in this regard, making a better REIT product a win-win for investors, sponsors, and broker/dealers alike.

Quant Corner: The ABCs of Hedge Funds: Alphas, Betas, and Costs

Despite hedge funds' high fees and high levels of market risk, they still add alpha.

by
Roger Ibbotson, Ph.D.
Founder, Ibbotson Associates
Professor, Yale School of Management
Partner, Zebra Capital Management

Peng Chen, Ph.D., CFA
President, Morningstar Investment Management

Kevin X. Zhu
Senior Research Consultant (former)

This study is an abridged and slightly modified version of the March 30, 2010, working paper

Hedge funds experienced negative returns and net withdrawals during 2008, interrupting a two-decade stream of almost continuous positive aggregate performance and asset growth. In 1990 there were only about 530 hedge funds managing about $50 billion. By the end of 2009, there were more than 8,000 hedge funds managing $1.6 trillion.[1] The strategy mix of the hedge fund industry has dominated by funds following a global macro strategy, while in 2008 the largest number of funds managed equity-based strategies like long-short equity and event-driven. Hedge funds have gained increasing acceptance among both institutional and individual investors.

This study updates Brown, Goetzmann, and Ibbotson (1999), who found that statistically significant alphas were earned in the hedge fund industry between 1989–1995, before much hedge fund data were available.[2] By starting in 1995 and analyzing the period through December 2009, we were able to analyze a relatively complete 15-year data set that corrects for survivorship bias by including dead funds and corrects for backfill bias by excluding backfilled data. Many other researchers have studied hedge funds. These include Fung and Hsieh (1997, 2000, and 2004); Asness, Krail, and Liew (2001); and Liang (2000).

Despite the growing mainstream use of hedge funds, the industry is largely unregulated. This gives hedge fund managers tremendous flexibility but makes accurate measurement of performance difficult. Because hedge funds are not required to report their returns, most hedge fund returns are reported to data collectors on a voluntary basis.

It is important to distinguish between the returns that come from alpha and beta. The alpha component is value added and does not appear to be present in the mutual fund industry in aggregate. On the other hand, the return from beta can be readily produced by investing in mutual funds or by investing in a diversified portfolio of stocks and bonds without any special investment management skill. Presumably, the high alphas hedge funds have earned, along with their low correlations with other asset classes, have led to the great interest in this industry and the corresponding high cash inflows. Our results confirm that hedge funds added alpha over the period and also provided excellent diversification benefits to stock, bond, and cash portfolios.[3]

Hedge Fund Return Measures

We used monthly hedge fund return data from the TASS database from January 1995 through December 2009. There were 8,421 funds, 3,408 of which were alive and 5,013 of which were dead at the end of December 2009. We eliminated fund of funds from this analysis. Table 1 presents the detailed breakdowns. For each fund, we collected the after-fee monthly return data.[4] For survivorship bias, we compared the returns between

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1 HFR press release, Jan.20, 2010.
2 Brown, Goetzmann, and Ibbotson (1999) attempted to estimate the impact of survivorship bias, although they did not have a complete sample of dead funds. They also recognized the potential selectivity biases in their database.
3 Fung and Hsieh (2004) showed that hedge fund alphas are significantly positive even with the inclusion of nontraditional beta factors.
4 The analysis in this paper is conducted using after-fee return data. We estimate the gross-fee total return on a hedge fund portfolio by applying the typical fee structure from the TASS database, which was usually a 1.5% management fee and a 20% incentive fee.

portfolios with and without dead funds. For backfill bias, we compared the returns between subsamples with and without backfilled return data. We then analyzed the survivorship bias and backfill bias in hedge fund return data by comparing returns on the three portfolios across the six subsamples of funds.

Table 1: Number of Hedge Funds in the TASS Database, January 1995–December 2009

Funds of Funds	Total	Funds of Funds	Total Excl Funds of Funds
Live	5,970	2,562	3,408
Dead	7,413	2,400	5,013
Live + Dead	13,383	4,962	8,421

Survivorship Bias

When a fund fails, it is often removed from a database along with its performance history. Its elimination creates a survivorship bias because the database then only tracks the successful funds. Survivorship bias typically occurs when a dying fund (with lower returns) stops reporting performance, creating an upward bias in a fund database with only live funds. Table 2 presents our estimates of survivorship bias from January 1995–December 2009 using the equally weighted portfolio. In the database with backfilled return data, the equally weighted portfolio with live-only funds returned 14.26% a year, compared to 11.14% with both live and dead funds. Therefore,

Table 2: Measuring Hedge Fund Returns: Survivorship Bias and Backfill Bias, January 1995–December 2009

	Compound Annual Return %	Standard Deviation %
With Backfill[a]		
Live Only	14.26	6.49
Live + Dead	11.14	6.18
Without Backfill[a]		
Live Only	12.84	6.74
Live + Dead	7.63	6.55
HFRI Fund Weighted Comp Index[b]	10.02	7.50
CSFB/Tremont Hedge Fund Index	10.35	7.80

a Equally-weighted post-fee returns from the TASS database, January 1995–December 2009.

b The data for HFRI is from January 1995–July 2009.

including backfilled data, the survivorship bias is estimated to be 3.12% (14.26%–11.14%) per year. When we exclude the backfilled data, the live-only funds returned 12.84% per year, compared to 7.63% for the equally weighted portfolio with dead and live funds. This result suggests a more accurate estimate of survivorship bias of 5.21% a year (12.84%–7.63%). By excluding the backfilled data, our survivorship estimate is substantially higher than others have estimated.

Backfill Bias

Backfill bias occurs because many hedge funds include prior unreported performance to data collectors when they join a database. These backfilled returns tend to provide an upward bias to the overall return data, because typically only favorable early returns are reported. Table 2 presents our estimates of backfill bias from January 1995 to December 2009 using the equally weighted portfolio. In the database with backfilled return data, the equally weighted portfolio with live-only funds returned 14.26% a year, compared with 12.84% excluding the backfilled data. Therefore, the backfill bias is estimated to be 1.42% (14.26%–12.84%) per year for the live funds. When we included the dead fund data, the equally weighted portfolio with backfilled data returned 11.14% per year, compared with 7.63% for the equally weighted portfolio without the backfilled data. This indicates that the backfill bias is 3.51% per year over the live-plus-dead sample. Thus, backfill bias can be substantial, especially when using the complete sample of live-plus-dead funds.

Is a Bigger Hedge Fund Better?

Larger funds tend to have less backfill bias. To further study the impact of fund size on returns, we constructed a series of portfolios ranked according to the reported assets under management, or AUM, for each fund. We ranked funds based on the previous month's AUM (thus eliminating look-back bias); then we grouped them into various categories based on the ranking. We then calculated the returns of an equally-weighted portfolio for each category. Table 3 presents the results. On average, the largest 1% of the funds returned 10.10% after fees, outperforming all the other categories. Funds in the largest 1% category outperformed the average by over two percentage points a year. The standard deviations, however, are also correspondingly higher; the extra returns achieved by the larger funds are associated with higher average risk.

Table 3: Is Bigger Better? January 1995–December 2009

Category	Compound Annual Return %	Standard Dev %	End-of-Sample Cat Min AUM ($ Mil)
Largest 1%	10.10	11.56	103,696
Largest 5%	8.60	9.02	6,524
Largest 10%	8.70	8.98	3,009
Largest 20%	8.85	8.16	1,612
Largest 50%	8.03	6.39	196
Smallest 50%	7.45	6.90	1

Note: Categories were formed at the beginning of each period, with the returns measured afterward (out of sample); AUM amounts are as of December 2009.

Sources of Hedge Fund Returns

After controlling for both the survivorship and backfill biases in the returns, we investigated the sources of hedge fund returns. Hedge funds are often characterized as investment vehicles that are not highly correlated with the traditional stock and bond markets because much of their returns are generated through manager skill. In other words, compared to traditional investment vehicles (for example, mutual funds), a portion of the return of hedge funds comes from a positive net alpha component.

In this study we focused on determining what portion of hedge fund returns is derived from traditional long beta exposures (that is, stocks, bonds, and cash) and what portion is from hedge fund alpha. Asness (2004a, 2004b) further proposed breaking hedge fund alpha into beta exposure to other hedge

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funds and manager-skill alpha. Fung and Hsieh (2004) analyzed hedge fund returns with traditional betas and nontraditional betas, which include trend following exposure (or momentum) and several derivatives-based factors. They found that adding the nontraditional beta factors can explain up to 80% of the monthly return variation in hedge fund indexes. Jaeger and Wagner (2005) also increased their R^2s by adding in other hedge fund factors and concluded that hedge funds "generate returns primarily through risk premia and only secondarily through imperfect markets." We also conducted a separate analysis that included nontraditional betas, using the seven-factor model proposed by Fung and Hsieh (2004).

Although we agree that a portion of the hedge fund returns can be explained by nontraditional betas (or hedge fund betas), these nontraditional beta exposures are neither well specified nor agreed upon, and are not readily available to individual or institutional investors. A substantial portion of alpha can always be thought of as betas waiting to be discovered or implemented. Nevertheless, because hedge funds are the primary way to gain exposure to these nontraditional betas, they should be viewed as part of the value added that hedge funds provide relative to traditional long-only managers.

Therefore, our analysis concentrated on separating the hedge fund returns using only the traditional stock, bond, and cash beta exposures that are easily accessible for investors without hedge funds. We calculated the average amount of hedge fund returns that come from long-term beta exposures versus the hedge fund value-added alpha. We also compared the fees that hedge funds charged relative to the amount of alpha that hedge funds added.

Data and Model

To estimate hedge funds' aggregate alpha, beta, and costs, we analyzed the performance of a universe of about 8,421 hedge funds in the TASS database from January 1995 through December 2009. We focus on the live-plus-dead fund sample that excludes the backfilled data. This corrects for both the survivorship and the backfill bias, including the problems with the TASS database noted by Aggarwal and Jorion (2010) because TASS notes the entry date into their databases including the merged Tremont funds. That corrected overall compound return for this equally weighted sample is 7.63% compared to 8.04% on S&P 500 stocks over the same period.

We use the equally-weighted index using the live and dead funds without backfilled data constructed as hedge fund return series for this analysis, because it has the least amount of both survivorship and backfill bias. We also construct indexes for each of nine hedge fund subcategories in the TASS database using the same methodology. The nine subcategories are convertible arbitrage, emerging markets, equity market-neutral, event driven, fixed-income arbitrage, global macro, long/short equity, managed futures, and dedicated short.

Aggregate Alpha, Beta, and Cost Results

Our attribution is based upon the return-based style analysis model developed by Sharpe (1992) on mutual funds. We maintained the constraint that all style weights sum to one. We allowed individual style weights to be negative or above one to account for shorting and leverage. We also included lagged betas and contemporaneous betas to control for the impact of stale pricing on hedge fund returns.[5] The benchmarks used in the return-based analysis are the S&P 500 total returns (concurrent and one-month lag), U.S. intermediate-term government-bond returns (including a one-month lag), and cash (U.S. Treasury bills).[6] Again, in this analysis we chose to include only the traditional stocks, bonds, and cash as the beta exposures because we were mostly interested in the value added by hedge funds to investors holding portfolios allocated to only traditional stocks, bonds, and cash.

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Table 4: Regression Results, January 1995–December 2009

Subcategory	Compound Annual Return %	Annual Alpha %	Stocks	Bonds	Cash	R^2
Convertible arbitrage	7.31	2.76	0.34	-0.22	0.89	0.35
Emerging markets	9.09	5.00	0.65	-0.69	1.04	0.39
Equity market neutral	6.54	2.38*	0.09	0.02	0.89	0.19
Event driven	8.10	3.73*	0.31	–0.29	0.99	0.52
Fixed-income arbitrage	6.16	2.39	0.12	–0.13	1.01	0.12
Global macro	7.08	2.10	0.15	0.22	0.62	0.10
Long-short equity	10.29	5.16*	0.46	–0.28	0.82	0.53
Managed futures	5.56	1.17	-0.04	0.52	0.52	0.10
Short	–0.45	1.74	-0.89	0.34	1.55	0.56
Overall equally-weighted	7.63	3.01*	0.32	–0.21	0.89	0.47

Notes: This table reports regression results for equally-weighted indexes' live-plus-dead, no-backfill, post-fee returns. The betas for stocks and bonds are the sums of their betas and their lagged betas.
*Statistically significant at the 5% confidence level.

5 Asness, Krail, and Liew (2001) point out that many hedge funds hold, to varying degrees, hard-to-price illiquid securities. For the purposes of monthly reporting, hedge funds often price these securities by using either the last available traded prices or estimates of current market prices. These practices can lead to reported monthly hedge fund returns that are not perfectly synchronous with monthly S&P 500 returns, due to the presence of either stale or managed prices. Nonsynchronous return data can lead to understated estimates of actual market exposure.

6 We also ran the analysis with other benchmarks (small cap, growth, value, high yield, and so on) and the results were similar. We used the data from the *Ibbotson® SBBI® 2010 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation, 1926–2009* (Chicago: Morningstar, 2010).

Table 4 (previous page) presents the equally weighted compound annual return of each of the nine categories and the equally weighted index of all the funds. The overall annual compound return of the equally weighted index was 7.63% over the period with an annualized alpha of 3.01%. Note that all nine subcategories had positive alphas over the entire 15-year period, with three of them exhibiting a statistically significant alpha at the 5% level. The overall alpha estimate of 3.01% was also statistically significant at the 5% level.[7]

In Table 5, we subtracted out the 3.01% alpha return leaving a 4.62% return that can be explained by the stock, bond, and cash betas. We estimated overall fees of 3.78% based upon the median fee level charged by the funds (usually a 1.5% management fee and a 20% incentive fee). By adding estimated fees to the reported post-fee return, we arrived at a pre-fee return for the index of 11.24%.[8] The pre-fee return of 11.24% for the overall sample can now be separated into the fees of 3.78% and a post-fee return of 7.63%, which can in turn be broken down into the alpha of 3.01% and the systematic beta return of 4.62%. Note that both the systematic return and the fees exceed the alpha (post-fees), but nevertheless, the alpha is significantly positive. Exhibit 1 illustrates the breakdown of fees, systematic beta returns, and alphas for each of the nine subcategories of funds and the overall equally-weighted sample.

We also conducted a separate analysis that included nontraditional betas. We used the seven-factor model proposed by Fung and Hsieh (2004) with the equally weighted overall index. The results are reported in Table 6. Both the R^2 and the annual alpha were higher than that of the model that included only

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Table 5: Sources of Returns: Alphas, Betas, and Costs, January 1995–December 2009

Subcategory	Pre-Fee Return	Fees	Post-Fee Return	Alpha	Systematic Beta Return	Alpha/ Fee Ratio	Info Ratio	Sharpe Ratio
Convertible arbitrage	11.01	3.70	7.31	2.76	4.55	0.74	0.44	0.97
Emerging markets	13.23	4.15	9.09	5.00	4.09	1.21	0.41	0.65
Equity market neutral	10.05	3.51	6.54	2.38	4.15	0.68	0.86	2.10
Event driven	12.00	3.90	8.10	3.73	4.37	0.96	0.91	1.38
Fixed-income arbitrage	9.57	3.41	6.16	2.39	3.77	0.70	0.52	1.27
Global macro	10.72	3.64	7.08	2.10	4.97	0.58	0.35	1.13
Long-short equity	14.73	4.45	10.29	5.16	5.12	1.16	0.79	1.10
Managed futures	8.83	3.27	5.56	1.17	4.40	0.36	0.13	0.61
Short	1.32	1.76	–0.45	1.74	–2.19	0.99	0.13	0.07
Overall equally-weighted	11.42	3.78	7.63	3.01	4.62	0.80	0.63	1.16

Notes: This table reports the equally-weighted indexes' live-plus-dead, no-backfill, post-fee returns and alphas from Table 4 with systematic beta return being the difference between the post-fee returns and alphas. Fees are based on median fees, usually a 1.5% management fee and a 20% incentive fee. Pre-fee returns are post-fee returns plus fees.

Exhibit 1: Sources of Hedge Fund Returns by Category: Alpha, Betas, and Costs, January 1995–December 2009

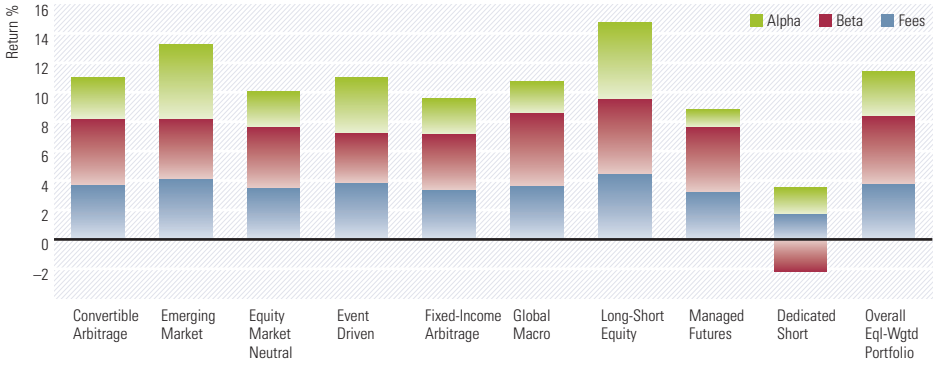


Table 6: Fung-Hsieh Seven-Factor Model, January 1995–December 2009

Factor	Proxy	Beta %
Bond trend-following factor	Return of PTFS bond look-back straddle	–0.008
Currency trend-following factor	Return of PTFS currency lookback straddle	0.010
Commodity trend-following factor	Return of PTFS commodity look-back straddle	0.014
Equity market factor	S&P monthly total return	0.257
Size spread factor	Wilshire Small Cap 1750 Index return less Wilshire Large Cap 750 Index monthly return	0.192
Bond market factor	Monthly change in the 10-year Treasury constant maturity yield	–2.257
Credit spread factor	Monthly change in the Moody's Baa yield less 10-year Treasury constant maturity yield	–28.962
Annual alpha		5.17*
R^2		0.63

Notes: This table reports results from the seven-factor model for equally-weighted indexes' live-plus-dead, no-backfill, post-fee returns. PTFS stands for primitive trend-following strategy. The three trend-following factors were downloaded from David A. Hsieh's website: http://faculty.fuqua.duke.edu/~dah7/HFRFData.htm
*Statistically significant at the 5% confidence level.

7 The betas for stocks and bonds are the sums of their betas and their lagged betas. We also calculated an alpha for the overall equal-weighted index (live plus dead without backfill), with the constraint that the betas sum to 1 relaxed. The alpha is also positive and statistically significant at the 5% level.

8 The funds in the TASS database are reported net of fees. Median fund fees are used to estimate fees. For many of the funds, measuring fees perfectly is impossible because many fees are privately negotiated and not reported. Also, the connection between gross returns and net returns is further complicated by high-water marks.

Table 7: Year-by-Year Post-Fee Returns, Alphas, Systematic Beta Returns, and Betas

Year	Post-Fee Return %	Alpha%	Systematic Beta %	Stocks Beta	Bonds Beta	T-Bills Beta
1998	–2.38	–14.07	13.31	0.55	–0.63	1.08
1999	25.19	7.20	16.96	0.47	–0.70	1.23
2000	1.90	6.89	–4.81	0.51	–0.92	1.41
2001	1.95	10.27	–7.97	0.33	–1.23	1.90
2002	1.17	10.08	–8.30	0.30	–0.41	1.10
2003	17.62	12.06	4.95	0.19	–0.27	1.09
2004	7.77	3.06	4.62	0.31	0.19	0.50
2005	8.96	5.14	3.67	0.33	0.30	0.37
2006	11.75	2.65	8.89	0.42	0.32	0.26
2007	10.02	3.38	6.34	0.64	0.17	0.19
2008	–16.08	6.65	–21.75	0.53	–0.11	0.58
2009	16.38	5.93	9.63	0.37	–0.15	0.78

Notes: This table reports the year-by-year return results for the overall equally-weighted index (using live-plus-dead, no-backfill returns), with the out-of-sample sum of betas equal to 1. The betas for stocks and bonds are the sums of their betas and their lagged betas.

Exhibit 2: Year-by-Year Compound Net Hedge Fund Returns, January 1998–December 2009

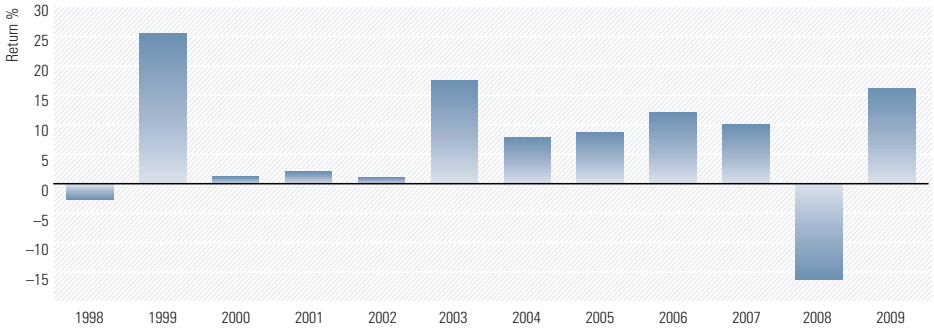
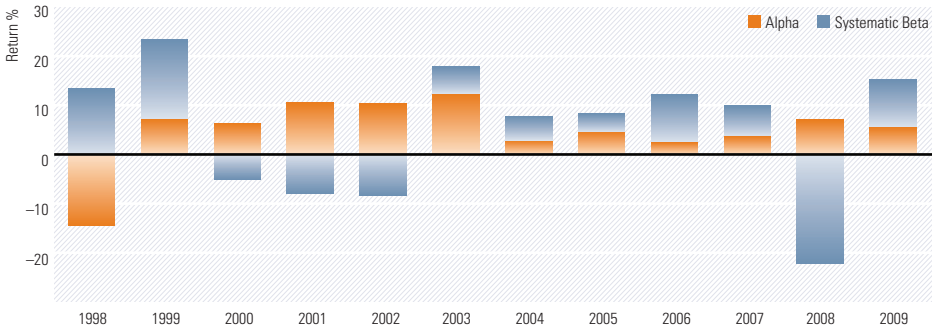


Exhibit 3: Year-by-Year Hedge Fund Alpha and Systematic Beta Returns, 1998–2009



stocks, bonds, and cash. The alpha estimate is similar to the one reported in Fung and Hsieh (2004), albeit with a much longer data history. This indicates that even accounting for the nontraditional betas, hedge funds added significant alpha over the period.

Year-by-Year Results

We examined the year-by-year return results in Table 7 and Exhibit 2. The aggregate hedge fund returns were positive in all years except 1998 and 2008, although between 2000–02, the returns were 2% a year or less.

We conducted a year-by-year analysis to estimate the annual hedge fund beta and alpha returns using an out of sample three-year rolling window analysis. Table 7 and Exhibit 3 show the year-by-year alpha and systematic beta results. These out-of-sample results are even more favorable for hedge funds because the hedge fund alpha is positive for every year except 1998. Even in 2008, when the overall equally weighted hedge fund return was negative 16.08%, the alpha is estimated to be positive 6.65%. This consistent high alpha is quite remarkable, given the variety of market conditions over the period: the 1990s' bubbles, the 2000–02 bear market, the2003–07 bull market, and the recent global financial crisis. The annual results confirm that, over the period studied, hedge funds have added a significant amount of alpha to stock, bond, and cash portfolios. The results also show that hedge funds exhibit tactical asset-allocation skills, especially by reducing beta exposures in bear markets. For example, the estimated stock beta exposure was lowest during the 2000–02 bear market. Hedge funds did not avoid beta exposure in 2008 and did not fully participate in the 2009 market, but nevertheless, they maintained positive alpha throughout the financial crisis of 2008–2009.

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The positive hedge fund aggregate alphas for the past 11 years sugges that hedge funds really do produce value. The substantial stock market beta associated with hedge funds also indicates that they are not really fully "absolute return." In fact, hedge funds vary with the market year by year.

Conclusion

In this study, we attempted to measure the sources of hedge fund returns. In particular we estimated what portion of the returns came from alpha, beta, and costs. The portion that came from alpha is most relevant, because investors would have difficulty achieving this alpha with stock, bond, and cash portfolios.

We included both live and dead funds in order to correct for survivorship bias. We exclude backfill data that managers submitted when they joined the database. Our results indicate that both survivorship bias and backfill bias are potentially serious problems. After both biases were removed, the larger funds outperformed smaller funds. The larger funds also had commensurately higher risk, however.

We estimated a pre-fee return from the equally weighted index of hedge funds to be 11.42%, which consisted of fees of 3.78%, an alpha of 3.01%, and returns from the betas of 4.62%. The alpha estimate was statistically significant at the 5% level. All nine subcategories of funds had positive alphas, and three of the subcategories had statistically significant alphas.

Not only was the alpha during the entire period studied significantly positive, but the hedge fund alphas stayed positive from year to year. The alpha was positive for all years except 1998. This indicates that the average hedge fund manager added value in both bear and bull markets. Further examination of the stock beta estimates showed that hedge fund managers on average underweighted equities in their portfolios during the technology bubble collapse. But hedge funds did not substantially reduce their beta in 2008, earning a negative return for the year. Nevertheless, hedge funds continued to produce positive alphas in both 2008 and 2009, continuing an 11-year unbroken string of positive alphas.

The results presented here are only a reflection of historical returns. Hedge funds are relatively new and dynamic investment options. We expect them to continue to evolve. A significant amount of money has flowed into hedge funds in the past several years. Therefore, we cannot be assured that the high past alphas we have measure are good predictors of future alphas in the hedge fund industry. M

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Morningstar Product Spotlight: Morningstar Direct℠

Introducing the new frontier: an alternative to the mean-variance optimizer.

by
Cindy Sin-Yi Tsai, CFA, CAIA
Senior Research Analyst

Asset allocation is the process of dividing investments among different kinds of asset categories based on an investor's specific investment objective, risk tolerance, and other constraints. It is one of the most important decisions an investor makes, no matter whether one believes in the conventional wisdom (from Brinson, Hood, and Beebower 1986[1]) or the newer research (such as Xiong et al. 2010[2]). Asset allocation is commonly determined using a software tool that optimizes risk and return trade-offs, and the Markowitz mean-variance optimization has been the standard for creating efficient asset-allocation strategies for more than half a century.

But MVO is not without its shortcomings. The MVO process requires forming asset-class assumptions (namely expected return, standard deviation, and correlation coefficients), which ultimately result in an efficient frontier of the best combinations of those asset classes to achieve the highest portfolio return for each level of risk. Two limitations of the MVO are associated with making asset-class assumptions (normal distribution and linear correlation assumptions) and two more with the optimization methodology itself. Morningstar Direct℠ now offers solutions to overcome some of these limitations.

The Limitations of Assuming a Normal Distribution

In an MVO, we use the normal distribution when forming asset-class assumptions. What is nice about the normal distribution is that it is very intuitive: Roughly two thirds of the time, returns are within one standard deviation away from the mean (average) return; more than 95% of the time, returns are within two standard deviations; and returns are within three standard deviations of the mean about 99.7% of the time. This means, according to normal distribution mathematics, there is approximately a 0.13% probability of an extremely large gain or loss (100% less 99.74% divided by 2).

The normal distribution is flawed, however, in that it is a bell-shaped curve that assumes symmetry (a loss is just as probable as a gain) and thin tails (trivial probabilities assigned to three-sigma events, those greater than three standard deviations away from the mean).

Because investors are more averse to negative surprises resulting from underestimating extreme losses, as opposed to positive surprises of unexpected large gains, we focus on the normal distribution's ability to model three-sigma losses. When we examine the actual historical monthly data of the S&P 500 Index going back to 1926, we observe that three-sigma losses happened in 10 of the past 1,026 months (over 85 years). This is almost a 1% frequency, which is almost 8 times what a normal distribution predicts. This means that a normal distribution fails to model the "tail risk" in the real world.

As indicated in Xiong and Idzorek (2011)[3], many asset classes empirically exhibit return distributions that are skewed to the left of the mean (negative skewness) and that have fatter tails (excess kurtosis) than a normal distribution. The authors demonstrate that accounting for skewness and excess kurtosis in return modeling and optimization makes a significant impact on the asset-allocation decision, especially in terms of performance during a crisis, such as the one that occurred in 2008.

Another limitation of the traditional MVO is that it assumes correlation coefficients among asset-class returns are linear—in other words,

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1 Brinson, Gary P., L. Randolph Hood, and Gilbert L. Beebower. 1986. "Determinants of Portfolio Performance." *Financial Analysts Journal*, (July-August):39–44.
2 Xiong, James X., Roger G. Ibbotson, Thomas M. Idzorek, and Peng Chen. 2010. "The Equal Importance of Asset Allocation and Active Management." *Financial Analysts Journal*, (March-April):22–30.
3 Xiong, James X. and Thomas M. Idzorek. 2011. "The Impact of Skewness and Fat Tails on the Asset Allocation Decision." *Financial Analysts Journal*, (March-April):23–35.

the same correlation coefficient applies in both up and down markets. This is unrealistic, as it is commonly observed that during crisis, markets tend to go down together. For the purposes of this article, we will not demonstrate how to address this issue in Morningstar Direct, although there are some potential solutions.

Modeling Asset Classes in Practice

To form asset-class assumptions, we selected index proxies[4] to represent 12 asset classes. These include traditional investments such as equities (U.S. large capitalization, U.S. small capitalization, international developed, international emerging), debt (U.S. investment-grade, U.S. high-yield, and international), and cash. We also incorporated alternative investments such as U.S. real estate, international real estate, commodities, and hedge fund arbitrage. We added arbitrage for the potential diversification benefits of its "alternative beta."

Table 1 shows key characteristics of historical return distributions in the common time period among these asset classes. Most asset classes have negative skewness and excess kurtosis, but U.S. high-yield bonds, U.S. real estate, and hedge fund arbitrage have much larger figures than others. Xiong and Idzorek (2011) found that variety in skewness and kurtosis among assets makes a significant difference in allocation when an optimizer penalizes downside risk instead of standard deviation. To demonstrate, we generated two sets of asset-class return assumptions, one using normal and one using fat-tailed and skewed distribution models.

We modeled asset-class return assumptions using the log-normal distribution, the natural logarithmic version of the normal distribution that reflects the (unleveraged) real-world experience where investors cannot lose more than 100% of their investment but can make more than 100% on the upside. Morningstar Direct allows for several methods to derive log-normal return assumptions. We selected the building blocks method, outlined in the *Morningstar Ibbotson Stocks, Bonds, Bills, and Inflation*℠ yearbook. In real life, though, the building blocks method serves only as a starting point. Investors should incorporate their own forecasts into return assumptions. To model standard deviations and correlation coefficients, we used historical data covering the common period of the asset-class index proxies (February 1994 to June 2011) for simplicity, even though long-term historical data is preferable.

Histogram graphics in Morningstar Direct allow users to see how their distribution model choice fits historical returns, which can in turn help users further fine-tune assumptions. A histogram is a bar graph in which returns are sorted into bins, and the height of the bin illustrates how often that particular range of returns occurs. Figure 1 shows that the standard log-normal distribution fails to model historical returns of two asset classes: U.S. large-capitalization stocks and U.S. real estate.

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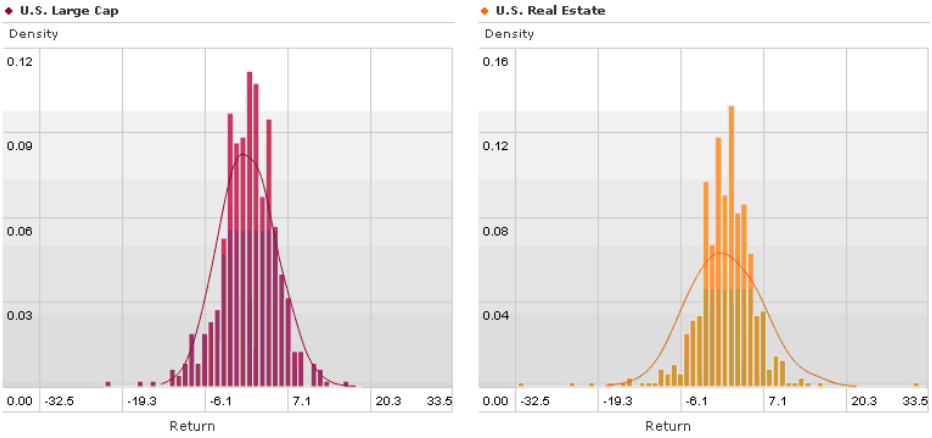
Table 1: Historical Return Distribution Characteristics—February 1994 to June 2011

Asset Class	Return %	Std Dev	Skewness	Excess Kurtosis
U.S. Large Cap	7.83	15.56	–0.72	1.03
U.S. Small Cap	7.89	20.00	–0.56	1.08
International Developed	5.19	16.63	–0.68	1.70
International Emerging	6.79	24.31	–0.76	1.98
U.S. Inv Grade	6.18	3.79	–0.26	0.96
U.S. High Yield	7.49	9.32	–1.16	9.33
International Bond	6.49	8.59	0.17	0.58
U.S. Real Estate	10.58	20.54	–0.87	8.67
International Real Estate	6.89	20.12	–0.50	2.61
Commodity	6.99	15.68	–0.53	2.29
HF Arbitrage	8.17	3.54	–3.50	22.59
Cash	3.34	0.58	–0.35	–1.43

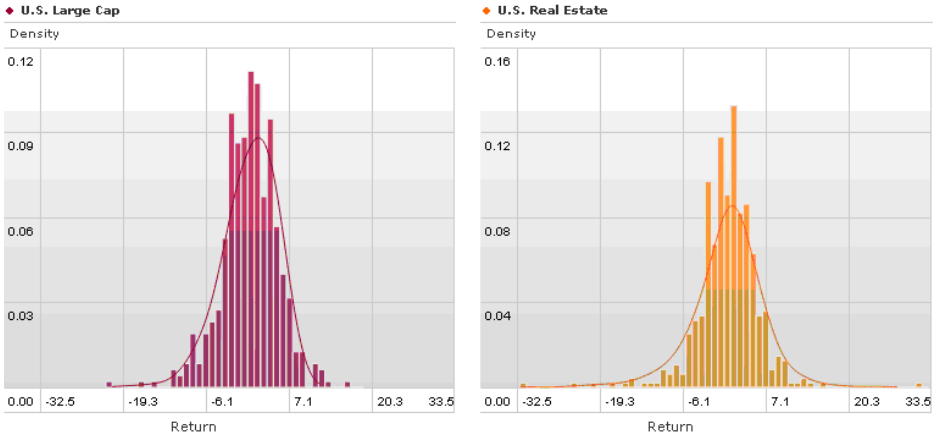
Figure 1: Curves of Log-Normal Distributions and Histograms of Historical Returns



4 IA SBBI S&P 500, Russell 2000, MSCI EAFE, MSCI EM, Barclays US Agg Bond, Barclays US Corp High Yield, Citi WGBI NonUSD, FTSE NAREIT All Equity REITs, FTSE EPRA/NAREIT Dev Ex US, DJ UBS Commodity, Morningstar MSCI Relative Value, Citi Treasury Bill 3 Mon.

In both instances the log-normal distribution curves do not have fat-enough tails or negative-enough tilt to cover the largest losses, represented by the three left-most bars. In other words, this tail risk is completely ignored. This is not surprising for U.S. real estate, given its historical skewness and excess kurtosis. (See Table 1.) But the log-normal model is just as poor in representing a traditional asset class such as U.S. large-capitalization stocks, which anchor the portfolios of most U.S. investors.

Figure 2: Curves of Johnson Distributions and Histograms of Historical Returns



To model the second set of assumptions for the same asset classes using a fat-tailed distribution, we chose the Johnson distribution, one of several methods offered by Morningstar Direct. The reason is twofold: first, to offer a different viewpoint than Xiong and Idzorek (2011), who use the Truncated Lévy-Flight model, and second, the Johnson distribution is more intuitive than the TLF model. (The Johnson model's primary limitation, however, is that it is less useful for modeling daily or weekly returns). This is because, in order to model tail risk, the Johnson method requires only two additional inputs—skewness and kurtosis—beyond the traditional expected return, standard deviation, and correlation coefficient inputs required for MVO. These two measures can be easily obtained in Morningstar Direct or even in Microsoft® Excel®. Furthermore, skewness and kurtosis are easily understood when illustrated visually. When making skewness and kurtosis assumptions, one can start with historical skewness and excess kurtosis (the kurtosis above and beyond a normal distribution's kurtosis, which is 3) as a baseline for further refinement. Modeling each asset class' tail risk individually is preferable, as equities and alternative assets have more tail risk than plain-vanilla fixed income (at least historically).

Figure 2 shows how much better the Johnson distribution models historical U.S. large-capitalization equity and U.S. real estate data relative to the log-normal distribution in Figure 1, when using historical skewness and excess kurtosis from February 1994 to June 2011 as parameters. The bars on the left side of histograms, those that represent the largest losses, are better covered with the Johnson distribution curve. Moreover, both the placement of and the height of the curve's peak fall better in line with the tallest bar. This dramatic modeling improvement with very little extra effort makes a compelling argument to incorporate tail risk into the asset-allocation process. Therefore, we ran two optimizations, one with assumptions generated with the log-normal distribution and another with the assumptions based on the Johnson distribution.

Optimization

Besides its faulty assumption process, traditional MVO's optimization process also poses problems. One is that it uses arithmetic mean for expected return. Morningstar Direct offers the additional choice of geometric mean, which is the time-weighted rate of return over multiple periods. Optimizing on arithmetic mean assumes a single-period investment horizon and maximizes a portfolio's return over this period, based on the premise that one revisits asset allocation at every period. Multiperiod optimization, which has the objective of maximizing long-term wealth, requires the use of geometric mean.

A second limitation of the MVO process is that it uses standard deviation as the measure of risk. Standard deviation measures total risk on both the upside and downside, while many investors are more concerned with downside risk. Morningstar Direct offers several measures of downside risk, but one that is particularly good at capturing tail risk is the conditional-value-at-risk, or CVaR for short. The easiest way to understand CVaR is to understand its cousin VaR and with an example. When an asset's fifth percentile VaR is 30%, there is a 5% chance of losing at least 30% of its value. The CVaR, on the other hand, is the probability-weighted average loss of all possible losses equal to or exceeding 30%. The CVaR, essentially, captures a distribution's entire left tail after the 30% loss.

Xiong and Idzorek (2011) demonstrate that there is no need to optimize using CVaR if one models asset-class assumptions using a normal distribution, because the allocations will be the same as that of a conventional MVO. Doing so just adds extra complexity. If one believes that certain asset classes exhibit negative skewness and fat tails, however, and if one incorporates these beliefs into asset-class assumptions (using the Johnson distribution, for example), optimizing with a downside risk measure such as the CVaR makes an impact on asset allocation. Therefore, in order to demonstrate the impact of tail-risk modeling, we paired up log-normal

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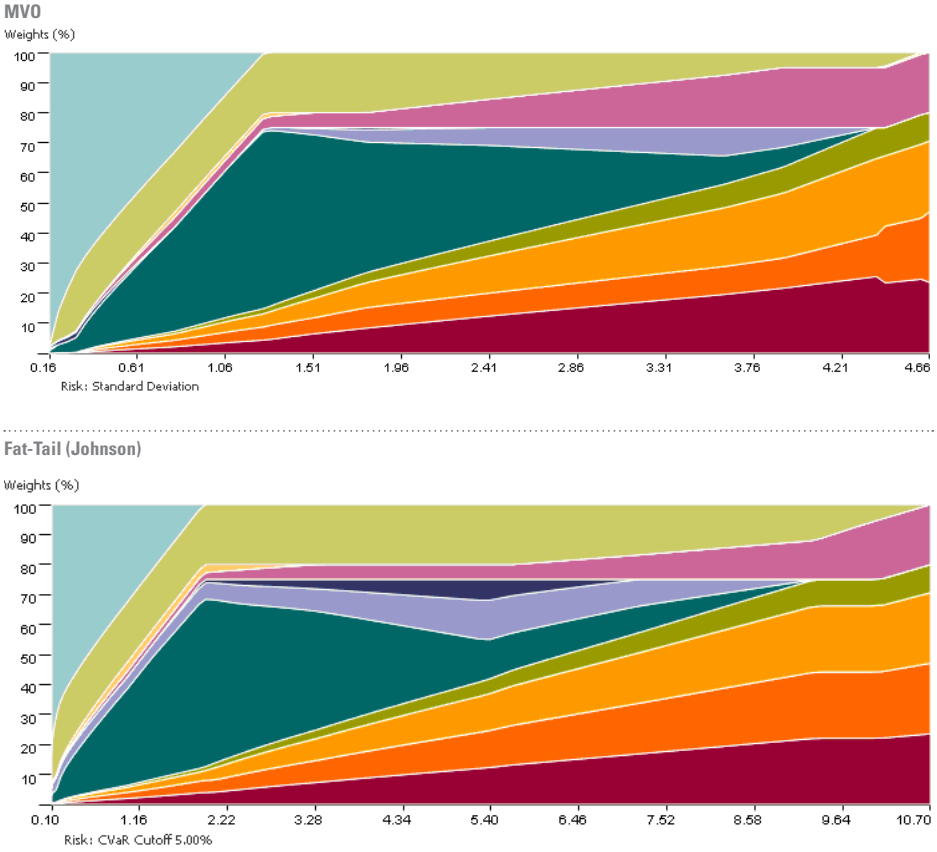
assumptions with the conventional MVO and, separately, the Johnson assumptions with a M-CVaR (mean-CVaR) optimizer.

Because optimization is part art and part science, constraints help to ensure the optimizer produces intuitive results. We set three types of constraints for the purposes of this study. The first is a maximum allocation to each individual asset class. For example, for this study, we did not want allocations to international emerging stocks and U.S. high-yield bonds to exceed 30% individually, as these asset classes are particularly risky. We also didn't want international bond, U.S. real estate, international real estate, commodities, and hedge fund arbitrage to exceed 20% each. Next, we wanted to limit the combinations of allocations to alternative investments to 25%. Finally, we didn't want the riskier asset classes' allocations to exceed those of the less-risky assets, so we constrained the weighting of U.S. small-cap stocks and international developed bonds to be less than that of U.S. large-capitalization stocks. Similarly, we limited U.S. high-yield bonds or international bonds to the weightings of U.S. investment-grade bonds, and the weighting of international emerging-markets stocks to 40% of the amount allocated to international developed stocks. These constraints apply to both MVO and M-CVaR optimizer.

When running an optimization, an investor can identify optimal portfolios based on the investor's expected return objective or risk tolerance. For example, Xiong and Idzorek (2011) took this approach, comparing a mean-variance optimized portfolio to a mean-CVaR optimized portfolio of the same mean, or expected return. For this article, we followed a similar process, but we also specified a particular broad asset class mix, of 45% equity, 30% fixed income, and 25% alternative investments. This approach allows us to more easily identify which subasset classes are favored in M-CVaR optimization within each broad asset class.

Figure 3: Comparison of Allocation Spectrums Between MVO and Fat-Tail (Johnson) Optimization



The Results

The allocation area graphs in Figure 3 display the allocation results of our MVO and Johnson M-CVaR optimizations across the entire risk/return spectrum, from lowest risk on the left to highest risk on the right. The MVO allocations were generated with a normal distribution assumption, and the Johnson M-CVaR optimization used the Johnson (fat-tailed) distribution assumptions. In Morningstar Direct, when users move the cursor over the allocation area graphs, allocation percentages as well as risk and return statistics appear for that particular portfolio. We glided the cursor until we found the 45/30/25 mix in each graph, the details of which are displayed in Table 2 (next page).

All else being equal, investors ought to favor asset classes with positive skewness and small (or even negative) excess kurtosis, and this bias should manifest itself in the difference between the Johnson M-CVaR optimizer results and the MVO results in Table 2. The Johnson M-CVaR optimizer ought to recommend less allocation to those asset classes with large negative skewness and excess kurtosis, characteristics that are ignored in the MVO. Per the historical skewness and kurtosis statistics in Table 1, we would expect international bonds to be favored by the Johnson M-CVaR optimizer, while U.S. high-yield bonds, U.S. real estate, and hedge fund arbitrage should be relatively unattractive.

The results are generally consistent with what we intuitively expect. Looking at the last column of Table 2, we see that, within the four equity subasset classes (the first four rows), the difference in allocations between the traditional MVO and Johnson M-CVaR optimization is generally unremarkable, although

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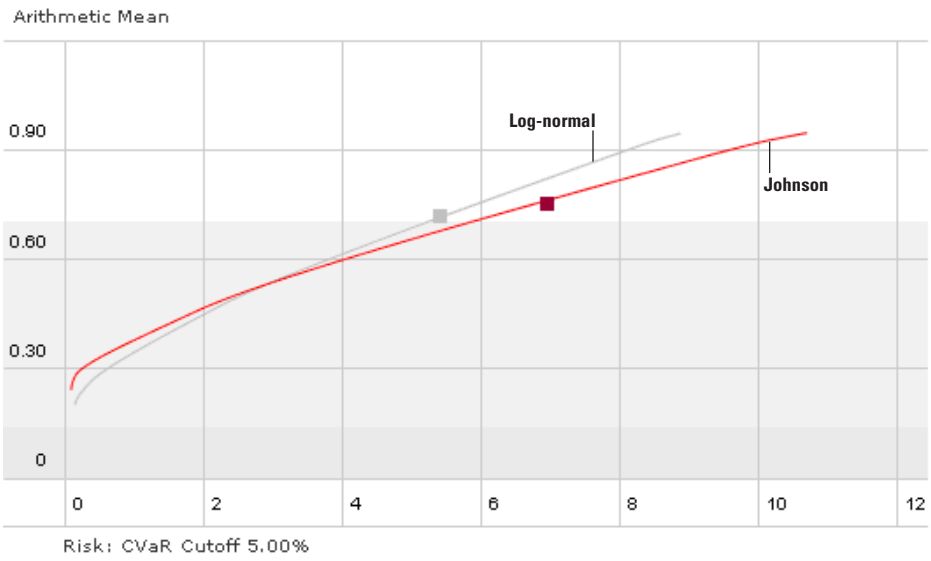
Table 2: Allocations Comparison Between Two 45% Equity/30% Fixed Income/25% Alternatives Portfolios Generated With MVO and Johnson (Fat-Tail) Optimization

Asset Class	MVO %	Johnson (Fat Tail) %	Difference %
U.S. Large Cap	15.3	14.1	–1.2
U.S. Small Cap	8.3	11.5	+3.2
International Developed	15.3	14.1	–1.2
International Emerging	6.1	5.6	–0.5
U.S. Inv Grade	22.7	9.9	–12.8
U.S. High Yield	7.3	9.9	+2.6
International Bond	0.0	9.9	+9.9
U.S. Real Estate	12.7	16.0	+3.3
International Real Estate	0.0	0.0	0.0
Commodity	0.0	1.7	+1.7
HF Arbitrage	12.3	7.3	–5.0
Cash	0.0	0.0	0.0
Total	**100.0**	**100.0**	**0.0**

Figure 4: Comparison of Efficient Frontiers With Log-Normal to Fat-Tailed (Johnson) Distribution



small-capitalization stocks are slightly favored by the Johnson M-CVaR optimizer for having a smaller negative skewness. In fixed income, however, we see a significant difference in allocation. Intuitively, international bonds were ignored in the MVO portfolio, but the M-CVaR optimizer calls for the maximum 9.9% allocation because of the asset class' positive skewness and low excess kurtosis. (The Johnson M-CVaR optimizer also increased the allocation to U.S. high-yield bonds, which may appear counterintuitive because of their skewness and kurtosis characteristics. The lower correlation benefit of U.S. high-yield bonds to international bonds trumps these characteristics, however). Another area of significant impact is the alternative investments bucket, where the allocation to hedge fund arbitrage is significantly reduced, as we would expect because of this asset's large negative skewness and outsized excess kurtosis. The commodities bucket, however, gets a greater, albeit small, allocation in the Johnson M-CVaR process and is ignored in MVO. U.S. real estate received a larger allocation as well. Overall, we find the results to be consistent with the conclusion in Xiong and Idzorek (2011)—that taking skewness and kurtosis into consideration makes a significant impact in asset allocation.

Figure 4 shows the two efficient frontiers related to the MVO and M-CVaR allocation area graphs in Figure 3. The two dots on Figure 4 represent the two 45/30/25 portfolios discussed in the previous paragraph. We see that, when incorporating non-normal assumptions (of skewness and kurtosis) into the Johnson M-CVaR optimization, our efficient frontier falls to the southeast of the MVO efficient frontier for most of the risk spectrum. This means that our MVO optimization underestimates risk and that the Johnson M-CVaR efficient frontier is more likely to model reality.

To Optimize, or Not to Optimize

Because our allocation experiment produced relatively intuitive results, one might think that it is unnecessary to run an optimization. One might simply obtain the historical skewness and excess kurtosis figures for each asset class and manually reduce the allocations to the unattractive asset classes. Whether or not one chooses to employ an optimizer, the argument for incorporating tail risk into the asset-allocation decision process is clear. Optimization is but one tool to aid in that process, and this easy-to-use tool is now available in Morningstar Direct.

Industry Trends: Alternative Mutual Funds

There's no stopping managed futures funds.

by
Nadia Papagiannis, CFA
Alternative Investments Strategist

Managed futures mutual funds are on a tear. Seven of the 21 funds in the category have launched in 2011, and inflows into the category for the year to date (through September) have topped $3 billion, even though the average fund lost 2.2% over the same period. The most recent launches include Ramius Trading Strategies Managed Futures **RTSRX**, Mosaic Managed Futures Strategy **MMFAX** (both funds of funds), and Aspen Managed Futures Strategy **MFBPX**. The fact that launches and inflows haven't slowed is surprising, considering the regulatory environment that these funds are facing.

About a year ago, the Commodity Futures Trading Commission, or CFTC, which regulates futures trading in the United States, issued a proposal to amend Rule 4.5, which currently grants SEC-registered investment companies an exemption from registering as commodity pool operators, or CPOs (and an exemption from all of the disclosures and CFTC oversight required by status). This exemption, created in 2003, paved the way for mutual funds to trade futures contracts. Why shouldn't mutual funds be able to trade futures contracts, after all? Futures contracts are just another, often more efficient, means for funds to gain exposure to or to hedge various asset classes.

But because U.S. tax laws haven't been written to accommodate futures, particularly commodity futures, held by mutual funds, the IRS has to grant special permission, in the form of private-letter rulings, to mutual funds wishing to trade commodities. These private-letter rulings allow commodity futures trading through swaps or controlled foreign corporations, or CFCs. Swaps allow for an indirect and often more expensive means of gaining exposure to futures contracts, while the CFC can actually trade futures contracts. (The disadvantage is that the entire CFC is considered one security for tax purposes, and therefore mutual funds using CFCs do not receive the 60% long-term, 40% short-term capital gains tax treatment typically afforded to futures contracts.) The SEC does not require this single security, or CFC, to report its underlying activity, and that's where the real problems begin.

When certain managed futures mutual funds began packaging multiple commodity trading advisors, or CTAs, into this CFC structure (creating funds of managed futures funds or separate accounts), the National Futures Association (the self-regulatory organization of the CFTC) took notice. When the CFC structure is used in this manner, it presents several problems: It masks the identity of the underlying managers, what they are trading, how much leverage they are taking on, and most importantly, how much they are charging. According to vague disclosures in some of these funds' Statements of Additional Information, the underlying managers charge performance fees ranging from 15% to 30% on top of management fees of 1% or 2%, neither of which are included in the expense ratio. Furthermore, mutual funds are not allowed to charge performance fees. Based on NFA's petition, the CFTC was ready to do away with managed futures funds completely (even the low-cost, fully transparent ones), but after numerous petitions by industry participants to work with the SEC in harmonizing their regulation efforts, the CFTC has yet to make a decision on the fate of managed futures mutual funds.

The IRS, however, has taken a stance. It has decided to stop condoning the CFC structure through private-letter rulings, citing the uncertainty of the CFTC's ruling (per a letter from the Investment Company Institute dated Aug. 18, 2011). Mutual fund sponsors say that the IRS' impetus was simply to reduce paperwork and instead issue a public ruling that all funds can follow. But for those firms and funds that do not currently hold a private-letter ruling, the future is largely uncertain.

Fund Reports

Alternative Strategies Mutual Fund

by **Mallory Horejs**

Advisor
Ascentia Capital Partners

Advisor Location
Reno, Nevada

Assets Under Management
$28.0 million (fund)

Inception Date
March 3, 2008

Investment Type
Mutual fund

Morningstar Category
Multialternative

Management
This fund is run by a three-man committee chaired by Steve McCarty, one of Ascentia Capital's founders and managing partners. McCarty is primarily responsible for compliance as well as manager sourcing and selection. James Calhoun manages the fund's day-to-day operations with an emphasis on technical analysis and oversight. He shares portfolio management, trading, and subadvisor oversight and communication responsibilities with James O'Shaughnessy Houssels, who focuses more on the portfolio's fundamental construction. Ascentia Capital Partners LLC launched its first long/short exchange-traded fund strategy in separately managed accounts in 2004.

Strategy

This concentrated multimanager fund allocates to a diversified mix of institutional alternative managers with the intent of providing both long-term capital growth and lower correlation to the broad market index (its correlation since inception with the S&P 500 using monthly data through August is 0.73). Management invests in liquid, hedged strategies such as long/short equity, market neutral, international/emerging equity, global macro, and convertible arbitrage, and plans to make new allocations to both an event-driven and a fixed-income arbitrage subadvisor before year-end. Although the portfolio currently includes two international/emerging equity subadvisors, management typically invests in one manager per alternative strategy, with each allocation ranging from 10% to 30%. As of September 2011, the fund's largest strategy allocation was to long/short equity (23%), which unlike the rest of the portfolio, is managed internally according to Ascentia's long/short ETF separate-account strategy. Other sizable positions include market-neutral manager Research Affiliates (18%) and global macro manager Armored Wolf (17%). The fund's beta to the S&P 500 since inception is 0.29 (using monthly data through August 2011), and net equity exposure has ranged widely from 20% to 80%.

Process

When sourcing managers, McCarty and his team consider only hedge fund managers who are registered with the SEC and able to offer their strategies in fully transparent, separately managed accounts. Quantitatively, they seek managers with attractive risk-adjusted returns relative to their peers, low correlation to broad market indexes, and performance consistency. Qualitative selection factors include manager depth and tenure, bear-market performance, as well as investment process sustainability. After selecting a roster of subadvisors, McCarty and his team allocate to the strategies. They begin with an equal-weighed approach, which is adjusted through a four-step capital-allocation process that includes mean-variance optimization, factor analysis, as well as internal and external performance expectations. Mean-variance optimization serves to increase the diversification of the portfolio and lower its correlation to the market. Factor analysis helps to determine the economic drivers of each strategy. The internal performance review looks at the relative performance of the different strategies. And finally, the external performance review involves individual discussions with each manager. The model currently recommends overweighting global macro, convertible arbitrage, and long/short equity, equal-weighting international/emerging equity, and underweighting market-neutral. Allocations are adjusted on a monthly basis according to a six- to 18-month outlook.

Risk Management

The fund's maximum monthly loss is limited to the net cost of the call and put spreads, if the purchased options expire worthless at cycle-end. Management sets a predefined level of risk at the start of every options cycle—approximately 1% each month, or 12% a year. (The cost of options rises and falls with volatility.) Because this strategy is a long volatility strategy, which generates gains based upon price movement of the S&P 500 in either direction, the worst environment for this strategy is when volatility remains flat for an extended period of time.

Release date 09-30-2011

Alternative Strategies Mutual Fund I (USD)

Overall Morningstar Rtg™	Standard Index	Category Index	Morningstar Cat
★	S&P 500 TR	BarCap US Agg Bond TR USD	US OE Multialternative
85 US OE Multialternative			

Performance 09-30-2011

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2009	-6.27	6.86	6.09	-0.07	6.19
2010	-0.70	-5.86	6.40	3.16	2.60
2011	1.32	-2.98	-15.62	—	-17.05

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	-14.43	-4.25	—	—	-4.44
Std 09-30-2011	-14.43	—	—	—	-4.44
Total Return	-14.43	-4.25	—	—	-4.44
+/- Std Index	-15.58	-5.48	—	—	—
+/- Cat Index	-19.70	-12.22	—	—	—
% Rank Cat	98	95	—	—	
No. in Cat	165	85	—	—	
7-day Yield	—				

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 866-506-7390.

Fees and Expenses

Sales Charges

Front-End Load %	**NA**
Deferred Load %	**NA**

Fund Expenses

Management Fees %	1.95
12b1 Expense %	NA
Gross Expense Ratio %	**3.35**

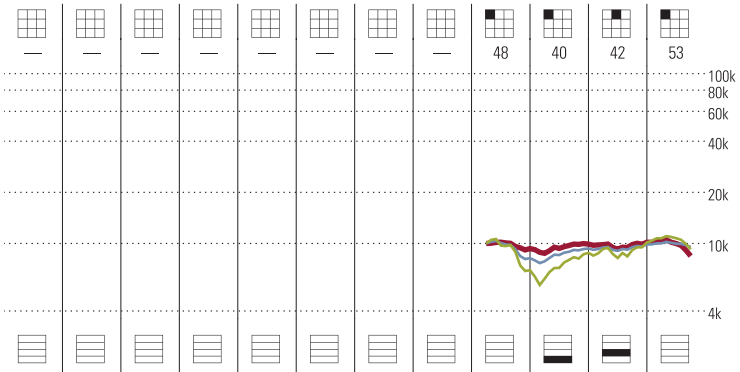
Risk and Return Profile

	3 Yr 85 funds	5 Yr *30 funds*	10 Yr *3 funds*
Morningstar Rating™	1★	—	—
Morningstar Risk	Avg	—	—
Morningstar Return	Low	—	—

	3 Yr	5 Yr	10 Yr
Standard Deviation	9.62	—	—
Mean	-4.25	—	—
Sharpe Ratio	-0.42	—	—

MPT Statistics	Standard Index	Best Fit Index MSCI EAFE Growth NR USD
Alpha	-5.15	-4.73
Beta	0.34	0.33
R-Squared	55.48	66.67

12-Month Yield	—
30-day SEC Yield	—
Potential Cap Gains Exp	-22.26%



Investment Style
Equity
Stock %

Growth of $10,000
- Alternative Strategies Mutual Fund I 8,430
- Category Average 9,507
- Standard Index 9,245

Performance Quartile (within category)

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	09-11	History
—	—	—	—	—	—	—	—	48	40	42	53	
—	—	—	—	—	—	—	—	12.13	12.88	12.90	10.70	NAV/Price
—	—	—	—	—	—	—	—	—	6.19	2.60	-17.05	Total Return %
—	—	—	—	—	—	—	—	—	-20.27	-12.46	-8.38	+/- Standard Index
—	—	—	—	—	—	—	—	—	0.26	-3.94	-23.70	+/- Category Index
—	—	—	—	—	—	—	—	—	80	74	—	% Rank Cat
—	—	—	—	—	—	—	—	—	105	140	176	No. of Funds in Cat

Portfolio Analysis 03-31-2011

Asset Allocation %	Net %	Long %	Short %
Cash	41.53	41.54	0.01
US Stocks	5.92	35.63	29.71
Non-US Stocks	33.15	34.26	1.10
Bonds	4.99	5.69	0.70
Other/Not Clsfd	14.41	14.41	0.00
Total	100.00	131.53	31.53

Equity Style

Value	Blend	Growth
■		

Large / Mid / Small

Portfolio Statistics	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	14.2	1.13	—
P/C Ratio TTM	7.0	0.87	—
P/B Ratio TTM	1.7	0.93	—
Geo Avg Mkt Cap $mil	25135	0.56	—

Fixed-Income Style

Ltd	Mod	Ext

High / Mod / Low

Avg Eff Duration	—
Avg Eff Maturity	—
Avg Credit Quality	—
Avg Wtd Coupon	3.11
Avg Wtd Price	119.07

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR/NA	—

Regional Exposure	Stock %	Rel Std Index
Americas	65.4	0.66
Greater Europe	15.3	94.58
Greater Asia	19.3	—

Share Chg since 12-2010	Share Amount	Holdings: 3,939 Total Stocks , 35 Total Fixed-Income, 224% Turnover Ratio	% Net Assets
⊖	2 mil	Invesco Short Term Inv Liq Assets	8.58
⊕	5,400	SPDR S&P 500	-2.91
⊖	624,354	US Treasury Note 1.25%	2.71
⊖	11,600	Industrial Select Sector SPDR	1.78
⊕	350,493	US Treasury Bond 2.375%	1.60
⊖	6,500	Market Vectors Gold Miners ETF	1.59
⊕	5,300	iShares Dow Jones US Oil Equipment	1.46
⊕	23,535	iShares MSCI Taiwan Index	1.42
⊕	10,300	iShares MSCI Canada Index	1.41
✲	4,100	iShares Russell 2000 Index	-1.40
✲	12,900	Technology Select Sector SPDR	1.37
⊕	21,087	Bank of America Corp	1.14
	250,000	St Andrew Goldfields	1.11
⊖	19,900	iShares MSCI Singapore Index	1.10
	150,000	Cephalon Cv 2%	1.02

Sector Weightings	Stocks %	Rel Std Index
Cyclical	**38.9**	**1.45**
Basic Materials	13.2	4.31
Consumer Cyclical	5.0	0.53
Financial Services	20.3	1.61
Real Estate	0.5	0.26
Sensitive	**42.2**	**0.94**
Communication Services	7.7	1.72
Energy	14.5	1.26
Industrials	10.5	0.91
Technology	9.5	0.54
Defensive	**18.9**	**0.67**
Consumer Defensive	8.8	0.72
Healthcare	6.2	0.52
Utilities	3.8	0.98

Operations

Family:	Ascentia Capital Partners	Ticker:	AASFX	Incept:	03-03-2008
Manager:	Multiple	Minimum Initial Purchase:	$2,500	Type:	MF
Tenure:	3.6 Years	Min Auto Investment Plan:	$2,500	Total Assets:	$28.07 mil
Objective:	Growth	Minimum IRA Purchase:	$500		
Base Currency:	USD	Purchase Constraints:	—		

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MORNINGSTAR®

Fund Reports

Arbitrage Event Driven

by **Mallory Horejs**

Advisor
Water Island Capital LLC

Advisor Location
New York, New York

Assets Under Management
$20.5 million (fund)

Inception Date
Oct. 1, 2010

Investment Type
Mutual fund

Morningstar Category
Market-neutral

Management
President and CIO John Orrico founded Water Island Capital in 2000 and launched the firm's flagship equity mutual fund product, the Arbitrage Fund **ARBFX**, shortly afterward. Co-portfolio managers Todd Munn and Roger Foltynowicz joined the firm in 2003, and Gregg Loprete was brought on in 2009 to manage the firm's move into convertible arbitrage and fixed-income investing. These four manage the new event-driven fund using a team approach, with Loprete managing credit and Orrico, Munn, and Foltynowicz working on the equities.

Strategy

This event-driven market-neutral fund invests in the equity and debt securities of companies involved in all types of corporate events such as bankruptcies, mergers and acquisitions, or spin-offs. As of June 30, the firm's flagship equity-based merger arbitrage strategy formed this portfolio's core (48%), with the remaining assets divided among fixed-income-based merger arbitrage (5%), equity special situations (19%), and fixed-income special situations (19%). Although management expects credit strategies to eventually make up more than half of the portfolio, the allocation process remains very flexible. In addition to incorporating credit strategies, Arbitrage Event Driven differentiates itself from the flagship strategy (Arbitrage Fund) by employing a more concentrated approach, investing in roughly 40 deals or events (versus 65 to 70). Management also includes more-speculative, higher-volatility special situations strategies in this new fund, and it targets a standard deviation of between 6% and 8% annualized over three to five years. The fund has exhibited a beta since inception (using weekly data through Oct. 1) of 0.22, slightly higher than both the flagship offering and most funds in the market-neutral category. While the portfolio remains well-diversified across market cap, this offering's small asset base does allow it to invest in deals that are too small for the Arbitrage Fund from time to time. Management does not utilize leverage.

Process

When constructing the investment portfolio, management focuses primarily on selecting a corporate event and secondarily on employing the best investment strategy. Management first reviews news sources, corporate press releases, and public filings to source investment opportunities. Next, the team conducts fundamental, bottom-up research on each of the deals, assessing the subject firm's business model, management team, discounted cash flows, and estimated fair value. Management also analyzes the surrounding macroeconomic and industry environment, looking specifically for a catalyst necessary to cause a price movement. Management then channels this fundamental data into an optimization tool that identifies the most attractive deals and ranks them by their risk/return expectations. With the deal lineup in place, management then determines the best way to trade each opportunity, selecting the appropriate securities across each subject firm's capital structure, as well as establishing buy and sell targets. In some instances, the fund will invest in a blend of the target's equity and debt securities. All four portfolio managers meet weekly to discuss the portfolio, performance, and optimization-tool rankings (rerun weekly), and allocations are adjusted accordingly.

Risk Management

Management limits individual positions to 5% of the fund's total assets. Furthermore, aggregate sector exposure cannot exceed 20%. The team also uses various stress tests to analyze each security's upside/downside potential. Positions are set such that losses on any single holding cannot reduce the portfolio's net asset value more than 1%. In some cases, options will also be used to hedge against event risk. Depending on macroeconomic expectations, management may also hedge interest-rate and/or equity market exposure, typically using index futures and exchange-traded funds or options. Lastly, when investing in foreign events (18% of the portfolio is held outside the United States), management actively hedges currency to maintain a dollar-neutral stance.

Arbitrage Event Driven I (USD)

Standard Index	Category Index	Morningstar Cat
S&P 500 TR	BofAML USD LIBOR 3 Mon CM	US OE Market Neutral

Performance 09-30-2011

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2009	—	—	—	—	—
2010	—	—	—	—	—
2011	1.09	0.88	-4.29	—	-2.39

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	—	—	—	—	-0.68
Std 09-30-2011	—	—	—	—	-0.68
Total Return	—	—	—	—	-0.68
+/- Std Index	—	—	—	—	—
+/- Cat Index	—	—	—	—	—
% Rank Cat	—	—	—	—	
No. in Cat	—	—	—	—	
7-day Yield	—				

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 800-295-4485 or visit www.thearbfund.com.

Fees and Expenses

Sales Charges

Front-End Load %	**NA**
Deferred Load %	**NA**

Fund Expenses

Management Fees %	1.25
12b1 Expense %	NA
Gross Expense Ratio %	**4.73**

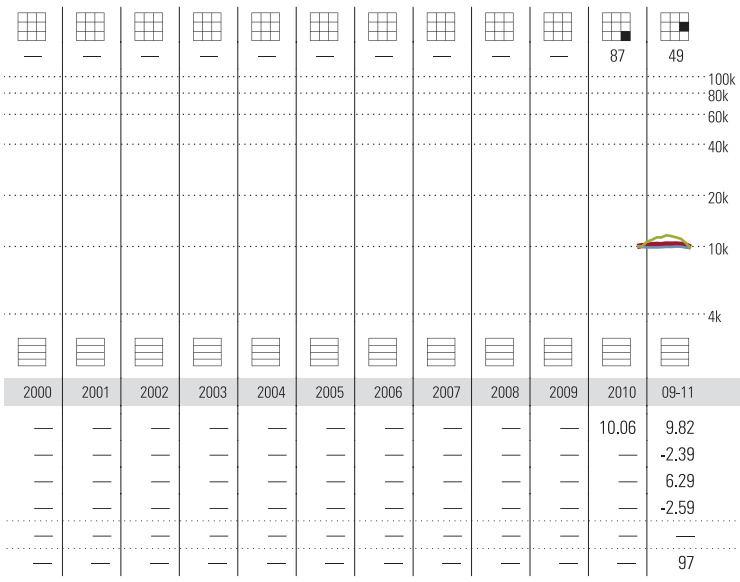
Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	—	—	—
Morningstar Rating™	—	—	—
Morningstar Risk	—	—	—
Morningstar Return	—	—	—

	3 Yr	5 Yr	10 Yr
Standard Deviation	—	—	—
Mean	—	—	—
Sharpe Ratio	—	—	—

MPT Statistics	Standard Index	Best Fit Index
Alpha	—	—
Beta	—	—
R-Squared	—	—

12-Month Yield	—
30-day SEC Yield	0.00%
Potential Cap Gains Exp	-3.76%



Investment Style
Equity
Stock %

Growth of $10,000
- Arbitrage Event Driven I 9,902
- Category Average 9,791
- Standard Index 9,744

Performance Quartile
(within category)

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	09-11	History
—	—	—	—	—	—	—	—	—	—	10.06	9.82	NAV/Price
—	—	—	—	—	—	—	—	—	—	—	-2.39	Total Return %
—	—	—	—	—	—	—	—	—	—	—	6.29	+/- Standard Index
—	—	—	—	—	—	—	—	—	—	—	-2.59	+/- Category Index
—	—	—	—	—	—	—	—	—	—	—	—	% Rank Cat
—	—	—	—	—	—	—	—	—	—	—	97	No. of Funds in Cat

Portfolio Analysis 05-31-2011

Asset Allocation % 02-28-2011	Net %	Long %	Short %
Cash	15.83	15.83	0.00
US Stocks	67.91	67.91	0.00
Non-US Stocks	30.06	30.06	0.00
Bonds	0.00	0.00	0.00
Other/Not Clsfd	-13.80	9.64	23.44
Total	100.00	123.44	23.44

Equity Style

Value	Blend	Growth	
			Large
		■	Mid
			Small

Portfolio Statistics	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	—	—	—
P/C Ratio TTM	14.4	1.79	2.15
P/B Ratio TTM	3.1	1.72	1.81
Geo Avg Mkt Cap $mil	3705	0.08	0.33

Fixed-Income Style

Ltd	Mod	Ext	
			High
			Med
			Low

Avg Eff Duration	—
Avg Eff Maturity	—
Avg Credit Quality	—
Avg Wtd Coupon	8.67
Avg Wtd Price	112.83

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR/NA	—

Regional Exposure	Stock %	Rel Std Index
Americas	89.0	0.89
Greater Europe	3.0	18.72
Greater Asia	8.0	—

Top Holdings 02-28-2011

Share Chg since 02-2011	Share Amount	Holdings: 51 Total Stocks , 0 Total Fixed-Income, 298% Turnover Ratio	% Net Assets
⊕	2,735	Bucyrus International, Inc. A	4.06
✲	31,545	Marshall & Ilsley Corp.	3.99
⊕	24,488	Hypercom Corporation	3.98
⊕	6,455	Alberto-Culver	3.91
✲	3,800	Emergency Medical Services Corp	3.91
✲	3,953	Jo-Ann Stores, Inc.	3.91
⊕	12,644	Del Monte Foods Company	3.90
✲	49,500	Western Financial Group Inc.	3.42
✲	99,353	Austereo Group Ltd	3.39
⊕	4,923	FirstEnergy Corp	3.07
✲	14,302	Western Coal Corp	2.90
✲	14,633	Zoran Corporation	2.67
✲	52,137	BC Iron Limited	2.65
✲	9,225	Consolidated Thompson Iron Mines L	2.65
✲	2,548	Massey Energy Co	2.63

Sector Weightings	Stocks %	Rel Std Index
Cyclical	**29.0**	**1.08**
Basic Materials	23.8	7.77
Consumer Cyclical	3.0	0.33
Financial Services	2.2	0.17
Real Estate	0.0	0.00
Sensitive	**49.5**	**1.10**
Communication Services	5.3	1.19
Energy	1.3	0.11
Industrials	26.0	2.25
Technology	16.8	0.96
Defensive	**21.5**	**0.76**
Consumer Defensive	0.0	0.00
Healthcare	17.5	1.46
Utilities	4.0	1.03

Operations

Family:	The Arbitrage Fund	Ticker:	AEDNX	Incept:	10-01-2010
Manager:	Multiple	Minimum Initial Purchase:	$100,000	Type:	MF
Tenure:	1.0 Year	Min Auto Investment Plan:	$100,000	Total Assets:	$20.40 mil
Objective:	Growth	Minimum IRA Purchase:	$100,000		
Base Currency:	USD	Purchase Constraints:	—		

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MORNINGSTAR®

Fund Reports

Bishop Volatility Flex

by **Mallory Horejs**

Advisor
Bishop Asset Management

Advisor Location
Boston, Massachusetts

Assets Under Management
$3.3 million (fund)

Inception Date
Nov. 19, 2010

Investment Type
Mutual fund

Morningstar Category
Long/short equity

Management
Lead portfolio manager and CIO Kevin Nugent began trading the volatility flex strategy as a separate account and hedge fund product on Jan. 3, 2007, and this track record was allowed to be published in the prospectus when the mutual fund was launched in 2010. Nugent manages the portfolio alongside assistant portfolio manager Bruce Pomper. Rob Steele and Kimberly Furnald help run the fund's operations. Steele, Furnald, Nugent, and Pomper all attended the same undergraduate university, and all have 25 years of financial market experience.

Strategy

This fund seeks to profit from daily market volatility by buying S&P 500 call- and put-option spreads and generating gains on purchased options. The premium paid for an option that is more in-the-money (and therefore more expensive) is partially offset by selling an option that is more out-of-the-money (and therefore cheaper). Management's practice of simultaneously purchasing and writing options reduces the directionality of the volatility bet—buying an option is a long volatility strategy. Because options do not require large cash investments, almost all of the portfolio is invested in 90-day U.S. Treasuries and shorter-term cash. This fund does not employ leverage, meaning the notional value or risk exposure of the S&P 500 options is equivalent to 100% of the fund's total assets. Since inception, this strategy's correlation with the S&P 500 has been negative 0.17 and its beta has been negative 0.06 (using monthly data through September 2011).

Process

Management begins the investment process using an exponentially weighted forward-moving technical indicator to predict the S&P 500's volatility range for the next 30 days. To more fully incorporate near-term volatility, the indicator weights recent data more heavily than older figures. At the beginning of the options cycle (options expire after the third Friday of each month), management uses this moving average to position a vertical call spread (that is, a long-stock position) and vertical put spread (that is, a short-stock position) around the current level of the S&P accordingly. The individual put and call spreads are generally constructed with strikes that are 20 points apart.

In the second part of the process, management determines the relative weightings of the option spreads, based upon whether the market is in a short-term overbought, oversold, or neutral state. Indicators, such as advance/decline oscillators, the put/call ratio, and the VIX rate of change, help determine the market environment. If the market is predicted to be "neutral," management weights the put and call spreads equally. If the market is determined to be oversold (overbought), management will weight call spreads (put spreads) more heavily. Overbought and oversold conditions are measured in three levels. For example, "Level 1 overbought" means that the S&P 500 has increased since the start of the options cycle, and management will begin trimming the call spreads and start buying put spreads. If there are gains, the excess cash may be used to move the put spreads closer to the money. Management will continue this process of unwinding call spreads (put spreads) as the market moves to a Level 2 or Level 3 overbought (oversold) situation. Even in Level 3 environments, though, management always invests in both call and put spreads. When the market begins reverting to neutral, management will reverse the call/put spread weighting process. Trading is triggered automatically and will be more frequent in times of higher market volatility.

Risk Management

The fund's maximum monthly loss is limited to the net cost of the call and put spreads, if the purchased options expire worthless at cycle-end. Management sets a predefined level of risk at the start of every options cycle—approximately 1% each month, or 12% a year. (The cost of options rises and falls with volatility.) Because this strategy is a long volatility strategy, which generates gains based upon price movement of the S&P 500 in either direction, the worst environment for this strategy is when volatility remains flat for an extended period of time.

Bishop Volatility Flex Investor (USD)

Standard Index	Category Index	Morningstar Cat
S&P 500 TR	Russell 1000 TR USD	US OE Long/Short Equity

Performance 09-30-2011

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2009	0.02	0.02	-1.83	-1.74	-3.50
2010	0.62	1.98	0.32	1.01	3.98
2011	-0.10	-1.01	-0.10	—	-1.21

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	-0.21	4.42	—	—	7.84
Std 09-30-2011	-0.21	—	—	—	7.84
Total Return	-0.21	4.42	—	—	7.84
+/- Std Index	-1.36	3.19	—	—	—
+/- Cat Index	-1.12	2.81	—	—	—
% Rank Cat	—	—	—	—	
No. in Cat	—	—	—	—	
7-day Yield	—				

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 877-705-1115 or visit www.bishopassetmanagement.com.

Fees and Expenses

Sales Charges

Front-End Load %	**NA**
Deferred Load %	**NA**

Fund Expenses

Management Fees %	0.75
12b1 Expense %	0.25
Gross Expense Ratio %	**1.33**

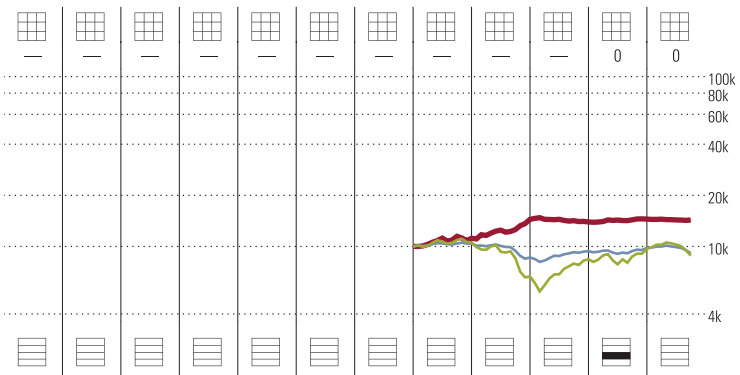
Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	—	—	—
Morningstar Rating™	—	—	—
Morningstar Risk	—	—	—
Morningstar Return	—	—	—

	3 Yr	5 Yr	10 Yr
Standard Deviation	—	—	—
Mean	4.42	—	—
Sharpe Ratio	—	—	—

MPT Statistics	Standard Index	Best Fit Index
Alpha	—	—
Beta	—	—
R-Squared	—	—

12-Month Yield	—
30-day SEC Yield	—
Potential Cap Gains Exp	-0.61%



Investment Style
Fixed-Income
Bond %

Growth of $10,000
- Bishop Volatility Flex Investor 14,313
- Category Average 9,122
- Standard Index 8,832

Performance Quartile
(within category)

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	09-11	History
—	—	—	—	—	—	—	7.67	9.92	9.57	9.95	9.83	NAV/Price
—	—	—	—	—	—	—	*11.68*	29.29	-3.50	3.98	-1.21	Total Return %
—	—	—	—	—	—	—	*6.19*	66.29	-29.97	-11.08	7.47	+/- Standard Index
—	—	—	—	—	—	—	*5.91*	66.89	-31.94	-12.12	8.04	+/- Category Index
—	—	—	—	—	—	—	—	—	—	50	—	% Rank Cat
—	—	—	—	—	—	—	—	—	—	216	144	No. of Funds in Cat

Portfolio Analysis 06-30-2011

Asset Allocation %	Net %	Long %	Short %
Cash	100.08	100.08	0.00
US Stocks	0.00	0.00	0.00
Non-US Stocks	-0.08	0.94	1.02
Bonds	0.00	0.00	0.00
Other/Not Clsfd	0.00	0.00	0.00
Total	100.00	101.02	1.02

Equity Style

Value	Blend	Growth

(Large / Mid / Small)

Portfolio Statistics	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	—	—	—
P/C Ratio TTM	—	—	—
P/B Ratio TTM	—	—	—
Geo Avg Mkt Cap $mil	—	—	—

Fixed-Income Style

Ltd	Mod	Ext

(High / Mod / Low)

Avg Eff Duration	—
Avg Eff Maturity	—
Avg Credit Quality	—
Avg Wtd Coupon	—
Avg Wtd Price	—

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR/NA	—

Regional Exposure	Stock %	Rel Std Index
Americas	—	—
Greater Europe	—	—
Greater Asia	—	—

Top Holdings 03-31-2011

Share Chg since 03-2011	Share Amount	Holdings: 0 Total Stocks , 0 Total Fixed-Income, — Turnover Ratio	% Net Assets
⊕	2 mil	HighMark Diversified Money Market	100.08
✲	15	S & P 500 Index	-1.02
✲	16	S & P 500 Index	0.94

Sector Weightings	Stocks %	Rel Std Index
Cyclical	—	—
Basic Materials	—	—
Consumer Cyclical	—	—
Financial Services	—	—
Real Estate	—	—
Sensitive	—	—
Communication Services	—	—
Energy	—	—
Industrials	—	—
Technology	—	—
Defensive	—	—
Consumer Defensive	—	—
Healthcare	—	—
Utilities	—	—

Operations

Family:	Bishop Asset Management	Ticker:	BVFVX	Incept:	01-03-2007
Manager:	Kevin Nugent	Minimum Initial Purchase:	$5,000	Type:	MF
Tenure:	0.9 Year	Min Auto Investment Plan:	$5,000	Total Assets:	$3.30 mil
Objective:	Growth	Minimum IRA Purchase:	$2,000		
Base Currency:	USD	Purchase Constraints:	—		

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MORNINGSTAR®

Fund Reports

Highland Long/Short Healthcare

by **Terry Tian**

Advisor
Highland Capital Management LP

Advisor Location
Dallas, Texas

Assets Under Management
$61.4 million (fund)

Inception Date
May 5, 2008

Investment Type
Mutual fund

Morningstar Category
Long/short equity

Management
The fund is managed by Michael Gregory, who has subadvised the fund since May 2010. Gregory is the founder and portfolio manager of Cummings Bay Capital Management LLC, a hedge fund firm, for the past four years. He is supported by a team of six, including four research analysts. Prior to Cummings Bay, Gregory managed a dedicated health-care equity hedge fund at Sands Point Capital Management LLC. Gregory received his MBA degree from Yale School of Management, having completed a joint program in health care, management, and public policy.

Strategy

Highland Long/Short Healthcare is one of the two funds in the Morningstar long/short equity category that focus exclusively on the health-care sector. Manager Michael Gregory believes that the long-term growth potential and structural changes in the U.S. health-care industry present better stock-selection opportunities than in the broad stock market. Management sees more pricing inefficiencies in the mid/small-cap universes and allocates approximately 84% of assets to companies with less than $10 billion market capitalization (as of June 30). The fund normally invests 5% to 10% of its assets in international health-care companies. The short positions are most often directional bets that management seeks to profit from, rather than hedges for long positions. As of Aug. 31, the fund holds 73 stocks long and 47 stocks short, with net long exposure of 28% and a beta of 0.2 against S&P 500 (using three-years of weekly data through August). Because the fund is relatively small, its last annual report net expense ratio is high, but it has declined as assets have increased (1.42% as of Sept. 30).

Process

Management combines top-down macro analysis with bottom-up fundamental research to select stocks. Gregory and his team begin with the macro view of the health-care industry to decide the fund's overall net exposure. Management looks to a 16-person advisory group, consisting of academic, legislative, and health-care industry experts, for perspectives on topics such as health-care policy directions, scientific breakthroughs, and industry trends. Next, management assesses the operating prospects of the five health-care subsectors (pharmaceuticals, biotechnology, health-care services, life sciences and tools, and medical devices) and determines the appropriate exposure to each. Finally, management conducts fundamental analysis and develops investment theses on individual companies.

Individual position sizes range from 1% to 10% of the portfolio, although most positions do not exceed 4%. Turnover for long positions is one to two times annually, while shorts turnover is four to six times per year. When establishing a short position, Gregory seeks identifiable catalysts and sets the time frame (typically three to four months) over which the investment thesis must play out. If the theme does not materialize, the position will be closed. Management can hedge the portfolio's overall market risk using options, exchange-traded funds, and short stock positions but will rarely do so.

Risk Management

Management monitors the following risk and exposure factors on a daily basis: gross- and net-dollar exposure and net beta-adjusted exposure at the portfolio, market-capitalization, and subsector levels; portfolio liquidity and number of days to liquidate each position; and value-at-risk. Besides traditional risk-control tools, the fund also employs a proprietary risk model that examines the portfolio's exposures to industry-specific factors, such as hospital utilization rate. When establishing a long or short position, management evaluates the expected downside potential so that the maximum loss on any single holding will not exceed 80 basis points at the portfolio level. Management also enforces rigorous stop-loss rules—a position is trimmed if it loses more than 20% and closed if it loses more than 30%.

Release date 09-30-2011

Highland Long/Short Healthcare A (USD)

Overall Morningstar Rtg™	Standard Index	Category Index	Morningstar Cat
★★★★	S&P 500 TR	Russell 1000 TR USD	US OE Long/Short Equity
69 US OE Long/Short Equity			

Performance 09-30-2011

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2009	-11.78	-3.39	-1.28	16.25	-2.17
2010	5.00	-1.32	4.83	5.00	14.04
2011	1.09	13.81	-7.34	—	6.61

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	5.77	—	—	—	7.54
Std 09-30-2011	5.77	—	—	—	7.54
Total Return	11.93	5.99	—	—	9.34
+/- Std Index	10.79	4.76	—	—	—
+/- Cat Index	11.03	4.39	—	—	—
% Rank Cat	1	6	—	—	
No. in Cat	119	69	—	—	
7-day Yield	0.00				

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 877-665-1287 or visit www.highlandfunds.com.

Fees and Expenses

Sales Charges

Front-End Load %	**5.50**
Deferred Load %	**NA**

Fund Expenses

Management Fees %	2.45
12b1 Expense %	0.35
Gross Expense Ratio %	**7.15**

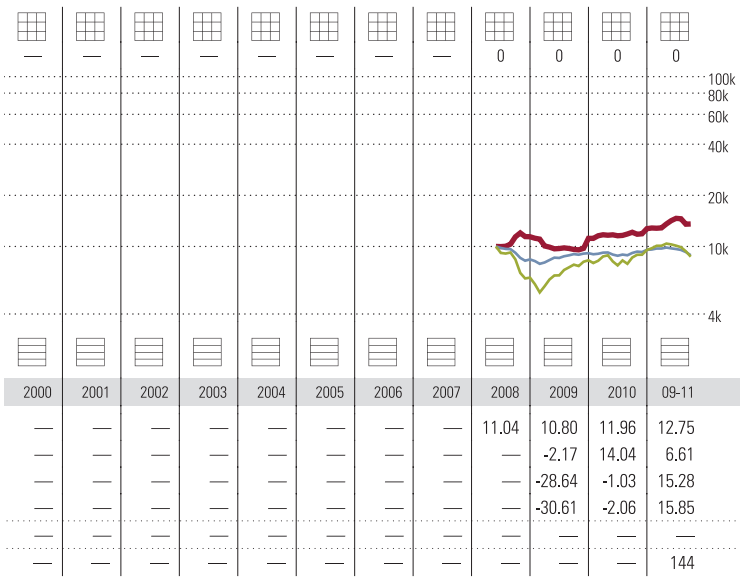
Risk and Return Profile

	3 Yr 69 funds	5 Yr *48 funds*	10 Yr *12 funds*
Morningstar Rating™	4★	—	—
Morningstar Risk	Avg	—	—
Morningstar Return	+Avg	—	—

	3 Yr	5 Yr	10 Yr
Standard Deviation	13.75	—	—
Mean	5.99	—	—
Sharpe Ratio	0.48	—	—

MPT Statistics	Standard Index	Best Fit Index
Alpha	6.53	—
Beta	0.02	—
R-Squared	0.06	—

12-Month Yield	—
30-day SEC Yield	—
Potential Cap Gains Exp	3.31%



Investment Style
Fixed-Income
Bond %

Growth of $10,000
- Highland Long/Short Healthcare A 13,564
- Category Average 8,881
- Standard Index 8,703

Performance Quartile (within category)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	09-11	History
	—	—	—	—	—	—	—	—	11.04	10.80	11.96	12.75	NAV/Price
	—	—	—	—	—	—	—	—	—	-2.17	14.04	6.61	Total Return %
	—	—	—	—	—	—	—	—	—	-28.64	-1.03	15.28	+/- Standard Index
	—	—	—	—	—	—	—	—	—	-30.61	-2.06	15.85	+/- Category Index
	—	—	—	—	—	—	—	—	—	—	—	—	% Rank Cat
	—	—	—	—	—	—	—	—	—	—	—	144	No. of Funds in Cat

Portfolio Analysis 03-31-2011

Asset Allocation %	Net %	Long %	Short %
Cash	9.22	9.22	0.00
US Stocks	31.45	84.91	53.45
Non-US Stocks	1.13	10.75	9.62
Bonds	0.00	0.00	0.00
Other/Not Clsfd	58.20	58.20	0.00
Total	100.00	163.07	63.07

Equity Style

Value	Blend	Growth
			Large
			Mid
		■	Small

Portfolio Statistics	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	13.5	1.08	1.04
P/C Ratio TTM	7.7	0.95	0.97
P/B Ratio TTM	2.4	1.33	1.36
Geo Avg Mkt Cap $mil	1045	0.02	0.07

Fixed-Income Style

Ltd	Mod	Ext
			High
			Mod
			Low

Avg Eff Duration	—
Avg Eff Maturity	—
Avg Credit Quality	—
Avg Wtd Coupon	—
Avg Wtd Price	—

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR/NA	—

Regional Exposure	Stock %	Rel Std Index
Americas	95.4	0.96
Greater Europe	4.6	28.65
Greater Asia	0.0	—

Share Chg since 12-2010	Share Amount	Holdings: 94 Total Stocks , 0 Total Fixed-Income, 1553% Turnover Ratio	% Net Assets
	1 mil	Genesys Ventures Ia, L.P.	6.62
⊕	289,702	Myrexis, Inc.	3.98
⊕	350,695	Dynavax Technologies Corporation	3.45
✲	24,364	Healthspring, Inc.	3.24
✲	11,352	Pharmasset, Inc.	-3.18
✲	21,177	WellCare Health Plans, Inc.	3.16
✲	12,135	Cooper Companies	-3.00
	14,000	Johnson & Johnson	-2.95
✲	40,601	ViroPharma, Inc.	-2.88
✲	16,588	InterMune, Inc.	2.79
⊕	71,322	Health Management Associates, Inc.	2.77
⊕	223,600	Raptor Pharmaceutical Corp	2.75
✲	80,316	NPS Pharmaceuticals Inc	2.74
✲	13,785	Baxter International Inc.	2.64
	6,000	Bio-Rad Laboratories Inc.	2.57

Sector Weightings	Stocks %	Rel Std Index
Cyclical	**0.0**	**0.00**
Basic Materials	0.0	0.00
Consumer Cyclical	0.0	0.00
Financial Services	0.0	0.00
Real Estate	0.0	0.00
Sensitive	**3.7**	**0.08**
Communication Services	0.0	0.00
Energy	0.0	0.00
Industrials	0.0	0.00
Technology	3.7	0.21
Defensive	**96.3**	**3.44**
Consumer Defensive	0.0	0.00
Healthcare	96.3	8.07
Utilities	0.0	0.00

Operations

Family:	Highland Funds	Ticker:	HHCAX	Incept:	05-05-2008
Manager:	Michael D. Gregory	Minimum Initial Purchase:	$5,000	Type:	MF
Tenure:	1.4 Years	Min Auto Investment Plan:	$50	Total Assets:	$61.42 mil
Objective:	Specialty - Health	Minimum IRA Purchase:	$50		
Base Currency:	USD	Purchase Constraints:	—		

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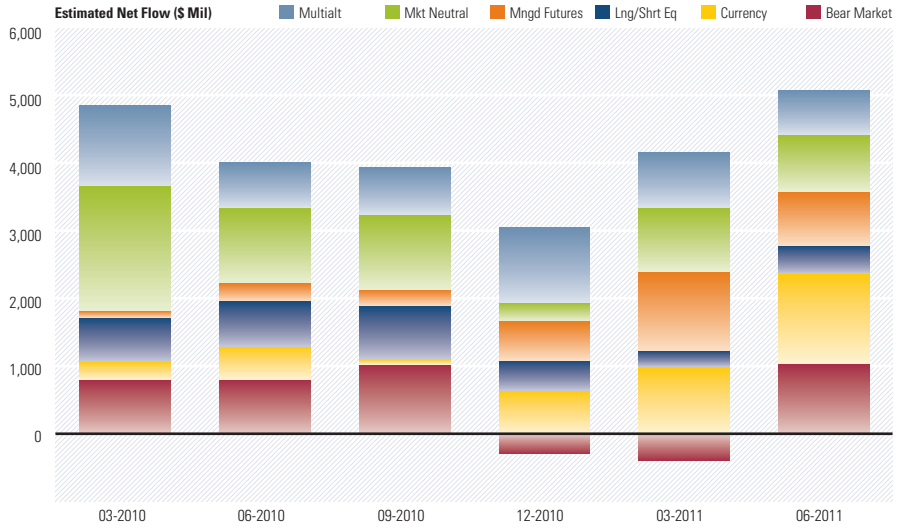
MORNINGSTAR®

Flows and Assets Under Management: Alternative Mutual Funds

Quarterly Alternative Mutual Fund Flows

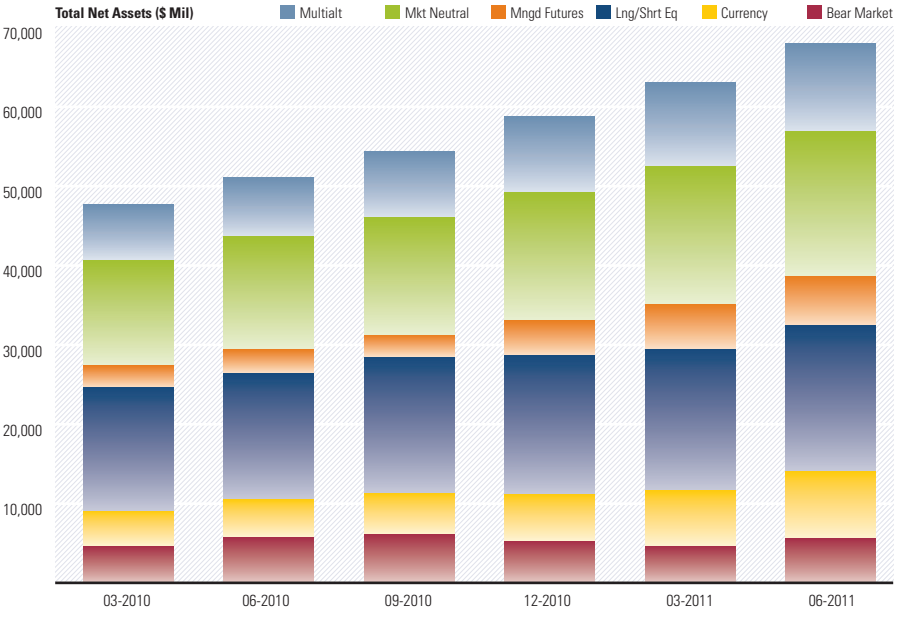
During the second quarter of 2011, alternative mutual funds experienced net inflows of $5.1 billion, a 34.8% increase from the previous quarter. There were no net outflows to any category in the second quarter. Funds in the bear-market category saw the most net inflows this quarter, totaling $1.04 billion. Funds in the long-short equity and currency categories also saw significantly more inflows in the second quarter (a total of $412 million and $1.34 billion, respectively). Conversely, flows slowed to funds in Morningstar's managed futures, market-neutral, and multialternative categories, which saw inflows of only $797 million, $835 million, and $658 million, respectively.



At the end of the second quarter, PIMCO Emerging Markets Currency **PLMAX** changed to the currency category; it had been in the emerging-markets bond category. This resulted in a significant increase in fund flows for the entire alternatives universe.

Quarterly Alternative Mutual Fund Assets Under Management

Assets under management of all alternative mutual funds increased by 7.9% during the second quarter of 2011 to almost $68 billion. Collectively, however, these alternative mutual funds still represent less than 1% of total mutual fund assets. All fund categories showed an increase in assets under management quarter over quarter. Bear-market funds' assets increased the most (20.85%), entirely because of inflows. Assets in the currency and managed futures categories increased 19.8% and 10.8%, respectively, also primarily because of fund inflows. Total assets long-short equity and market-neutral stood at $18.3 billion and $18.2 billion, respectively, as of June 30, 2011.



Flows and Assets Under Management: Hedge Funds

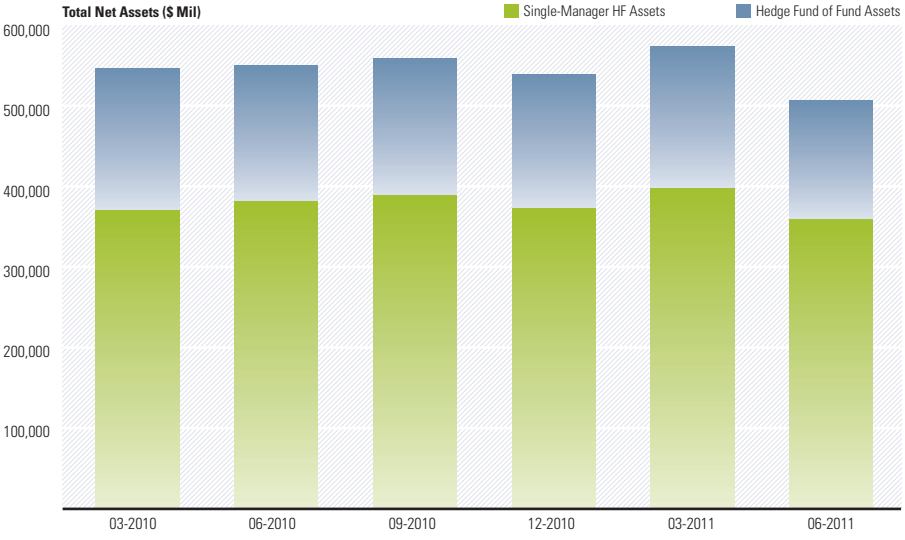
Quarterly Hedge Fund Flows

During the second quarter of 2011, single-manager hedge funds in the Morningstar database experienced inflows of $7.7 billion, and hedge funds of funds in the Morningstar database experienced outflows of $1.3 billion. Funds in the systematic futures and long/short debt categories experienced the largest inflows: $3.0 billion and $862 million, respectively. Equity market-neutral and distressed-securities hedge funds in the database bled $340 million and $123 million, respectively.

Quarterly Hedge Fund Assets Under Management

Single-manager hedge fund assets in Morningstar's database decreased 9.4% during the second quarter. Year over year (as of June 30, 2011), assets under management of single-manager hedge funds fell by 5.7%. Because of both negative returns and outflows, hedge funds of funds within Morningstar's database manage 16.5% fewer assets than in the previous quarter and 7.8% less than one year ago.

Morningstar does not report total hedge fund industry flows or assets, as these figures are based on estimates and projections of voluntarily reported information.

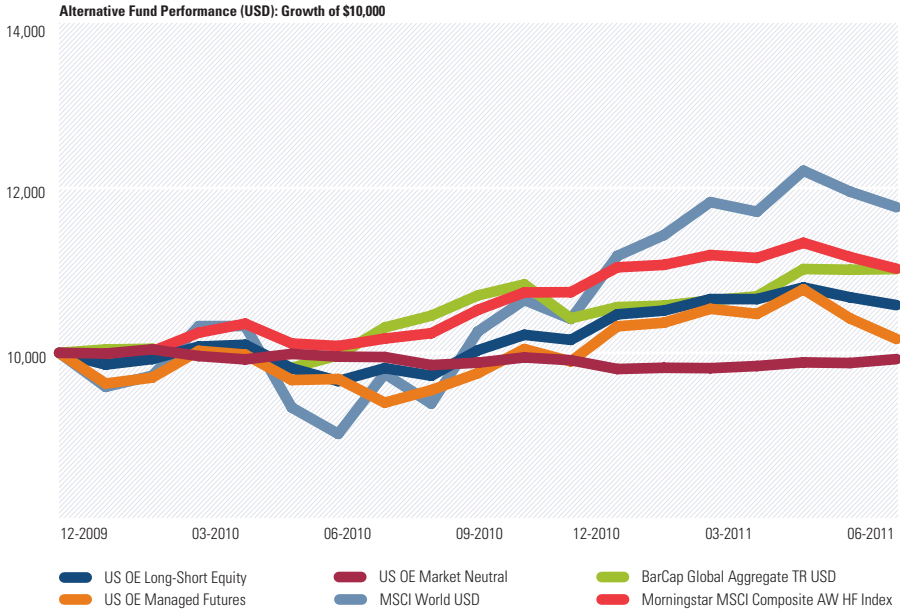


Alternative Investment Performance

Growth of a $10,000 Alternative Investment

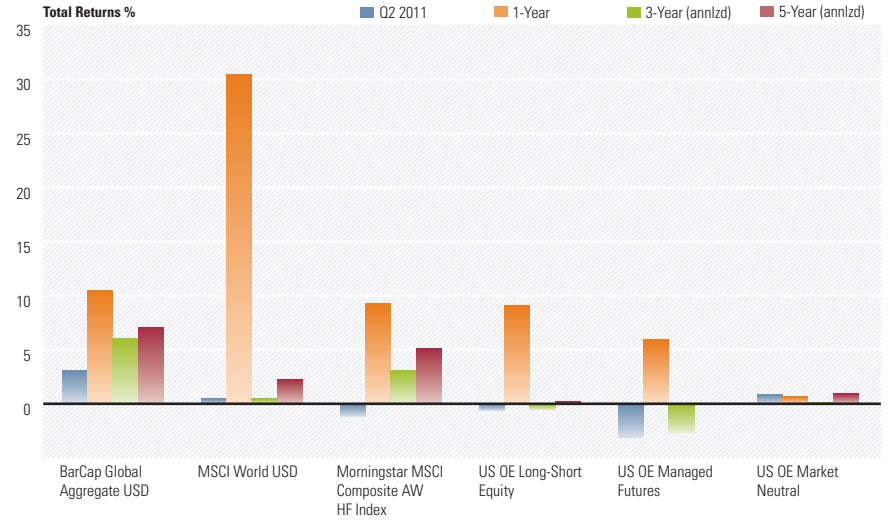
Hedge funds, as proxied by the Morningstar MSCI Composite AW Index, lost 1.2% in the second quarter, while global stocks, as represented by the MSCI World NR Index, increased by 0.5%. The MSCI World NR Index rose by 17.7% in the 18 months ended June 30, while the Morningstar MSCI Composite AW increased by 10.2%. Although managed futures mutual funds outperformed hedge funds in general in the second quarter, hedge funds in Morningstar's database have substantiality outpaced alternative mutual funds in the past 18 months.

Morningstar no longer publishes its proprietary hedge fund indexes. As proxies for the indexes, Morningstar uses the Morningstar MSCI series of indexes, including the Morningstar MSCI Composite AW, a currency-hedged asset-weighted index with 956 hedge funds, as well as category averages.



Performance of Alternative Investments Over Time

While global stocks (as represented by the MSCI World NR Index) outperformed the average hedge fund (per the Morningstar MSCI Composite AW) in the quarter ended June 30, 2011, hedge funds have provided better returns than equities during the past three and five years. Global bonds have fared even better than both stocks and hedge funds in these longer-term periods, and bonds experienced a gain of 3.1% in the second quarter of 2011. Three alternative mutual fund categories (long/short equity, managed futures, and market-neutral) underperformed hedge funds and global stocks over the one-year and three-year periods ended June 30, 2011.

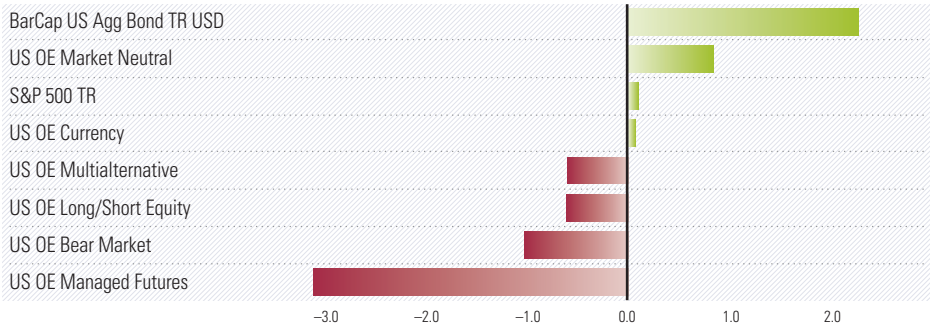


Q2 Performance by Category

Alternative Mutual Funds

The average managed futures mutual fund lost 3.1% in the second quarter of 2011. The average bear-market fund fell 1.03%, far more than the S&P 500's 0.1% rise. Long-short equity mutual funds underperformed the broad stock market, incurring a 0.6% loss on average. Currency funds gained 0.1% on average for the quarter ended June 30, 2010, while U.S. bonds gained 2.3%.

Morningstar Alternative Mutual Fund Category Averages: Q2 2011 Total Returns %

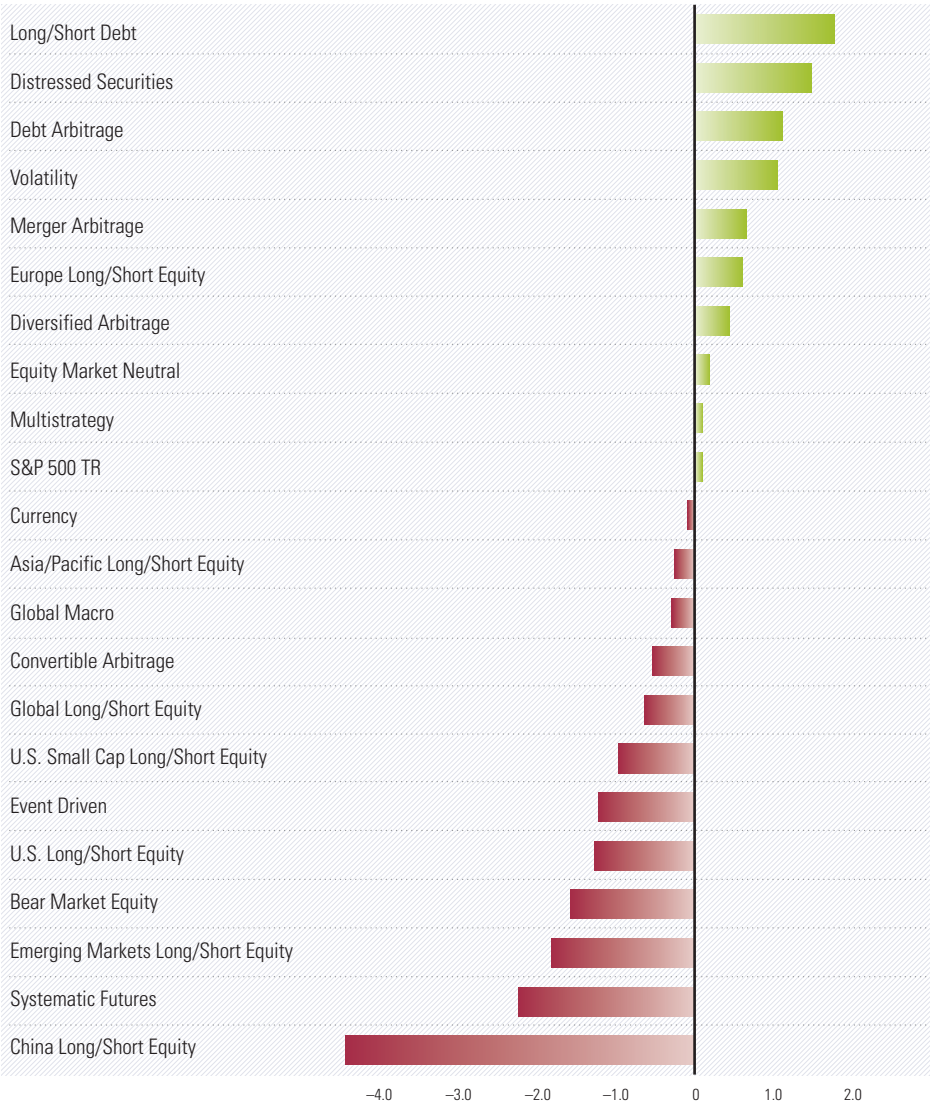


Hedge Funds

In the second quarter of 2011, there were both big winners and big losers among the hedge fund categories. The biggest losers were funds in the China long/short equity and systematic-futures categories, which lost 4.4% and 2.2%, respectively. The Morningstar long/short debt and distressed-securities categories experienced the largest average increases: 1.8% and 1.5%, respectively. These large differentials can be attributed to volatility in emerging markets and various credit markets. The S&P 500 Index was roughly flat for the quarter.

Morningstar is in the process of creating indexes for its new hedge fund categories.

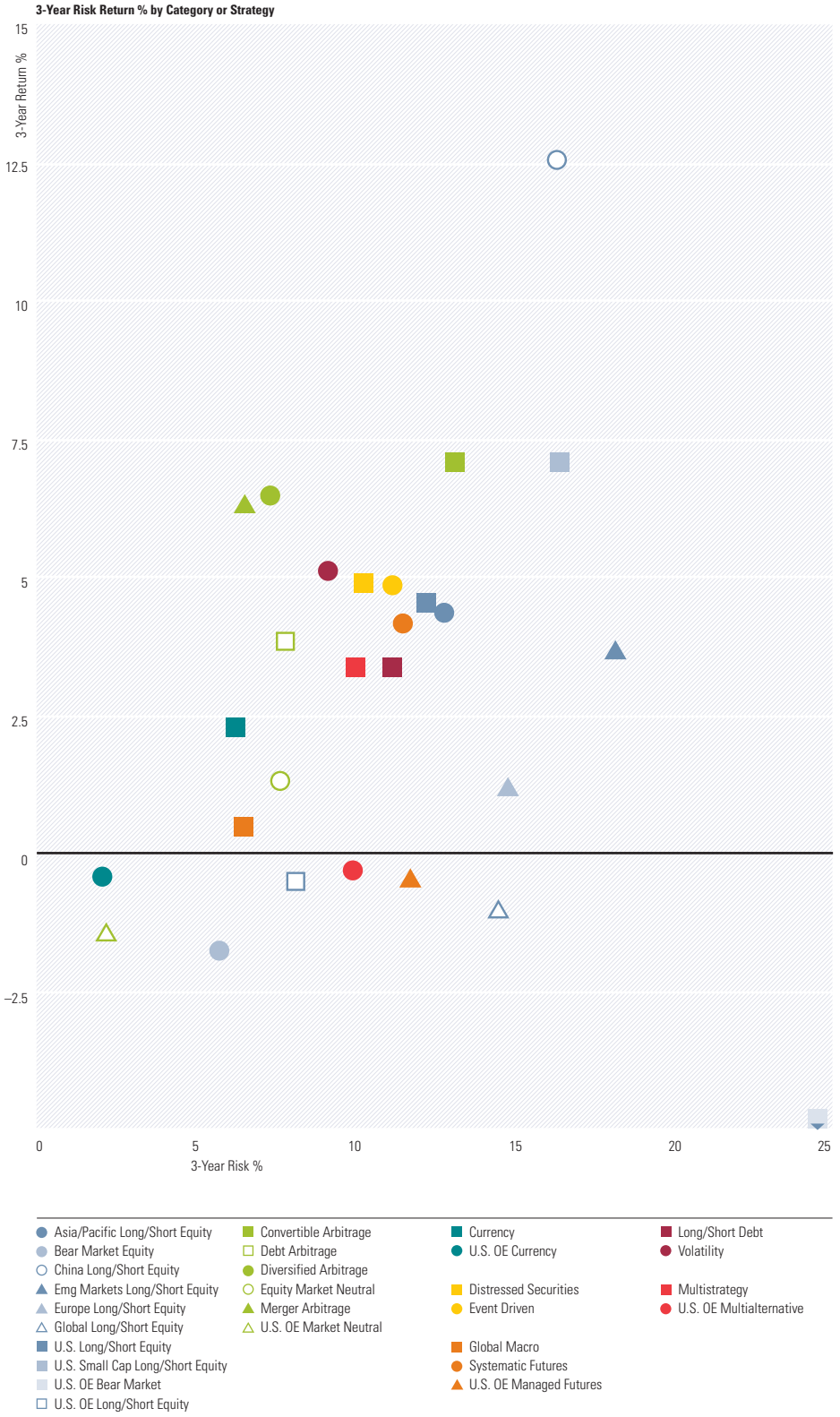
Morningstar Hedge Fund Category Averages: Q2 2011 Total Returns %



Risk Versus Return: Alternative Mutual Funds and Hedge Funds

Three-Year Standard Deviation and Return

Nineteen alternative-investment category averages provided positive returns over the three years ended June 2011. Both the Morningstar China Long/Short Equity and the Morningstar Convertible Arbitrage Hedge Fund averages saw the largest increases, of 12.6% and 7.1%, respectively, in the past three years. In terms of risk-adjusted returns, merger-arbitrage and diversified-arbitrage hedge funds produced the best results during the past three-year period. In contrast, the U.S. bear-market mutual fund category saw a 21.0% decline on average in the three-year period ended June 2011, with the highest standard deviation of all alternative categories at 24.4% annualized. The average market-neutral mutual fund also exhibited a poor three-year risk-adjusted return profile, losing 1.4% with a 2.2% annualized standard deviation.



Correlations by Alternative Fund Strategy

Three-Year Correlations: Alternative Mutual Fund Categories	1	2	3	4	5	6
1 US OE Bear Market	1.00					
2 US OE Currency	–0.58	1.00				
3 US OE Long/Short Equity	–0.95	0.61	1.00			
4 US OE Market Neutral	–0.09	0.08	0.21	1.00		
5 US OE Managed Futures	0.20	0.12	–0.19	0.03	1.00	
6 US OE Multialternative	–0.94	0.60	0.99	0.15	–0.20	1.00

Three-Year Correlations: Hedge Fund Category Averages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 Asia/Pacific Long/Short Equity	1.00																				
2 Bear Market Equity	–0.13	1.00																			
3 China Long/Short Equity	0.40	0.30	1.00																		
4 Convertible Arbitrage	0.79	–0.25	0.52	1.00																	
5 Currency	0.67	0.06	0.34	0.47	1.00																
6 Debt Arbitrage	0.82	–0.23	0.47	0.94	0.58	1.00															
7 Distressed Securities	0.75	–0.32	0.33	0.83	0.44	0.88	1.00														
8 Diversified Arbitrage	0.81	–0.21	0.49	0.92	0.46	0.89	0.78	1.00													
9 Emerging Markets Long/Short Equity	0.81	–0.24	0.72	0.88	0.59	0.87	0.79	0.85	1.00												
10 Equity Market Neutral	0.92	–0.01	0.43	0.81	0.78	0.89	0.74	0.82	0.83	1.00											
11 Europe Long/Short Equity	0.92	–0.09	0.38	0.83	0.78	0.90	0.79	0.81	0.82	0.97	1.00										
12 Event Driven	0.88	–0.25	0.46	0.93	0.57	0.91	0.92	0.90	0.90	0.86	0.89	1.00									
13 Global Long/Short Equity	0.93	–0.18	0.45	0.89	0.69	0.92	0.84	0.88	0.89	0.95	0.96	0.95	1.00								
14 Global Macro	0.82	0.07	0.42	0.67	0.90	0.77	0.61	0.63	0.74	0.90	0.89	0.74	0.84	1.00							
15 Long/Short Debt	0.86	–0.18	0.46	0.94	0.61	0.98	0.86	0.89	0.89	0.92	0.93	0.92	0.94	0.79	1.00						
16 Merger Arbitrage	0.89	–0.27	0.40	0.86	0.68	0.87	0.69	0.83	0.80	0.91	0.92	0.86	0.93	0.80	0.89	1.00					
17 Multistrategy	0.90	–0.07	0.45	0.89	0.76	0.92	0.81	0.87	0.85	0.96	0.97	0.93	0.97	0.89	0.93	0.91	1.00				
18 Systematic Futures	0.43	0.33	0.07	0.11	0.75	0.22	0.17	0.10	0.21	0.48	0.46	0.27	0.37	0.70	0.24	0.31	0.47	1.00			
19 U.S. Long/Short Equity	0.87	–0.30	0.44	0.89	0.53	0.87	0.90	0.86	0.87	0.83	0.86	0.97	0.94	0.70	0.88	0.81	0.90	0.27	1.00		
20 U.S. Small Cap Long/Short Equity	0.89	–0.28	0.45	0.86	0.57	0.85	0.89	0.83	0.88	0.84	0.86	0.96	0.94	0.73	0.87	0.81	0.89	0.30	0.99	1.00	
21 Volatility	0.74	–0.23	0.39	0.76	0.57	0.80	0.56	0.68	0.71	0.82	0.79	0.68	0.78	0.74	0.83	0.85	0.78	0.28	0.64	0.64	1.00

1.00 to 0.76 | 0.75 to 0.51 | 0.50 to 0.25 | 0.25 to 0.00
0.00 to –0.24 | –0.25 to –0.49 | –0.50 to –0.74 | –0.75 to –1.00

Correlations of Alternative Funds to Traditional Asset Classes

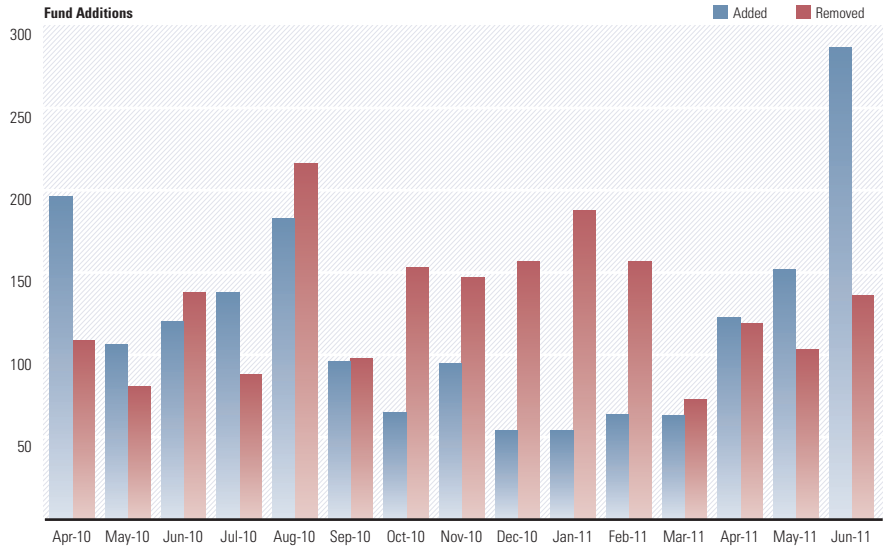
Correlation of Mutual Funds to U.S. Stocks and Bonds	S&P 500 Correlation (USD)			BarCap US Agg Correlation (USD)		
	3-Year	5-Year	10-Year	3-Year	5-Year	10-Year
US OE Bear Market	–0.97	–0.97	–0.96	–0.37	–0.25	0.03
US OE Currency	0.56	0.45	0.06	0.05	0.10	0.28
US OE Long/Short Equity	0.96	0.95	0.81	0.28	0.16	0.10
US OE Market Neutral	0.07	–0.02	–0.33	0.22	0.03	0.23
US OE Managed Futures	–0.24	N/A	N/A	–0.39	N/A	N/A
US OE Multialternative	0.96	0.95	0.87	0.32	0.22	–0.09

Correlation of Hedge Funds to U.S. Stocks and Bonds	S&P 500 Correlation (USD)			BarCap US Agg Correlation (USD)		
	3-Year	5-Year	10-Year	3-Year	5-Year	10-Year
Morningstar MSCI Composite AW	0.74	0.69	0.64	0.26	0.08	0.03
Asia/Pacific Long/Short Equity	0.83	0.79	0.66	0.39	0.27	0.11
Bear Market Equity	–0.47	–0.46	–0.52	–0.11	–0.02	0.09
China Long/Short Equity	0.35	0.32	N/A	0.18	–0.01	N/A
Convertible Arbitrage	0.75	0.72	0.61	0.42	0.36	0.24
Currency	0.53	0.40	0.19	0.28	0.16	0.24
Debt Arbitrage	0.79	0.76	0.31	0.41	0.32	0.26
Distressed Securities	0.81	0.79	0.71	0.13	0.06	–0.01
Diversified Arbitrage	0.72	0.65	0.52	0.40	0.31	0.26
Emerging Markets Long/Short Equity	0.77	0.74	0.70	0.35	0.19	0.06
Equity Market Neutral	0.79	0.70	0.52	0.41	0.27	0.25
Europe Long/Short Equity	0.84	0.79	0.69	0.37	0.24	0.15
Event Driven	0.87	0.84	0.76	0.30	0.18	0.08
Global Long/Short Equity	0.89	0.83	0.74	0.38	0.21	0.08
Global Macro	0.65	0.51	0.45	0.41	0.26	0.19
Long/Short Debt	0.81	0.76	0.62	0.45	0.39	0.31
Merger Arbitrage	0.79	0.80	0.71	0.56	0.37	0.23
Multistrategy	0.81	0.75	0.72	0.35	0.24	0.11
Systematic Futures	0.24	0.13	–0.01	0.09	0.02	0.20
U.S. Long/Short Equity	0.92	0.89	0.87	0.20	0.08	–0.06
U.S. Small Cap Long/Short Equity	0.90	0.87	0.86	0.19	0.07	–0.09
Volatility	0.61	0.44	0.26	0.61	0.52	0.24

Morningstar Hedge Fund Database Overview as of 06-30-2011

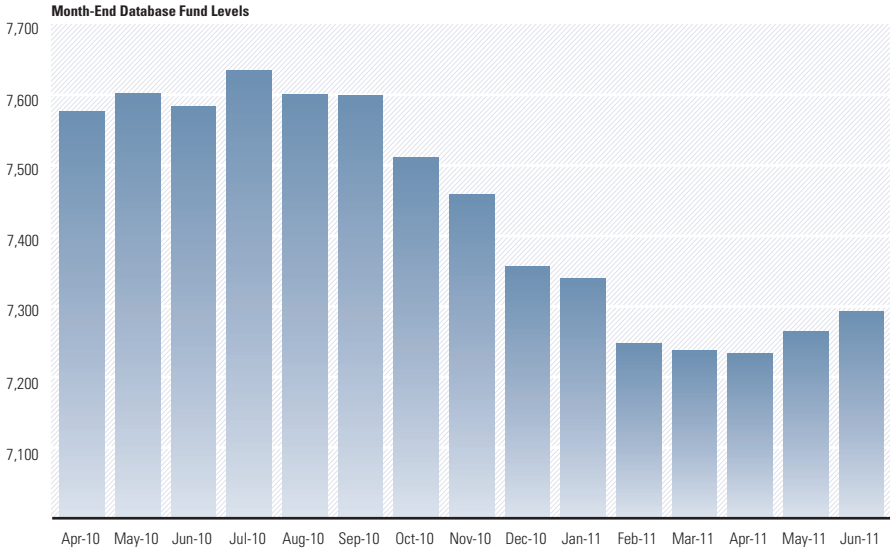
Net Fund Additions by Month

Morningstar's hedge fund database experienced net additions of 204 funds during the second quarter of 2011. The database saw 562 additions and 358 fund withdrawals during the quarter. Funds drop out because they have liquidated or because they cease sharing performance data, typically because of poor performance. Likewise, they may be added because they are new funds, or they have recently agreed to supply Morningstar with their data.



Month-End Database Fund Levels

As of June 30, 2011, the Morningstar hedge fund database contained 7,293 funds with performance history and assets-under-management data. This figure includes both single-manager hedge funds and funds of hedge funds, which accounted for approximately 5,000 and 2,700 funds, respectively. As of the end of the first quarter of 2011, the number of funds in the database had dropped approximately 3.8% from April 2010 levels.



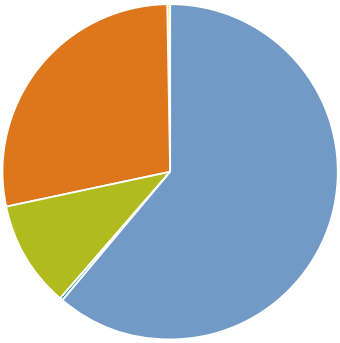
Morningstar Hedge Fund Database Overview as of 06-30-2011

Hedge Funds by Region

Approximately 61% of hedge funds in the Morningstar database are legally domiciled in the North American/Caribbean region, primarily in the United States and Canada. A large percentage of U.K. hedge funds are also domiciled in the Cayman Islands for tax and regulatory purposes. Almost 28% of funds in Morningstar's database are domiciled in Europe, including both European Union and non-EU jurisdictions.

Morningstar now reports where hedge funds are legally domiciled, instead of the advisors' locations.

Morningstar Hedge Fund Database by Region



Region	# Funds
N. America/Carribean	4,455
Africa	26
Asia/Australia	748
Europe	2,048
South America	13
Other	0
Total	**7,290**

Hedge Funds by Location

Approximately 76% of the hedge funds in Morningstar's database are domiciled in the United States, the Cayman Islands, China, the British Virgin Islands, Bermuda, and Luxembourg. France continues to domicile the most European hedge funds after Luxembourg. There are surprising few hedge funds domiciled in the United Kingdom and Germany in the database.

North America and Surrounding	**4,455**
Cayman Islands	1,859
United States	1,393
British Virgin Islands	481
Bermuda	431
Canada	204
Netherlands Antilles	46
Bahamas	26
Panama	9
St. Vincent & the Grenadines	5
Barbados	1

Africa	**26**
Mauritius	13
South Africa	13

Asia and Australia	**748**
China	677
Australia	40
Christmas Island	17
Hong Kong	6
Japan	2
Singapore	2
Bahrain	1
Marshall Islands	1
Samoa	1
Vanuatu	1

Europe	**2,048**
Luxembourg	704
France	211
Ireland	193
Switzerland	147
Guernsey	140
Italy	114
Sweden	96
Malta	84
Jersey	72
Liechtenstein	60
Netherlands	54
United Kingdom	45
Spain	33
Finland	18
Isle of Man	16
Austria	11
Denmark	11
Germany	11
Channel Islands	9
Belgium	5
Gibraltar	5
Cyprus	4
Norway	3
Andorra	1
Georgia	1

South America	**13**
Brazil	13

Morningstar Hedge Fund Database Overview as of 06-30-2011

Service Providers

Morgan Stanley and Goldman Sachs are the largest prime brokerage-service providers to hedge funds in Morningstar's database, serving a 30% share combined. The big four accounting firms are employed by approximately 73% of the hedge fund database. Citco Fund Services provides administration services to 8.8% of funds in Morningstar's database, significantly more than the next-largest administrator. Maples and Calder, Walkers, and Seward & Kissel are the largest legal-service providers to hedge funds in the database, with a combined 22% market share.

Type	Rank	Service Provider	% of Database
Prime Broker	1	Morgan Stanley	15.82
	2	Goldman, Sachs & Co.	14.81
	3	UBS	7.86
	4	Credit Suisse	6.60
	5	Deustche Bank	6.37
	6	JPMorgan	6.24
	7	Newedge Group Inc.	4.19
	8	Merrill Lynch	2.66
	9	BNP Paribas	2.63
	10	Banc of America Securities LLC	2.57
Legal Counsel	1	Maples and Calder	8.64
	2	Walkers	6.75
	3	Seward & Kissel	6.38
	4	Dechert	5.99
	5	Elvinger, Hoss & Prussen	4.49
	6	Simmons & Simmons	3.68
	7	Schulte Roth & Zabel	3.47
	8	Sidley Austin	3.36
	9	Appleby	3.18
	10	Ogier	2.91
Auditor	1	Pricewaterhouse Coopers	23.05
	2	KPMG	18.83
	3	Ernst & Young	17.51
	4	Delloite	13.52
	5	Rothstein Kass	5.98
	6	RSM / McGladery & Pullen	2.68
	7	Grant Thornton	2.39
	8	BDO	2.23
	9	Cabinet Patrick Sellam	1.32
	10	Eisner	1.30
Administrator	1	Citco	8.83
	2	HSBC	4.46
	3	Apex	3.18
	4	Citigroup	3.16
	5	CACEIS Fastnet	2.84
	6	CIBC / BNY Mellon	2.48
	7	Northern Trust	2.30
	8	UBS	1.89
	9	Fortis Bank	1.46
	10	International Fund Services	1.27

Alternative Investments Observer

Editor
Nadia Papagiannis, CFA

Contributors
Philip J. Martin, Roger Ibbotson, Ph.D.; Peng Chen, Ph.D, CFA; Kevin X. Zhu; Cindy Sin-Yi Tsai, CFA, CAIA; Nadia Papagiannis, CFA; Terry Tian; Mallory Horejs; Josh Charney; Benjamin N. Alpert, CFA, CAIA

Copy Editors
Michael Brennan; Jennifer Ferone Gierat; Elizabeth Knapik; Elizabeth Romanek

Design
Adam Middleton

Data Team
Max Salk

Publisher
Scott Burns

Vice President of Research
John Rekenthaler, CFA

Managing Director
Don Phillips

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For inquiries contact: **newslettersupport@morningstar.com** or **nadia.papagiannis@morningstar.com**