

Democratizing Alternatives

Real-World Hedge Fund Replication



Professor Robert F. Whitelaw, Ph.D.,
Salvatore J. Bruno & Anthony B. Davidow

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Abstract

Hedge fund strategies can be extremely powerful tools for portfolio construction. A well-executed hedge fund strategy will deliver two of the most coveted attributes on Wall Street: strong absolute returns and low correlations to other assets. These attributes have fueled exponential growth in the hedge fund industry. Today, there are more than 9,000 hedge funds managing over \$2 trillion in assets worldwide.¹

Surging interest in hedge funds has created significant challenges for the industry. As more and more funds chase the same alpha using similar investment strategies, industry-wide returns have lagged. At the same time, some funds have taken on additional leverage and risks in the search for alpha, increasing idiosyncratic manager risk and the threat of a “blow-up” scenario. These problems are complicated by a high fee structure that typically charges 2 percent of assets per year, plus 20 percent of profits. Many of these hedge funds struggled in 2008, with the credit crisis, and the related “crisis of confidence.” While the basic merits of hedge fund investing remain intact, retaining investors in volatile markets proved challenging, draining assets and driving some funds to consider closing.

However, new solutions enable wider access to hedge fund characteristics at lower costs. Over the past 10 years, the academic community has done substantial research into the tracking and replication of hedge fund results. Recently, several firms have launched hedge fund index replication strategies using a variety of equity, fixed-income and derivative products. These strategies appear to be targeted primarily at institutional and high net worth investors.

IndexIQ, a leading developer of next-generation index and quantitative investment strategies, takes these replication strategies further, bringing transparency to an opaque process and opening up the field to all investors. Leveraging internal expertise in quantitative product development and exchange-traded funds (ETFs), IndexIQ has created a set of strategies that capture the risk/return characteristics of popular hedge fund strategies by using portfolios of highly liquid ETFs. The IQ Hedge™ suite of indexes offers the potential for lower costs* and reduced risk, as well as greater transparency and liquidity, compared with traditional hedge funds and existing synthetic hedge funds. By seeking to make hedge-fund-like returns available to all investors, IndexIQ is democratizing access to this important asset class.

*Ordinary brokerage commissions apply.

Hedge Funds: State Of The Industry

Since the first fund was launched by Alfred W. Jones in 1949, hedge funds have experienced tremendous growth. Jones' innovation was to use two strategies commonly associated with increased risk—short-selling and leverage—to actually lower the risk of an underlying portfolio, laying the groundwork for strong risk-adjusted returns. Jones used a classic “long-short” strategy: He went long on stocks he considered “undervalued” and short on stocks he considered “overvalued.” Therefore, the fund was “hedged,” because the short positions cushioned the fund from broad-based market declines.

Hedge Fund Product Evolution

Since Jones' innovation, the hedge fund industry has grown in fits and starts (Figure 1).² The 1960s were characterized by slow growth from early adopters, with most following classic hedging strategies. The early 1970s saw a brief contraction, as well as moves by managers into riskier leveraged strategies, many of which collapsed during the bear market of 1973–1974.

The industry recovered slowly, until the late 1980s, when the first derivatives-based strategies launched.

In the 1990s, a huge influx of top money managers became attracted to the available asset pool (and the high fees). As the broad equity markets tumbled in 2000, the industry experienced its most dramatic phase of growth; by 2007, the number of funds rose from just under 4,000 to over 10,000³ (Figure 2).

Like so many financial innovations before, the hedge fund has matured. With that maturity comes opportunity—the opportunity for disruptive innovation.

Powerful Demand Fuels Industry Growth

Continued demand for hedge fund strategies has pushed industry assets significantly higher. Total assets have quadrupled since 2000, and it is estimated that hedge fund

activity makes up 30 percent of total daily trading volume in U.S. markets.⁴

In 2006, net assets of the global hedge fund industry rose by 24 percent and, by 2008, approached the \$2 trillion mark, according to Hedge Fund Research, Inc.

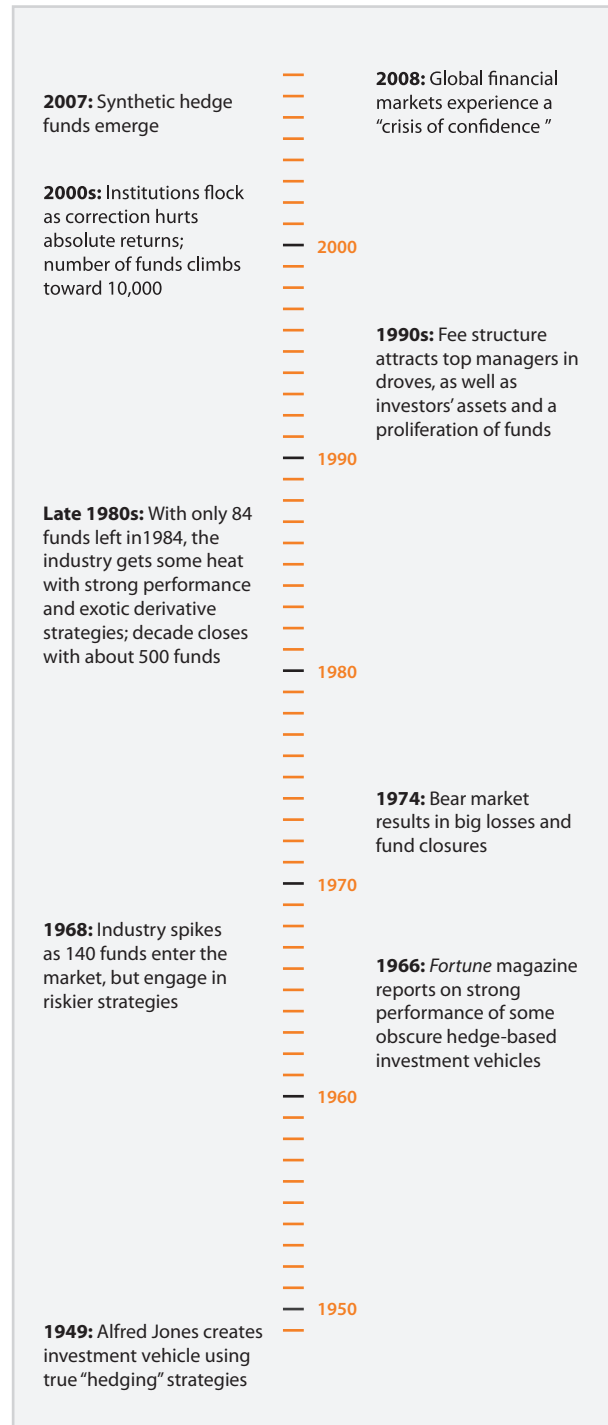


Figure 1

As with the boom in the mutual fund industry, this recent period of dramatic growth has spawned opportunities for innovation. In particular, there has been strong growth in hedge funds of funds: More than 2,000 funds of funds have entered the marketplace, mostly from 2005–2007. In 2007, assets in these vehicles were estimated at \$950 billion.⁵

Some of this demand derives from the useful nature of hedge funds as tools in building portfolios. Investors and the media talk about hedge funds as if they were a discrete

asset class, like municipal bonds. The reality is far more nuanced: Hedge funds pursue a broad range of strategies, each offering different risk/return characteristics. Looking at the historical performance of the industry (Figure 3) shows the wide range of product types and the risk/return layout within hedge funds during recent years.

But the fact remains that hedge fund returns provide unique, often minimally correlated returns when compared with more-traditional asset classes (Figure 4).

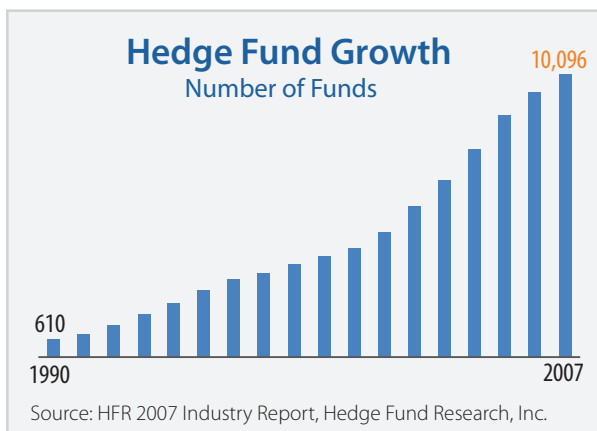


Figure 2

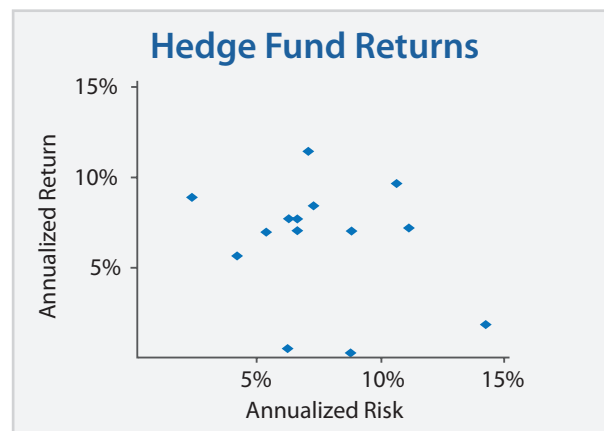


Figure 3** †

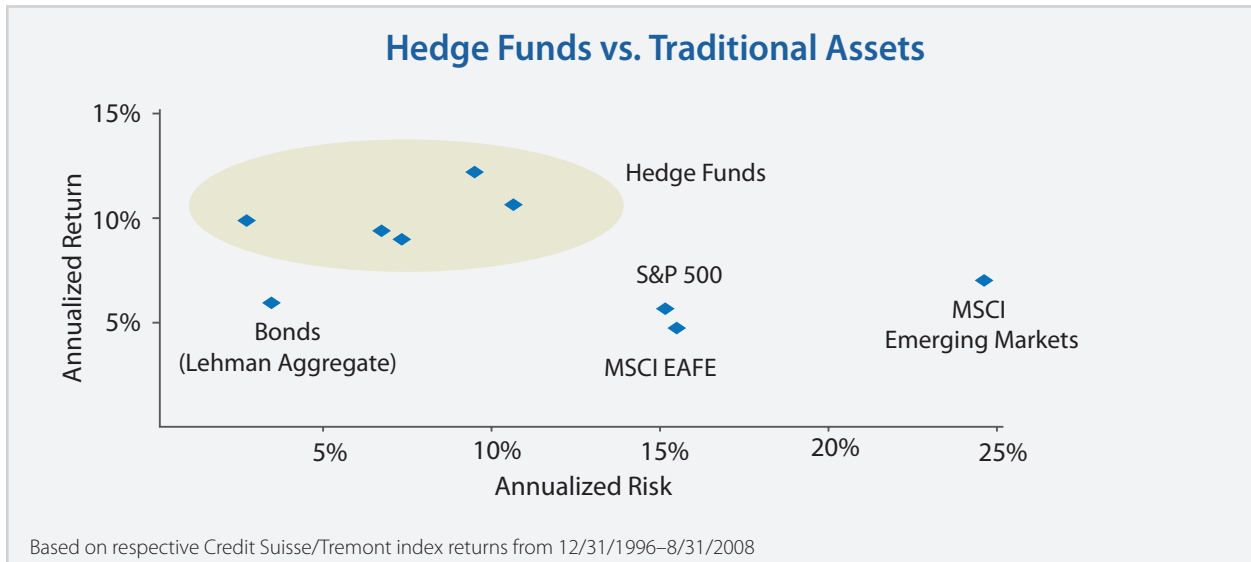


Figure 4

*Note: Each point in Figure 3 represents the annualized returns and risk (e.g., volatility) results for a distinct hedge fund investment strategy, as represented by Credit Suisse/Tremont Non-Investable Hedge Fund Index results between 1/31/94 and 9/30/08. Such investment strategies include the following: Composite; Convertible Arbitrage; Dedicated Short Bias; Emerging Markets; Equity Market Neutral; Event Driven; Distressed; Multi-Strategy; Risk Arbitrage; Fixed Income Arbitrage; Global Macro; Long/Short Equity; Managed Futures; and Event Driven Multi-Strategy.

†Sources: IndexIQ, Bloomberg. **Past performance is no guarantee of future results.**

Current Industry Issues

A confluence of issues facing the hedge fund industry have laid the groundwork—and demand—for new product innovation.

Diminishing Returns

As the industry flourishes, it has become increasingly difficult for investors to achieve top-tier performance. In fact, the major hedge fund indexes have not meaningfully or consistently outpaced the S&P 500 since 2002 (Figure 5). Even during the major market downturn of 2000, and more recently, the credit crisis of 2008, absolute performance fell short of many investors' expectations. This is precisely when true hedging should bear fruit, but the statistics said otherwise: Through September 2008, the average hedge fund was down over 9 percent year-to-date, according to Hedge Fund Research, Inc. The group added that the industry was on track for its worst performance year ever.

The problem, by most analyses, is simple: Hedge funds deliver alpha by capturing inefficiencies in the marketplace. As more funds enter the market, they all chase after the same alpha. Thus, diminished returns are almost a mathematical necessity.

	CS/Tremont Hedge Fund Index	HFR Hedge Fund Index	S&P 500
1995	21.7%	2.1%	37.6%
1996	22.2%	1.3%	23.0%
1997	25.9%	0.9%	33.4%
1998	-0.4%	2.8%	28.6%
1999	23.4%	7.7%	21.0%
2000	4.8%	2.1%	-9.1%
2001	4.4%	1.7%	-11.9%
2002	3.0%	-0.2%	-22.1%
2003	15.4%	1.9%	28.7%
2004	9.6%	1.7%	10.9%
2005	7.6%	1.8%	4.9%
2006	13.9%	1.5%	15.8%
2007	12.6%	0.5%	5.5%
2008*	-9.9%	-9.4%	-19.3%

*YTD through 9/30/08. Sources: IndexIQ, Bloomberg.
Past performance is no guarantee of future results.

Figure 5

This issue is compounded by the fact that many top hedge funds are closed to new investors, limiting access to headline returns. Studies show that the dispersion of hedge fund returns between good and bad funds varies far more widely than in asset classes like fixed-income and equity, thus significantly raising the risk that an investor will pick an under-performing fund.

With high fees across the industry, investors increasingly struggle to capture and maximize the powerful portfolio characteristics promised by hedge fund strategies.

Results Come At A High Price

As is often the case in the investment industry, these lower-than-expected returns have increased scrutiny on fees. Prior to this decade's spike in the number of hedge funds, hedge fund managers were considered an elite group, widely recognized as the "best of the best" in the investment management community. Now, many believe that the talent pool has been diluted, and that this is reflected in the lower returns.

*"[We were] a very limited, elite group that had mystery and excitement and élan," said Michael Steinhardt, one of the most successful hedge fund managers of all time, gazing back at the golden age of hedge funds in a recent article in Barron's. "Now, it's all about making money for the managers." Steinhardt dismissed recent hedge fund performance as a "disgrace."*⁶

While not everyone agrees with Steinhardt's harsh assessment, enough do. In fact, the situation has created a measurable level of cost-based investor dissatisfaction with individual managers: 75 percent of investors say it is "difficult" to find a manager who satisfies their performance objectives.⁷ A survey of institutional hedge fund investors found that high fees that disproportionately offset investment gains were viewed as the greatest threat to hedge fund investing.⁸

Recent returns bear out this less-than-sanguine assessment. Hedge funds can still deliver powerful returns and valuable portfolio characteristics, but increasingly, investors pay a premium for less-than-premium performance.

In other words, investors pay alpha fees, but get beta returns.

Headline Risk

The recent collapse of high-profile hedge funds has underscored the idiosyncratic risk of single-fund investing, especially in highly leveraged strategies. The *Wall Street Journal* called 2006 the year of the “billion-dollar blowup,” as nine funds with over \$1 billion in assets closed their doors.⁹ Leading the charge was the energy market trader Amaranth Advisors, who managed \$9 billion in assets and whose collapse made headlines around the world. Other notable funds included Archeus Capital Management’s Animi Master Fund, a Sagamore Hill Capital fund and Saranac Capital’s Citigroup Multistrategy Arbitrage/Saranac Arbitrage fund. In total, 83 funds ceased operations during 2006. That trend has continued, with Ospraia Management, Andor Capital, Turnberry Capital and many others closing their doors in 2007 and 2008. The lightly regulated nature of the hedge fund industry contributes to an increase in the likelihood of these fund-specific problems occurring, as it allows for the abuse of leverage and the layering on of large amounts of risk.

As a result of these headline-grabbing events, institutional investors have demanded more transparency and better reporting from hedge funds. In a recent survey of institutional investors, nearly 50 percent said their investment boards will require additional reporting and analysis from hedge fund managers as part of a more rigorous due diligence and risk management process.¹⁰ With the tremendous variance in performance among hedge funds, selection of a hedge fund manager is critically important (Figure 6.)

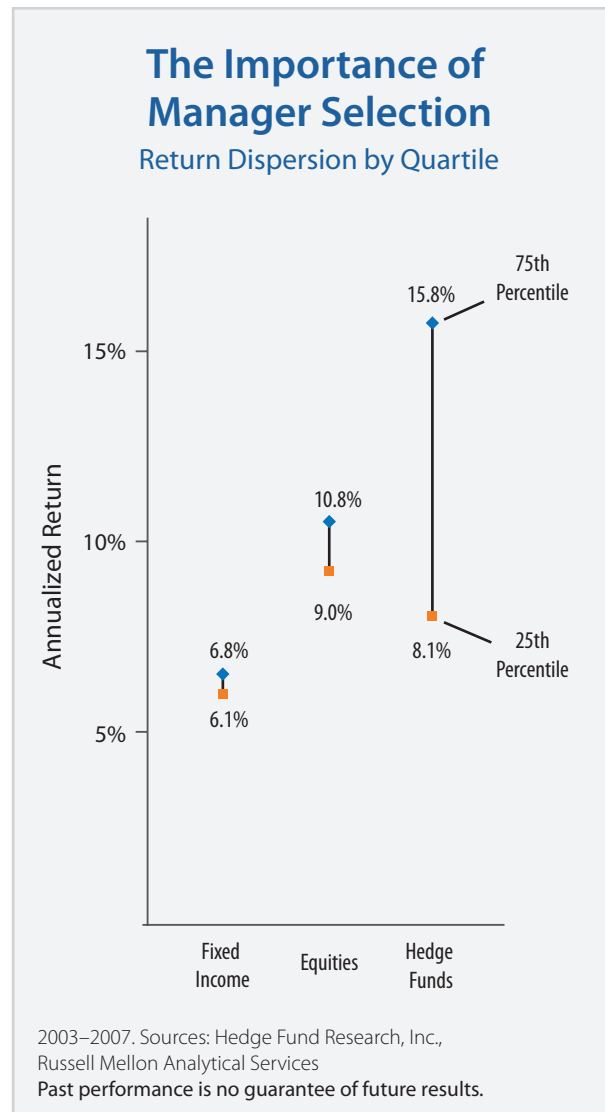


Figure 6

But with more than 10,000 hedge funds available, identifying an individual manager who can steadily produce alpha is becoming more and more difficult.

The Access Problem

Historically, hedge fund strategies have been accessible only to institutional, high net worth investors and the financial advisors that serve that industry segment, and indeed, high net worth investors do make significant allocations to alternative investments (Figure 7). In 1982, the Securities and Exchange Commission (SEC) restricted access to these funds to accredited investors (defined as investors with at least \$1 million in investment assets or a trailing income stream of over \$200,000 per year). Recently, the SEC proposed a rule that would require accredited hedge fund investors to have investment portfolios of at least \$2.5 million. This would have a significant negative impact on the number of households able to access these investments, and would leave a majority of low- to mid-tier wealthy investors underserved. At the same time, the majority of retail investors have had essentially no access to the powerful benefits achieved in hedge fund investing.

Powerful Demand Still Fuels Industry Growth

Despite these problems, there remains a huge and growing demand for hedge fund investments. One reason is that assets that traditionally provided low-correlated returns, such as real estate and international equities, have increasingly traded in line with U.S. equity markets. Hedge funds, in contrast, still offer the opportunity for low-correlation returns.

As a result, more and more financial advisors are recommending and seeking alternative investments for their clients. Industry research suggests that high net worth clients allocate upward of 20 percent of assets into alternative investment strategies—up from just 3 percent in 2000 (Figure 7).¹¹ Institutional investors have also ramped up allocations to hedge-fund-like investments. For 2007, Yale's Endowment had a 23.3% allocation to Absolute Return Strategies, and over 69%

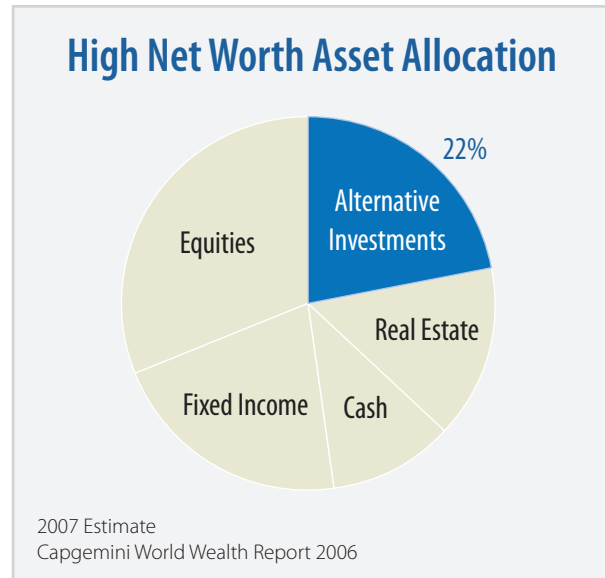


Figure 7

to Alternative Investments.* For the average investor, this number is closer to 0 percent, given the regulatory minimums required for hedge fund eligibility.

An Unprecedented Market Opportunity

The number of investors topping the \$1 million mark in financial assets continues to grow rapidly. The lower end of the millionaire market represents a significant number of the 8.7 million high net worth households, as well as a very significant percentage of \$33.3 trillion in high net worth assets. While many financial services firms seek to target the ultra-high net worth investors, the truth is that the majority of high net worth investors and assets are concentrated at the lower tiers of wealth. These populations are already underserved by alternative investments and hedge funds, and the SEC's proposal to increase the minimum asset requirement would create a huge demand-side void among alternative investment product providers. Advisors and intermediaries serving investors with up to \$2.5 million portfolios will need innovative solutions to deliver the powerful risk/return management characteristics offered by effectively implemented hedge fund strategies.

Delivering a lower-cost hedge fund solution that enables access to a wider range of potential investors could result in a huge, and previously untapped, market opportunity for investment services firms.

Evidence of the deepening hedge fund investor base is everywhere, as mainstream investment management companies launch hedge-fund-like strategies. Even though these portfolios can be costly—charging upward of 4 percent—the growth of these products shows strong support for these strategies.

Another sign that hedge fund demand has gone mainstream is that by 2007, retail reporting agencies like Lipper and Morningstar started discussing the positive portfolio construction attributes of hedge fund strategies with the general population of retail investors and advisors.

In short: The time to consider the idea of hedge funds is now.

*According to the 2007 Yale Annual Report, the Endowment had allocated 23.3% of its portfolio to Absolute Return Strategies, 18.7% to Private Equity and 27.1% to Real Assets, representing a 69.1% allocation to Alternative Strategies.

Synthetic Hedge Funds: Remaking An Asset Class

The hedge fund industry is at a powerful inflection point. Although demand grows for the types of returns and return characteristics generated by hedge funds, problems exist with current options. At the same time, the eligible pool of individual hedge fund investors could soon shrink, thanks to new SEC regulations. The end result is that many investors who want access to hedge funds can't get it, and those who do too often pay high fees for increasingly mediocre returns.

A number of firms have arrived at a specific solution to this problem: synthetic hedge funds. Synthetic hedge funds deliver hedge-fund-like returns and portfolio characteristics without the attendant risks, and do so in a structure that makes them available to the retail market at a much lower cost and with increased liquidity and flexibility.

Academic Support

Academic research suggests that hedge funds are ripe for replication. Synthetic models can reproduce the returns of hedge fund indexes using liquid securities that capture alternative investment beta and deliver hedge-fund-like portfolio characteristics. Researchers such as Professors Bill Fung and David Hsieh discuss the benefits of replicating hedge funds to help separate true alpha from passive beta.¹² Harry Kat and Helder Palaro first discussed their technique for hedge fund replication in 2005,¹³ and Kat subsequently released a series of findings on the business of synthetic hedge funds. At the Massachusetts Institute of Technology (MIT), Andrew Lo and Jasmina Hasanhodzic reproduced the results for a pool of hedge fund of funds in a 2006 study.¹⁴

To date, two types of synthetic strategies have come to market. The first strategy, which uses factor models, aims to track historical returns of hedge fund indexes using a dynamic portfolio of more-liquid securities: Early models employ regression-based analysis to combine long/short equities, bonds, commodities, currencies and derivatives.

The second strategy—trade replication—targets the pool of assets actually held by hedge fund managers, essentially creating passively managed hedge funds.

Both approaches have limitations. Under the trade replication model, current algorithms have difficulty achieving similar performance to underlying hedge fund returns, especially within the broader strategies. Factor models do a better job, but they rely on complicated derivative strategies that share some of the familiar risk, complications and lack of transparency. Neither is really a better mousetrap, each is just painted in a different color.

Building on the factor-based approach, IndexIQ proposes a third approach. Based on the work of the company's chief investment strategist, Professor Robert Whitelaw of New York University, this third variation follows the factor method in principle, but implements its strategy primarily using highly liquid, publicly available ETFs. IndexIQ's strategy addresses some of the shortcomings highlighted by other academics in the hedge fund replication community.

The IndexIQ strategies have several unique features:

- They employ a bottom-up, modular approach, first replicating underlying hedge fund investment styles, then replicating a composite, removing "noise" in the process.
- Each underlying style can be used as the basis for investment products.
- Both the analytical process and the portfolio construction process use liquid ETFs, providing complete transparency throughout the process.
- The strategies adjust for autocorrelation (described on page 14).

IndexIQ's Synthetic Hedge Fund Solutions

The IQ Hedge Synthetic Hedge Fund Strategies are a series of proprietary, rules-based quantitative solutions designed to deliver the performance characteristics of specific hedge fund strategies to all investors. The IQ Hedge investment process relies on proprietary academic research to create portfolios of highly liquid ETF securities that deliver the risk/return profile of distinct hedge fund investing styles. Because they use primarily highly efficient ETFs instead of more-complex or opaque derivatives, the IQ Hedge™ strategies seek to be able to deliver hedge-fund-like results to a wider range of investors, with significantly lower fees and greater transparency than direct hedge fund investments.

Hedge fund replication strategies may solve many of the industry's most significant problems, and can address the huge and growing demand gap both from advisors and investors outside the ultra-high net worth community.

A Unique Approach

IndexIQ has developed a proprietary model that leverages publicly available information about hedge fund strategies to create indexes delivering similar returns to six core hedge fund investment strategies, plus an additional composite index reflecting the returns of hedge fund strategies as a whole.

This unique system selects from the available array of ETFs covering commodities, currencies, stocks, bonds and real estate, by using distinct risk/return and correlation metrics, and rebalances the index monthly. Benchmarked against the investable hedge fund indexes from CS/Tremont and Hedge Fund Research Inc., the strategies seek to capture the risk/return characteristics of the core hedge fund strategies, such as long/short, market-neutral, event-driven and more.

An important characteristic of the IQ Hedge strategies is that they incorporate the returns of noninvestable indexes. Focusing

only on investable hedge fund indexes would exclude most of the best hedge funds in existence, because the best hedge funds are often closed to new investors. But these are precisely the returns that investors truly want. The IQ Hedge synthetic approach considers these returns when defining the target-return profile.

At the same time, the use primarily of ETFs means that any future investable products tied to these strategies should themselves be more liquid, more attractively priced and more highly transparent than other replication strategies relying on derivative contracts and other less-liquid and less-transparent instruments.

The IndexIQ indexes use an innovative bottom-up approach, first replicating six underlying hedge fund strategies and then rolling them up into a composite (or fund-of-funds) product.

Benefits Of The IQ Hedge Strategies

One of the advantages of an ETF-based replication strategy is that it offers improved transparency and real-time pricing compared with traditional hedge funds. This clarity of knowing what's inside the index with certainty and frequency means sophisticated investors can more accurately design their total portfolios and analyze risk and correlation. The IQ Hedge solutions also democratize access to hedge fund returns, bringing a unique, low-cost risk management solution to a much broader range of investors than ever before.

For investors seeking to maximize returns while accepting additional volatility, the use of highly liquid ETFs offers an additional advantage: leverage. Leveraging actual hedge funds can be a difficult and very risky process, but the ability to quickly de-lever and unwind an underlying ETF position means that firms should be able to execute these strategies using IQ Hedge products. The

process also will be much more straightforward for lenders and providers of leverage, who should be much more comfortable with the underlying liquidity, and will push overall transaction costs lower as a result.

The IQ Hedge Solutions Offer ...

- **Alternative Investment Returns:** Risk-adjusted returns and key ratios comparable to hedge fund returns
- **Low Fees:** Fees significantly lower than those prevalent in the hedge fund industry
- **Liquidity:** Daily liquidity versus various lockup restrictions for hedge funds; substantial leveraging opportunities
- **Risk Mitigation:** Reduces manager-specific risk inherent to active hedge fund management and provides attractive tools to reduce portfolio risk
- **Transparency:** Greater transparency of underlying portfolio components
- **Real-Time Pricing:** Indexlike, real-time delivery of market values
- **Accessibility:** Available to all investors

IQ Hedge Investment Strategy—How It Works

In developing each of the synthetic hedge fund strategies, IndexIQ examines key performance attributes for each hedge fund series of returns relative to the pool of potential asset classes. The returns on the selected asset classes are then analyzed using regression techniques to determine the asset class mixes that most effectively replicate each strategy. This allocation is adjusted on a monthly basis using the broad asset classes of ETFs across equity, fixed income, commodities, real estate and currency investments.

Figure 8 displays sample asset class mixes for the IQ Hedge Multi-Strategy Composite Index. The weights of the 13 core asset classes, each represented by highly liquid ETF securities, are dynamically managed to track the corresponding hedge fund index. The sample allocations show the type of changes and long/short techniques that can be incorporated to best provide hedge-fund-like characteristics. Collectively, these positions would create a portfolio that could be benchmarked against the CS/Tremont Blue Chip Index or the HFR Index with the goal of providing comparable, if not better, returns at lower risk.

Asset Class	Index	Ticker	Sample Allocation 1	Sample Allocation 2
Fixed Income	Lehman Brothers U.S. Aggregate Bond Index	BND	37.37%	16.45%
Fixed Income	iBoxx\$ Liquid Investment Grade Index	LQD	5.11%	15.03%
Fixed Income	Lehman Brothers Short U.S. Treasury Index	SHV	19.34%	14.85%
Fixed Income	Deutsche Bank Emerging Market U.S. Dollar Balanced Liquid Index	PCY	1.93%	10.06%
Fixed Income	iBoxx\$ Liquid High Yield Index	HYG	6.50%	4.14%
Fixed Income	Lehman Brothers U.S. Treasury TIPS Index	TIP	0.68%	0.11%
Commodity	DB Liquid Commodity Index - Optimum Yield Excess Return	DBC	1.17%	5.07%
Currency	US\$ vs. Euro	FXE	3.61%	2.93%
Currency	Deutsche Bank G10 Currency Future Harvest Index	DBV	5.22%	0.84%
Equity	MSCI Emerging Markets Index	VWO	16.01%	15.05%
Equity	MSCI EAFE Index	EFA	1.06%	12.97%
Equity	Russell 2000 Index	TWM	1.26%	0.86%
Real Estate	MSCI US REIT Index	VNQ	0.00%	1.65%
Real Estate	Dow Jones U.S. Real Estate Index	SRS	0.73%	0.00%

Source: IndexIQ

Figure 8

Results And Analytics

The IQ Hedge Strategies aim to capture the benefits of hedge fund investing in a low-cost package. Figure 9 details the performance of the seven strategies versus the comparable investable index. “Investable” indexes include only those hedge funds that are open to new investors, and are considered the most appropriate benchmarks for comparison.

As the trailing five-year performance shows, each of the strategies has been able to not only track its benchmark index, but also often provides enhanced performance, risk and portfolio characteristics.

These results position each of the seven strategies further out on the risk/return curve, giving them higher Sharpe ratios than their benchmarks.

The performance appendix to this whitepaper provides an interesting and instructive look at the one-year and three-year returns as well. Of note is that the variance of returns between the strategy and the benchmark index is larger over a one-year period than over three years. This is partially by design—the IQ Hedge strategies consider the long-term goals of the hedge fund strategies—and partially a reflection of the failure of hedge funds to perform as promised over the past year: The CS/Tremont Non-Investable Index posted a -9.86 percent return in the first nine months of 2008. The IQ Hedge indexes performed closer to the “goals” of a classic long/short approach during a bear market. Also, IQ Hedge strategies incorporate the performance characteristics of the most successful hedge funds, which are closed to new investors and which more likely performed better over the past year than their less-famous peers.

	5-Year Performance			
	Ann. Return	Ann. Volatility	Sharpe Ratio	Risk/Return
IQ Hedge Composite Beta Index	6.08%	5.27%	0.57	1.15
CS/Tremont Blue Chip Index (Investable)	2.91%	5.36%	-0.01	0.54
HFRX Global Hedge Fund Index	1.81%	5.78%	-0.19	0.31
IQ Hedge Long/Short Equity Beta Index	4.68%	7.79%	0.23	0.60
CS/Tremont Long/Short Equity (Investable)	1.86%	8.42%	-0.10	0.22
HFRX Equity Hedge Index	1.31%	7.28%	-0.21	0.18
IQ Hedge Market Neutral Beta Index	3.77%	2.13%	0.31	1.76
CS/Tremont Equity Market Neutral (Investable)	2.07%	2.37%	-0.42	0.87
HFRX Equity Market Neutral Index	1.50%	3.29%	-0.47	0.46
IQ Hedge Global Macro Beta Index	3.68%	5.03%	0.13	0.73
CS/Tremont Global Macro (Investable)	1.65%	7.69%	-0.15	0.22
HFRX Macro Index	3.76%	9.55%	0.11	0.39
IQ Hedge Event-Driven Beta Index	7.78%	6.25%	0.74	1.25
CS/Tremont Event Driven Index (Investable)	3.18%	5.80%	0.04	0.55
HFRX Event Driven Index	2.97%	6.33%	0.01	0.47
IQ Hedge Emerging Markets Beta Index*	12.69%	9.41%	1.00	1.35
CS/Tremont Emerging Markets (Investable)	12.23%	10.61%	0.86	1.15
IQ Hedge Fixed Income Arb Beta Index*	3.80%	4.21%	0.18	0.90
CS/Tremont Fixed Income Arb (Investable)	0.52%	5.12%	-0.47	0.10

October 2008–September 2008 *Comparable HFRX index is not available.

Figure 9

Sources: IndexIQ, Bloomberg. Index performance is for illustrative purposes only and does not represent actual Fund performance. One cannot invest directly in an index. IQ Hedge Index performance information prior to October 31, 2007 is based on a hypothetical back test based on calculations of what would have been the exposure and returns of the Index had it existed at that time, which has inherent limitations. **Past performance is no guarantee of future results.**

In the wake of the market turmoil of late 2008, many hedge funds are facing a crisis of conscience. Hedge funds offer an asymmetrical fee structure—there is a big incentive to perform, but no penalty for failing to deliver results. Because of this, hedge funds that have under-performed will be challenged not only to retain investors, but reward their staffs. One option is to close existing funds and open new ones. By doing so, they would not need to overcome the high watermarks to reap future rewards—good for hedge fund managers, but arguably not so good for investors.

It's worth noting that both the benchmark and IQ Hedge returns are net of underlying fund fees (hedge fund fees and ETF fees as applicable). Thus, although the IQ Hedge results do not include management fees of a hypothetical ETF or mutual

	5-Year Performance*		
	IQ Hedge Composite Beta Index	CS/Tremont Blue Chip Index (Investable)	HFRX Global Hedge Fund Index
Annualized Returns	6.08%	2.91%	1.81%
Annualized Std Dev	5.27%	5.36%	5.78%
Risk/Return	1.15%	0.54%	0.31%
Sharpe Ratio	0.57%	-0.01%	-0.19%
Largest Month Gain	3.21%	2.64%	2.82%
Largest Month Loss	-5.57%	-7.80%	-6.90%
Average Loss	-1.45%	-1.23%	-1.41%
Loss Std Dev	1.43%	1.66%	1.44%
Average Gain	1.21%	1.05%	1.21%
Gain Std Dev	0.73%	0.63%	0.72%
Downside Deviation	1.03%	1.21%	1.26%
Ann. Sortino Ratio(a)	1.69%	0.72%	0.45%
Ann. Tracking Error	N/A	3.52%	3.70%

*Through September 2008
(a) vs. a minimum acceptable return of zero

Figure 10

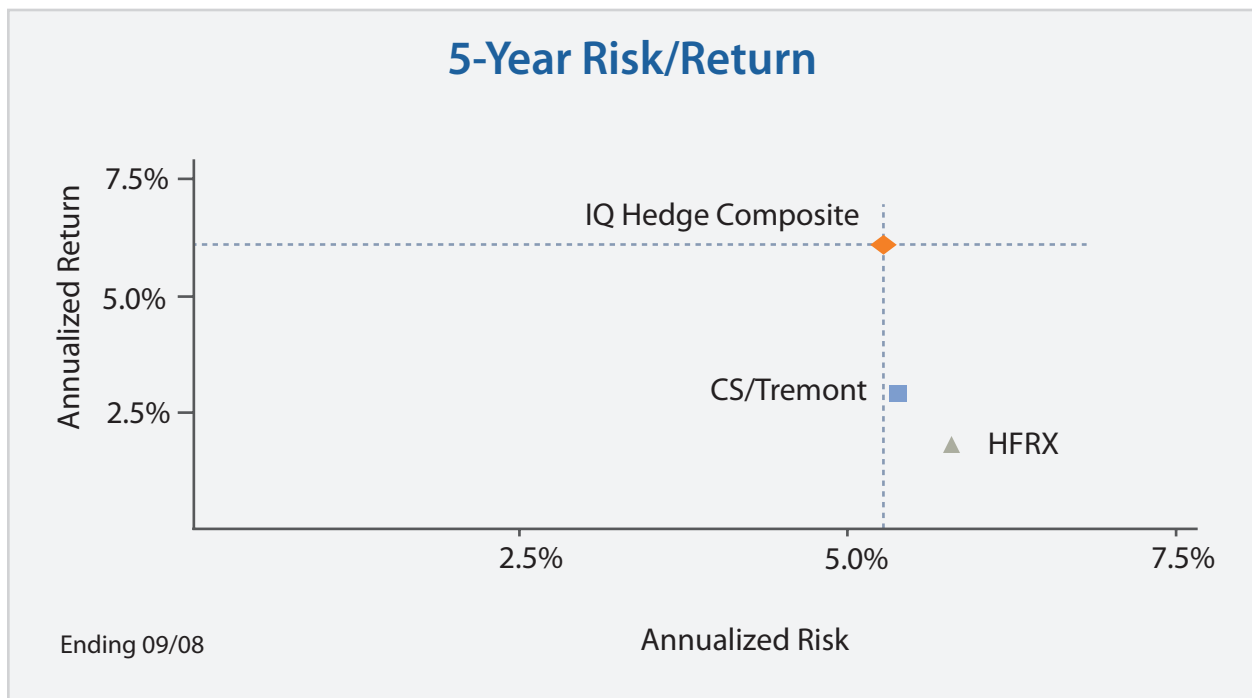


Figure 11

Sources for Figure 10 and 11: IndexIQ, Bloomberg. Index performance is for illustrative purposes only and does not represent actual Fund performance. One cannot invest directly in an index. IQ Hedge Index performance information prior to October 31, 2007 is based on a hypothetical back test based on calculations of what would have been the exposure and returns of the Index had it existed at that time, which has inherent limitations. **Past performance is no guarantee of future results.**

fund following the strategy, the low-fee structure of the IQ Hedge products should allow them to achieve their goal of delivering similar risk, return and correlation characteristics as the hedge fund benchmarks, even after adjusting for fees.

IQ Hedge Composite In Focus

The results of the Composite Strategy underscore the power of the IndexIQ strategies to capture, synthesize and enhance the results of each target hedge fund investment strategy, beyond simple replication (Figures 10 and 11).

Using a bottom-up approach to portfolio construction, the IQ Hedge Composite Strategy is able to capture and enhance the risk/return characteristics of the entire hedge fund universe.

IQ Hedge: Tackling Correlations

Synthetic hedge funds address many common issues in the hedge fund space, including idiosyncratic manager risk, high fees and the difficulty of separating true alpha from beta (and paying appropriately for both types of returns). But sophisticated investors need to pay attention to one critical factor when considering the inclusion of synthetic hedge funds in their portfolio: correlation.

Correlation is an extremely important issue for the hedge fund community. Most hedge fund investors seek the benefits of alternative investments in the context of a larger core portfolio containing both bonds and stocks. They look to hedge funds to provide additional, uncorrelated returns.

A recent paper released by Harry Kat¹⁵ targets many of the early-stage hedge fund replicators, documenting their higher-than-desired correlation with the broad market. Unsurprisingly, the replicators correlate more closely with equities, because rep-

licators use market-based instruments and do not have access to the full array of investment possibilities that hedge funds consider. As a result, investors searching for a synthetic hedge fund should carefully consider the correlation performance of those products.

At a time when international equities correlate with U.S. stocks by more than 90 percent, the correlation results for the IQ Hedge Strategies are intriguing. For instance, as expected and desired, the Fixed Income Arbitrage and Market Neutral strategies have the lowest correlation to the S&P 500, at just 0.35 and 0.40, respectively. But even the Long/Short Equity correlation at 0.66 is still lower than the recent correlation between U.S. and international equities—traditionally thought of as a classic pair for creating diversified market exposure.

Adding these low-correlated returns to the portfolio may create more diversification

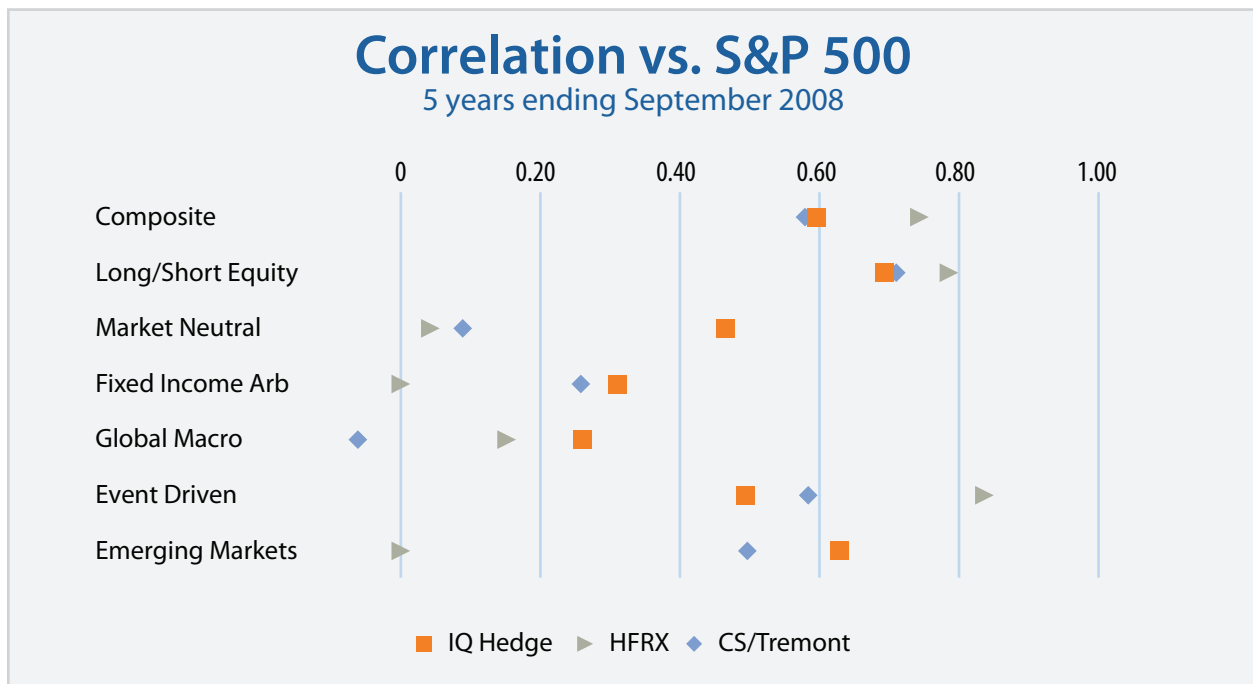


Figure 12

Sources: IndexIQ, Bloomberg. Index performance is for illustrative purposes only and does not represent actual Fund performance. One cannot invest directly in an index. IQ Hedge Index performance information prior to October 31, 2007 is based on a hypothetical back test based on calculations of what would have been the exposure and returns of the Index had it existed at that time, which has inherent limitations. **Past performance is no guarantee of future results.**

and, ultimately, higher risk-adjusted returns. The world's leading investors—such as David Swenson, CIO of the Yale Endowment—make large allocations to the hedge fund space (23 percent of the Yale Endowment was invested in hedge funds in 2007), precisely because these low-correlation returns can boost profits during difficult times.

Addressing Autocorrelation

Autocorrelation is a widely discussed aspect in the analysis of hedge fund replication strategies. Some of the obvious allure of the space is in capturing the benefits of low correlation of hedge fund assets relative to broad equity market indexes. Yet recent research shows that some of this low correlation results from inaccurate or stale pricing of illiquid securities.¹⁶ When older prices are used, it skews the timing of portions of period returns behind broader market trends. In a 2001 paper, Asness, Krail and Liew examined this phenomenon, documenting that reported hedge fund index returns depend not only on current period returns, but also on the returns of prior periods as stale prices catch up to the market.¹⁷ In other words, pricing part of today's portfolio with yesterday's prices makes apples look like oranges.

The paper hypothesized that by not marking to market certain assets, hedge funds—and therefore hedge fund indexes—displayed positive autocorrelation. Lags in accounting and price reporting would certainly have a notable effect on the distribution of hedge fund period returns. While this lag would not impact compounded geometric returns, it is very possible that betas and volatilities could be understated if some securities in the portfolio were not marked in a timely manner. Whether it is a natural product of trading in less-liquid securities or a conscious effort to smooth results, positive autocorrelation is something that must be addressed in hedge fund replication strategies.

Currently, hedge fund industry standards for pricing and performance reporting may understate risk and correlation results.

To the extent that this lagged marking is widespread, hedge fund risk—based on historic monthly data—would be *understated*. It also follows that historical risk-adjusted performance would be *overstated*. This presents an additional challenge in creating a synthetic hedge fund with low correlation to the overall market: Most of the current indexlike replication strategies make no attempt to correct for autocorrelation.

The IndexIQ approach is different. The IndexIQ model specifically addresses and corrects for the industry's autocorrelation problem. It is the first solution to adjust reported returns for this issue. Although results may be at the cost of increased risk and correlation numbers, relative to the published returns, they will better reflect the actual investment characteristics of hedge fund strategies. The IndexIQ strategies focus on replicating and enhancing true hedge fund returns, and through this process, they can derive and synthesize those true returns. After all, investors expect synthetic hedge funds to provide the return not of a hedge fund *index*, but hedge funds *themselves*.

Conclusion

The hedge fund industry, which has grown rapidly over the last 15 years, is in the midst of an unprecedented product evolution. With an explosion both in assets under management and the number of funds, it has become increasingly difficult for hedge funds to generate the alpha necessary to justify their high relative fee structure.

Supported by recent academic research and advanced modeling techniques, hedge fund replication strategies have entered the market in full force. These products synthesize the results of the hedge fund market and fill substantial gaps in supply and demand by delivering hedge-fund-like results to a broader audience of investors. Hedge fund replication strategies promise to deliver the powerful investment characteristics of hedge funds at a much lower cost and with additional liquidity and transparency. They also deliver these benefits without the idiosyncratic risk of individual hedge fund investing.

IndexIQ's IQ Hedge Strategies go one step further. By using a unique analytical process and an implementation strategy based primarily on highly liquid ETFs, these strategies have the potential to deliver enhanced returns and superior portfolio characteristics versus their benchmarks (and simplistic replication strategies), while still fully removing the manager-specific risk that is prevalent across the hedge fund industry.

The IndexIQ process also addresses key industry concerns, generating hedge-fund-like results in a more-accessible, highly liquid and low-cost package. Finally, the IQ Hedge Strategies are the first to address the problem of autocorrelation in reported returns.

The IQ Hedge suite of indexes seeks to democratize access to an important asset class, letting all investors benefit from the low correlation and steady returns that hedge funds can deliver to the market—with lower costs, greater transparency and higher liquidity than hedge funds themselves.

Definitions

Alpha is a measure of a portfolio's actual excess returns and expected performance, given its level of risk (as measured by Beta).

Beta reflects the sensitivity of a portfolio's return to fluctuations in a particular market (in this case, as measured by the S&P 500 Index).

Volatility is a measure of the range of a portfolio's performance, meaning the degree to which it rises above and falls below its average return.

Return/Volatility is a portfolio's annualized 5-year return divided by its annualized 5-year standard deviation.

Sharpe Ratio is a measure of a portfolio's risk-adjusted performance (return per unit of risk).

Correlation is a measure of the relationship between two variables (e.g., portfolio returns and the S&P 500 Index).

Up/Down Capture is a measure of a portfolio's performance in up/down markets relative to a benchmark index (in this case, the S&P 500 Index).

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Performance Appendix

	1-Year Performance				3-Year Performance				5-Year Performance			
	Return	Volatility	Sharpe Ratio	Risk/Return	Return	Volatility	Sharpe Ratio	Risk/Return	Return	Volatility	Sharpe Ratio	Risk/Return
IQ Hedge Composite Beta Index	-7.99%	7.65%	-1.32	-1.04	3.58%	5.91%	-0.02	0.61	6.08%	5.27%	0.57	1.15
CS/Tremont Blue Chip Index (Investable)	-10.92%	9.39%	-1.40	-1.16	1.25%	6.56%	-0.36	0.19	2.91%	5.36%	-0.01	0.54
HFRX Global Hedge Fund Index	-11.43%	9.18%	-1.50	-1.25	0.64%	6.94%	-0.42	0.09	1.81%	5.78%	-0.19	0.31
IQ Hedge Emerging Markets Beta Index*	-9.75%	10.46%	-1.13	-0.93	7.36%	9.66%	0.39	0.76	12.69%	9.41%	1.00	1.35
CS/Tremont Emerging Markets (Investable)	-15.03%	13.55%	-1.28	-1.11	6.12%	12.07%	0.24	0.51	12.23%	10.61%	0.86	1.15
IQ Hedge Fixed Income Arb Beta Index*	-4.14%	6.44%	-0.95	-0.64	3.15%	4.82%	-0.12	0.65	3.80%	4.21%	0.18	0.90
CS/Tremont Fixed Income Arb (Investable)	-6.53%	9.71%	-0.86	-0.67	0.52%	5.92%	-0.53	0.09	0.52%	5.12%	-0.47	0.10
IQ Hedge Global Macro Beta Index	-8.06%	8.33%	-1.21	-0.97	2.32%	5.87%	-0.23	0.39	3.68%	5.03%	0.13	0.73
CS/Tremont Global Macro (Investable)	-2.17%	16.19%	-0.19	-0.13	0.84%	9.72%	-0.26	0.09	1.65%	7.69%	-0.15	0.22
HFRX Macro Index	8.60%	14.34%	0.50	0.60	5.06%	11.42%	0.16	0.44	3.76%	9.55%	0.11	0.39
IQ Hedge Long/Short Equity Beta Index	-18.75%	12.42%	-1.76	-1.51	-0.27%	8.98%	-0.41	-0.03	4.68%	7.79%	0.23	0.60
CS/Tremont Long/Short Equity (Investable)	-21.49%	13.81%	-1.82	-1.56	-3.21%	9.76%	-0.67	-0.33	1.86%	8.42%	-0.10	0.22
HFRX Equity Hedge Index	-14.73%	11.59%	-1.49	-1.27	-0.32%	8.68%	-0.43	-0.04	1.31%	7.28%	-0.21	0.18
IQ Hedge Market Neutral Beta Index	-2.70%	3.00%	-1.58	-0.90	3.65%	2.45%	-0.08	1.49	3.77%	2.13%	0.31	1.76
CS/Tremont Equity Market Neutral (Investable)	-5.89%	3.25%	-2.48	-1.81	1.71%	2.92%	-0.71	0.59	2.07%	2.37%	-0.42	0.87
HFRX Equity Market Neutral Index	1.08%	4.51%	-0.20	0.24	3.17%	3.83%	-0.16	0.83	1.50%	3.29%	-0.47	0.46
IQ Hedge Event-Driven Beta Index	-4.03%	7.62%	-0.77	-0.53	5.06%	6.47%	0.21	0.78	7.78%	6.25%	0.74	1.25
CS/Tremont Event Driven Index (Investable)	-13.76%	9.59%	-1.70	-1.44	1.78%	7.04%	-0.25	0.25	3.18%	5.80%	0.04	0.55
HFRX Event Driven Index	-14.64%	9.31%	-1.87	-1.57	0.55%	7.45%	-0.40	0.07	2.97%	6.33%	0.01	0.47

October 2008–September 2008 *Comparable HFRX index is not available.

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About IndexIQ

IndexIQ is the leading developer of index-based alternative investment solutions that combine the benefits of traditional index investing with the risk-adjusted return potential sought by the best active managers. The company's philosophy is to democratize investment management by making institutional class investment strategies available to all investors in low-cost, liquid, transparent and tax-efficient products. IndexIQ strategies are marketed through the company's proprietary investment products and select partnerships with leading global financial institutions. Additional information about the company and its products can be found at www.indexiq.com.

Key Contacts at IndexIQ:

- Adam S. Patti, CEO
- Anthony B. Davidow, EVP – Head of Distribution
- Gregory D. Bassuk, COO
- David L. Fogel, EVP

IndexIQ

800 Westchester Avenue, Suite N-611
Rye Brook, NY 10573
Phone: (888) 934-0777

Author Biographies

Professor Robert F. Whitelaw, Ph.D. Chief Investment Strategist

Robert Whitelaw is the Edward C. Johnson 3d Professor of Entrepreneurial Finance and Chairman of the Finance Department at the Leonard N. Stern School of Business, New York University. He has a Ph.D. in Finance from Stanford University, Graduate School of Business, and a B.S. in Mathematics from MIT. Professor Whitelaw teaches corporate and managerial finance in the M.B.A. and undergraduate programs. He also teaches fixed-income securities, equity investments, derivatives and risk management at the executive level, and asset pricing at the doctoral level.

Dr. Whitelaw's research interests include the relation between risk and return in the stock and bond markets, the pricing and hedging of fixed-income derivative securities, risk measurement and management, and market efficiency. His papers have been published in academic journals such as the *Journal of Finance*, the *Journal of Financial Economics* and the *Review of Financial Studies*, as well as practitioner journals such as the *Journal of Derivatives*, the *Journal of Fixed Income*, and *Risk*. In addition, he is a research associate at the National Bureau of Economic Research (NBER), Program on Asset Pricing and a past associate editor of the *Review of Financial Studies* and the *Journal of Finance*.

Dr. Whitelaw's work experience includes two years spent in the Public Finance Department at Shearson Lehman, where he was involved in structuring tax-exempt bond financings. He also provides consulting services to corporations and financial institutions, specializing in pricing and hedging complex securities, risk management and equity trading.

Salvatore J. Bruno Senior Vice President, Head of Research and Product Development

Sal joined IndexIQ from Deutsche Asset Management (DeAM), where he held a number of senior positions. Most recently, Sal was a Director and Portfolio Manager for a U.S. large-cap core equity mutual fund with approximately \$6 billion in assets under management. The fund's strategy combined traditional fundamental equity research with a multifactor quantitative model in a disciplined, risk-managed process.

Prior to becoming Portfolio Manager, Sal was the Head of Advanced Quantitative Research at DeAM. In this role, he directed the quantitative research effort to support numerous products including quantitative equity strategies, global asset allocation, passive risk-based alternative beta portfolios, and probabilistic efficient frontiers. He also co-developed the strategy to combine fundamental and quantitative research into a single portfolio. This strategy became widely used to manage several equity strategies within DeAM, including the mutual fund for which Sal would subsequently become a portfolio manager.

As the Global Head of Active Equity Quantitative Strategies for DeAM, Sal managed a team of 13 analysts around the world. The team provided quantitative tools and support for the Active Equity fundamental portfolio managers and research analysts on a variety of topics including quantitative equity models, portfolio construction, risk management, and performance measurement and analysis.

Sal earned a Bachelor of Science degree in Applied Economics & Business Management from Cornell University and an M.B.A. in Finance & Economics from New York University Leonard N. Stern School of Business. He is a member of the NYSSA and the CFA Institute.

Anthony B. Davidow, CIMA Executive Vice President, Head of Distribution

Tony joined IndexIQ from Morgan Stanley where he was a Managing Director and Director of Sales and Training for Morgan Stanley's Consulting Services Group. He helped build Morgan Stanley's \$140 billion Consulting Services Group Business. Tony was responsible for delivering solutions across the market segments – Institutional, Private Clients and Retail. He joined Morgan Stanley in 1995, and originally was responsible for Morgan Stanley's Institutional Consulting Services business. He was later the Director of Business Development for Graystone Wealth Management Services, and a member of the firm's Client Strategy Group.

Prior to joining Morgan Stanley, Tony spent five years in Kidder Peabody's Asset Management business, where he was responsible for their NOVA Consulting business and Director of the Portfolio Services Group. He also spent time as Analyst on the American Stock Exchange, Inc. Tony began his career 25 years ago working for a family office.

Tony is a graduate of Bernard Baruch University, with a BBA in Finance and Investments. Tony received his Certified Investment Management Analyst (CIMA) designation from the Investment Management Consultants Association and the Wharton School of the University of Pennsylvania. Tony currently serves on the IMCA Board of Directors, and serves as the Board Liaison to the National Conference Committee. He is a member of the International Who's Who of Professionals. Tony is a frequent industry speaker on the institutional and high net worth marketplace, as well as the author of several white papers on investment trends and opportunities.

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IndexIQ

800 Westchester Avenue, Suite N-611

Rye Brook, NY 10573

info@indexiq.com

Phone: (888) 934-0777

www.indexiq.com