

Where Academics/Practitioners Get It Wrong

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Introduction

While it is impossible in a short synopsis to convey all the pros and cons of hedge fund research, the purpose of this open letter is to once again tilt at the “hedge fund research” windmill. Why now? I recently responded (Schneeweis and Kazemi, 2012) to a book (Lack, 2012) which promoted the belief that hedge funds provided no real benefit to the average investor over the past decade. I was surprised to read many of the misconceptions held by the author, as well as the misconceptions about hedge funds presented in many of the articles cited by the author. In this article, I hope to remind individuals of some of the basic problems and misconceptions in hedge fund research. After over twenty years of direct academic hedge fund research, as well as over thirty years of direct investment experience, including ten years as a partner in a firm which ran a series of independent commodity, hedge fund and managed futures funds, I remain astounded as to the assumptions that practitioners and academics make when conducting research in the hedge fund area. For example, every three or four years, an article or book appears which attempts to paint the industry with a broad brush of poor performance, and suggests that the rise in AUM in the industry could therefore only be accomplished by managers overstating the benefits of their underlying strategies. Given the sophistication of the investment industry, even in an imperfect information market, the very fact that over the past twenty years AUM in the industry has

reportedly grown from under \$100 billion to over \$2 trillion is indicative that many investors view the strategies which underlie the hedge fund umbrella as beneficial in their expected return/risk investment management decisions.

This open letter is addressed to new researchers, as well as to those already committed to a research direction. I appreciate that “success” in both practitioner and academic research is based on AUM (Assets under Management or Articles under Management). How one achieves that goal is rarely criticized. For academics, if a reviewer passes it then it must be correct (note this article is not a damnation of the academic review process as the founding editor of the *Journal of Alternative Investments* I rely on the kindness of the reviewers). I am constantly amazed as to what academics or practitioners believe to be the facts underlying the hedge fund industry. For years, a major part of the annual research conference sponsored by CISDM was a seminar on “Where Academics Got It Wrong” (including my own research errors). This paper only summarizes a few of the areas discussed during those CISDM presentations. There are many areas not covered in this note. I look forward to other academics and practitioners sending me their own findings. At the very least, I hope the concerns addressed herein will open up new research that may offer new insights.

2. General Issues in Hedge Fund Research

The purpose of this section is to summarize several of the major points addressed at a

series of seminars and conferences offered by the research center (CISDM) I have headed over the past fifteen years. Not everyone will agree with the questions or the content, however, the issues are real and the responses offered in many cases provided an alternative look at research conducted on the hedge fund industry. We all should be reminded that:

2.1 Simple Cross-sectional Tests Are A Sample of One: Results based on a single historical time period represent a sample of one and should not be used as a simple case for or against investment in any asset class or investment strategy. In the end, every portfolio results from a set of decisions (discretionary or systematic (algorithmic)) with the caveat that even the discretionary processes often have a systematic element to them. The resulting portfolio is a collection of assets and that collection of assets will make money in some market conditions and lose money in others. I have never invested in a manager who could not tell me the simple basis for the construction of his current portfolio (and if that construction process differed from the past), and in what market conditions his current portfolio would lose money even if it never lost it in the past. In regard to past data, what was important (especially for funds for which I did not have daily positions) was that the fund lost money when it should and made money when it should. It amazes me the degree to which academic research promotes the idea that hedge fund managers have daily or even monthly flexibility to dramatically change their portfolio as if they were active discretionary traders. One should be aware of the inconsistency between assuming active discretionary hedge fund managers and then proceeding to use various statistical tests that are based on a consistency of hedge fund style and judgment. At the very least, readers would be helped by research which includes a series of footnotes or a section at the end of each article which emphasizes the potential data or methodological shortcomings in the presentation.

2.2 Representativeness of Historical Data: One of the primary problems in academic and practitioner research is that they are primarily historical presentations that often tell us little as to current hedge fund activities or current problems in hedge fund management. For example, articles published in 2011 were often written in 2008, based on data ending in 2006. In short, academic research is often five years or more out of date when it is published. I appreciate the value of testing hypotheses on historical data, however, one should be careful not to cherry pick the time period of analysis (at least acknowledge the potential biases in the use of that period of analysis) or to cherry pick past research without at least a footnote that the cited articles, while instructive at the time of publication, have become a little dated over time. For example, in an article forthcoming in a major financial journal, the author(s) states "Indeed, more recent studies provide a more skeptical view of hedge fund returns, finding smaller and only sporadic alpha (e.g., Fung et. al., 2008; Naik et. al, 2007) or no outperformance at all (e.g., Amin and Kat, 2003; Aragon, 2007; Griffin and Xu, 2009)." These "recent" results are almost 9 years out of date with outdated definitions of alpha (excess return on a set of non-investible factors is not alpha) or outdated methodology (e.g., simple cross-sectional tests). I often see references to old articles of mine that were fine for their time, but now are of little direct relevance to today's markets. I do not know how to get the litany of past articles (except those directly related to the current issue and only those for which the current research hopes to refine) out of the process. I am guilty of it myself, but constant referral to past research which have a host of data and empirical issues does a disservice to the common reader who may be lead to believe that if it is cited it must be correct.

2.3 Hedge Fund Index-based Performance: Considerable research is based on the use of hedge fund "index" data as indicative of fundamental hedge fund and market relationships. Composite hedge fund indices may offer little as to the actual or expected performance of an individual hedge fund. Moreover, research based on

historical hedge fund indices may tell us little as to current hedge fund strategy relationships with market factors. The hedge fund industry has evolved dramatically over the past twenty years. While discussed in greater detail later in this presentation, focusing on the returns of a composite index for which the underlying strategies, and investment in those strategies, have changed dramatically, offers little evidence as to the underlying benefits of the universe of hedge funds over time except under the most restrictive of assumptions as to investor behavior and investment. Remember, the Composite Index returns of the 1990s reflect the returns primarily of CTAs and Global Macro. Asset Weighted (AW) Composite Index returns for the last ten years reflect that strategy with the greatest AUM under management (e.g., Equity Long Short) while Equal Weighted (EW) hedge fund indices reflect that strategy with the greatest number of funds or the strategy with the highest historical volatility. In brief, one should not use historical composite returns to provide an estimate of the current benefit of hedge funds as illustrated in today's Composite Index.

2.4 Impact of Index Choice: As a corollary to 2.3, note that hedge fund indices reflect the performance of a specific "non-investible portfolio of hedge fund strategies" and depending on the index chosen results may differ dramatically (the same may be true for the hedge fund database chosen). An equal weighted index assumes that the investor holds a hedge fund portfolio which reflects the number of reporting funds and that the investor can rebalance consistently with the indices reporting interval (e.g., monthly). An asset weighted index assumes that the investor holds a hedge fund portfolio weighted to reflect the AUM of the underlying managers and can adjust his/her portfolio to match incoming cash flows to each strategy. There is no single investor that meets the above. What composite hedge fund indices do provide is an estimate of a "composite return" to a wide range of strategies within the hedge fund industry at a particular point in time. In the future, research should emphasize that individual funds will reflect the returns of the composite index only to the extent that the fund of funds or the manager's strategy reflects the composition of the historically derived hedge fund composite index.

2.5 Impact of Database Choice: As a corollary to 2.4, remember hedge fund research based on a hedge fund database may not reflect results of another hedge fund database unless the two databases reflect the performance of a similar set of individual hedge funds and hedge fund strategies. In the real world of hedge fund management, I never relied on a single hedge fund database. We often purchased several databases and screened them for duplicates, etc. As indicated in some recent research, several of the current existing databases (HFR, CISDM) were created in the early 1990s, while another database (CSFB/Tremont) was enlarged dramatically in the early 2000s. Consequently, for the pre-2000s period, the results often differ between research on the older databases (HFR and CISDM) and those (CSFB) with a relatively unique set of managers (Schneeweis, Kazemi, and Szado, 2012a).

2.6 Strategy Based Indices: Individual strategy based indices more closely reflect the actual performance of a particular focused fund of funds or hedge fund and may provide a more realistic portrayal of expected rates of return and risks across an array of market environments. However, even in this case, individual strategy indices are a mix of individual strategies (e.g., onshore versus offshore, value versus growth-based ELS, long-term trend-following CTAs and short-term-trend following CTAs). In short, most hedge fund indices do not reflect, or even worse are contaminated by widely ranging individual hedge fund performance at the sub-strategy level. In the future, indices and sub-indices need to be created which provide a clearer focus on a particular asset selection process.

2.7 Strategy Classifications: Researchers must be careful not to assume that the strategy classification given

in any individual database actually reflects the underlying trading process. I could offer numerous examples of CTA strategies listed under Global Macro, of equity collar strategies listed as market neutral, and a range of strategy-specific funds of funds grouped under a risk classification rather than a strategy classification. What is necessary to understand are the conditional factors driving individual hedge fund strategies and to ensure that particular hedge fund strategy returns are consistent with the historical factors (e.g., ELS managers generally make money in up equity markets and Distressed Security hedge fund managers perform well in declining credit spread conditions). Researchers should note that considerable academic research conducted in the mid-2000s was centered on hedge fund "market timers". We now know that many of these "market timers" never market timed in terms of trading in and out of U.S. equities to cash but primarily made their money by trading against close of day pricing in the U.S. As a sidebar, it always amazes me when academics refer to all hedge fund managers as market timers. Few hedge fund managers directly time the market. They may increase shorts based on firm valuation, or they may sector rotate if they have models which focus on sector valuation, but few of the major strategies are in and out of their underlying market on a consistent basis. The cost of trading is just too large.

2.8 The Average Investor: As important, one should not look solely at returns of the entire industry as reflecting the pros and cons of the entire industry or that of an average investor. A wide range of individuals/institutions hold a wide range of hedge fund strategies for a wide range of reasons (regulatory constraints, industry standards etc.). Given the varying risk exposures of any individual investor, the benefits of hedge funds in general or a strategy in particular are investor specific. Hedge funds are often held as part of an investor's larger portfolio most of which is illiquid (job, home equity, etc.). The generic approach of risk adjustment (e.g., information ratios) may tell us little as to whether a particular hedge fund or strategy adds value after consideration for proper total portfolio risk. As in most research, general statements are generally wrong. Often simple statements as to what analysis was conducted on what data, and what are the results, are all that can be said. Research is as much about what is said as what it leaves out or simply cannot be analyzed given the time period, data or current methodologies. For example, looking over a past period of superior bond returns (falling bond yields) or stock returns (falling volatility) may tell us nothing about how a particular hedge fund strategy may impact a portfolio of stocks and bonds in a forecasted period of increasing interest rates or rising volatility.

2.9 Hedge Fund Fees: In measuring the impact of fees on investor performance, one must be careful to ensure that one is measuring the investor's net return or net profit versus net profit for an individual hedge fund manager. The difference between gross return and net return is of course the return to the investment manager. However, "real" hedge fund manager return is not gross profit. The gross profit (e.g., based on reported hedge fund performance fees (e.g., 1% and 20%) is similar to a corporate firm's total revenue. From those revenues the fund manager must pay a range of management and operational costs. While difficult to estimate for most managers, net manager profit is only a percentage of gross industry profit (however poorly measured). In short, when comparing investor net profit (returns on investment) with hedge fund manager profit, one must compare net investor profit with net hedge fund manager profit and not net investor profit with gross hedge fund manager profit.

One could go on and on, but let me make it clear that I do not regard as a requirement of investing in hedge funds empirical results that indicate that all hedge fund managers or hedge fund strategies must provide evidence of positive "excess return" across all market environments. We simply do not have, at this time, the data or the methodology available to determine the final "true risk-adjusted" benefits to any investment strategy. For the most part, hedge funds, with some managers and strategies better than others, offer the ability to provide unique expected return and risk characteristics not easily available in many other investments, especially in certain

market conditions. One cannot and should not ask for more. For a further discussion of myths and questions involved in hedge funds and managed futures research, readers are directed to a range of issues discussed in the now dated "Myths of Managed Futures" (Schneeweis, 1998a, 2010a) and "Myths of Hedge Fund Investment" (Schneeweis, 1998b, 2010b) to the more recent additions presented in "Questions in Hedge Fund Investment" on the INGARM Website. (www.ingarm.org). See the Appendix for a list of current questions.

3. Individual Issues in Hedge Fund Research

Let us return to the reasons for starting this letter (recent research in hedge fund research that is starting to become accepted wisdom when in fact it is far from that). Among my associates we discuss these issues daily. Through time one cannot be consistent without being a hypocrite, unless one learns very little over time (or things never change). I do believe that there are numerous misrepresentations of the hedge fund industry both by its proponents as well as its critics. The industry is an evolving process and explaining its current role in the investment industry should be everyone's goal. I have a bias against any research which focuses on past data which does not reflect the current conditions. For example, we now live in an age where a range of commodities are traded globally and are available 12 months a year yet I see commodity research discussing the seasonal nature in certain commodities based on data from a period in which commodity production was localized and for which the results have no relevance to today's market conditions. In short, we often refer to the past while not emphasizing how it has changed. In a switch on the comment of George Santayana - one should remember that those who only live in the past are plagued to repeat it (or miss the benefits of acting on known changes in current conditions).

3.1 Use of Qualitative Data in Hedge Fund Research

If one is to address one set of issues in hedge fund research perhaps the easiest place to start is simply with issues related to the quality of the data often used by researchers. Each of the primary databases used by hedge fund researchers has its own history. The CISDM database is perhaps the oldest with its origination as the MAR database in the early 1990s. In the mid 1990s the HFR and Barclay databases were started, and by 2000, CSFB had ramped up its hedge fund business. Note, most of the funds included in the CSFB database in 2000 already reported to the other databases and research which removes many of these funds as backfill results in a set of funds which misrepresent the industry during that period. In the early part of 2000, I became directly involved with the development of a major hedge fund platform. One of our first projects was purchasing and combining all the major databases of the time (HFR, CISDM, Barclay, CSFB, Altvest, Cogent). We even hired an auditing firm to check the quality of some of the data in some of these databases. They soon came back that, even for their limited sample, the qualitative data could often not be verified (concerns existed even on the return data). What we learned at that time and over the years is that no hedge funds data collection firm has the time or the resources to insure the exactness of the data. A few examples may provide some clarity:

3.1.1 AUM-Based Data: It is well known that industry AUM data provided by most major index providers is merely a back of the envelope estimate (we have no real idea of the total amount managed in the industry). It is less known that the monthly AUM data in hedge fund databases has numerous problems that make any research (e.g., fund flows reaction to historical returns, IRR measurement) problematic. For instance, a review of the CISDM and CSFB databases showed that in any one month for the period 2008-2010 between 10 and 20% of the funds reported the same AUM in any two consecutive months. Imagine research in which up to 20% of the data in any one month is faulty, but we continue to conduct research using fund AUM as if all is OK.

3.1.2 Other Qualitative Assumptions: Almost all other qualitative data has similar defects. For example, in almost

any database (year 2010) that I checked, only 80% of the funds who report AUM in dollars report that they have a listed auditor. Does any researcher really believe that 20% of dollar-denominated hedge funds do not have an auditor? Of course not – but research crosses my desk from researchers who consider funds who do not report an auditor as assumed not to have one. Their response – it is not my responsibility to check the data; maybe not to check, but to put a “BIG” qualifier in the first footnote as to possible biases in one’s results as a result of the problems in the qualitative data.

3.1.3 “Continuity Bias”: Whatever the defects in qualitative data, the biggest is the “Continuity Bias”; that is, we use a current database with current listed qualitative data. If one does not have a yearly record of the database used almost all researchers assume that the qualitative data reported in the most recent database was the same in all previous years (e.g., performance fees, leverage, redemption restrictions). A brief analysis of databases in 2002 and 2010 for a common set of funds indicate a number of changes; however, I have no idea if the number of changes reflects either too little or too many. What I do know is that the qualitative data of 2010 may not have any relationship to the qualitative data of 2002 and certainly earlier. To make that assumption can drastically impact empirical results.

3.2 Return-Based Data Analysis

3.2.1 Database Bias and Time Period of Analysis: Given the problems in qualitative based research, it is not surprising that most researchers concentrate on return-based research. Unfortunately, each database has different reporting funds and classifies those funds differently. A classic example is the inclusion of Madoff feeder funds in the CSFB database, but not in the CISDM database. In 2008, the CSFB market neutral index reported a 40% drop in value (Schneeweis and Szado, 2010). As a result, research that concentrated on the CSFB/Tremont database market neutral index has differential results than that conducted on any other database. Recent research (Schneeweis, Kazemi and Szado, 2012a) has also shown differences in relative performance, prior to 2000 and post-2000, depending on the database used (Schneeweis, Kazemi, and Szado, 2011, Aggarwal et. al., 2012). In short, existing research results may be database- and time-period specific. Researchers beware.

3.2.2 Return Interval Use: Another concern with the current research is that it is predominately based on monthly data. A host of research questions are simply not conducive to the use of monthly data (including tests of first order autocorrelation and fund return persistency) which really requires a higher frequency of return data. For example, in some of my own recent research (What a Difference a Day, Week, Month Makes, (Schneeweis, Kazemi, and Szado, 2012b)) I have shown that statistical patterns that exist in monthly data are not seen in daily data (the existence of first order autocorrelation often is shown to exist in monthly data, but not in daily data over the same time period), or are susceptible to a single data point or set of data points. Removal of several months in 1998 (August, September and October) or in 2008 (October, November, December) have significant impacts on reported descriptive statistics. Researchers should be cautious using monthly data to examine issues that may only be correctly analyzed using higher frequency data. Researchers should at least acknowledge that the choice of the measurement period used has significant influence on the estimated relationship between the dependent variable and the explanatory independent variables.

3.2.3 Independent Return Factors (What Set of Factors To Use in Return Estimation): The factors academics and practitioners use are often simply determined by past research. As discussed later, we commonly use the same set of factors to attempt to describe the historical return pattern across a wide range of differing strategies when in fact each strategy probably requires a different set of variables. Today in hedge fund research, academics

often use a combination of Fama and French (FF), Fung and Hsieh (FH), and momentum factors. The rationale is straightforward, the FF factors are used for market risk relationships, the FH for hedge fund timing, and the momentum factors for trading and market processes. The thought that these factors would fit all hedge fund strategies is problematic. Why use equity momentum factors in a credit-spread strategy? Why use timing variables at all for hedge funds, which for the most part track a particular set of investments and given the lack of liquidity in those assets rarely conduct timing strategies (note for CTAs and some Global Macro – timing and momentum factors may work – but as shown in Schneeweis, Kazemi, and Szado, 2012a (forthcoming, *Journal of Alternative Investments* 2012) FH factors are rarely significant and if one wishes to capture short-term, mid-term, and long-term timing, various CTA trading models work as well as the FH variables and are more consistent over a range of market conditions in explaining the return of a host of active hedge fund/CTA strategies). In short, we use what we can (e.g., what is available), not what we should. After twenty years of Fama and French (FF) (1992) and fifteen years of Fung and Hsieh (FH) (1997) and Schneeweis and Spurgin (SS) (1996, 1998c) (Schneeweis and Spurgin used absolute value and CTA-based trading factors), perhaps it is time to move to a more complex set of variables that actually represent the underlying strategy. I simply do not understand why I see articles which include variables such as gold, currency indices, emerging market indices as explanatory or risk factors for strategies which hold no gold, no currency or emerging market debt or for which the underlying risk holdings have nothing to do with any of the aforementioned variables. As important, since none of the factors used are in trading form (include trading costs, etc.) - as discussed later - the results are not indicative of alpha, only model dependent excess return. At least that acknowledgement would help some of us from getting heartburn when we read the description of the results.

3.3 How do Hedge Funds Act?

Whatever the defects in qualitative and quantitative data, perhaps the biggest problem is in the simple inaccuracies in understanding how hedge fund strategies act. I remember an article from a top journal in which the author(s) conducted a study of the determinants of Japanese Convertible Bond Arbitrage and for which a major finding was that a credit spread variable existed for U.S. Convertible Bond Arbitrage, but not for Japanese. How is this research? In Japan at that time, the chance of a corporate bond default was nil. No Japanese bond responded to traditional credit spread variables. Other examples exist. I recently saw a study that used emerging market indices to capture the returns of a set of global macro funds without considering that today (depending on the database) many global macro funds are CTA’s in HF clothing. In another case, a researcher regressed CTAs on a set of common market factors and found that the betas of the common market factors did not change over time concluding that CTAs were not active traders. I can think of no one who believes that CTAs are not active traders. The lack of change in the betas of the market factors was a result of the fact that the R square of the regression was so poor and the market factors so irrelevant that no significant changes occurred. As a contrast he ran an ELS on the same factors and saw many changes in beta coefficients and reported an ELS manager as extremely active when in fact the ELS manager never changed holdings. It was the market factors that changed (e.g., the S&P 500 went from an energy-biased index to a technology index). As stated earlier, before one writes about a strategy, the person should talk to people who trade that strategy. As an editor, it would dramatically reduce the need to tell an author that he simply has it wrong about how he describes how something is done or that simple reference to other articles, (who may have also got it wrong), is sufficient to the day.

An example of academics misunderstanding the hedge fund industry is the number of researchers who quote the uniqueness of hedge fund managers as having complete discretion over whether to accept new capital

from clients and having control over the optimal timing of money into and out of their strategies. In short, many authors present hedge fund managers as market timers with the flexibility to fundamentally change their asset holdings and risk characteristics within relatively short time frames. (Some research in the early 2000s did indicate that hedge funds listed as market timers made excess return; the reason they made money is not that they were market timers, but that they were part of the great mutual fund foreign/U.S. pricing scam and in fact only listed themselves as market timers.)

The problem reminds me of Charles Dickens's "Oliver Twist" in which a judge criticizes a man for the illegal actions taken by his wife. The man replies to the judge, "the Law may be well and good, but it does not know my wife." Many researchers may well know the details of hedge fund definitions, but not know how they are actually managed. Hedge fund managers, as it is known, have many restrictions on money coming in and out which depend on a range of market considerations (note: offshore differs from onshore and often has different investor liquidity rules than in the U.S.). I smile when I read academic researchers discussing hedge fund managers generically as market timers when many managers follow valuation-based trading strategies and are anything but market timers except in a very limited sense (lowering market exposure in very limited set of circumstances). Similarly, I remain amazed at the extent of research indicating that changes in real AUM are due to investors chasing returns. While past return is of significance, we have a limited set of economic cycles and strategy development to provide a definitive basis for what drives investment into individual strategies or managers. Given the restrictions on fund investment as well as the inability to market hedge funds publicly in the U.S. (note the restrictions differ outside the U.S and the ability for hedge funds to publicly market within the U.S. may change in the future), it is important to note the importance of prime brokers and institutional capital introduction groups in the AUM raising process. I have always looked at many of the AUM raising and return studies with an "Oliver Twist" smile.

In six years as a research manager in what grew to be an almost \$4 billion managed account hedge fund platform with 50 hedge funds, I really was an individual who managed lines of credit. What I did not manage were cash flows based primarily on recent performance. If I fired a hedge fund manager, they would rarely come back unless I had a lot of money. If I had a sales agent I had given an AUM level came with clients I had to say yes to or lose him as a sales agent. Whatever the case, I and the managers under me did not have the ability to quickly change the asset level or mix of the portfolio based primarily on past return. I was a manager of credit lines so I could pay out to an investor without changing the actual funds allocated to various managers. As a sidebar, managers were also not allowed to dramatically change strategy direction or risk exposure for the simple reason that they were held in a portfolio based on their expected risk characteristics. Except in a few strategies, most hedge fund managers have limited ability to dramatically and quickly change strategies or holdings.

3.4 Hedge Fund Pricing

Of course, one of the reasons I could handle lines of credit was that most of the managers had positions at various acceptable prime brokers. Since I dealt primarily with managed accounts I was able to limit the existence of side pockets. Except for side pockets, I am tired of hearing how managers self-manage the pricing of their portfolios. As a side bar, an academic/practitioner who thankfully took the time to read this piece pointed out to me that in his personal experience, funds were required to have their portfolios evaluated through third-party pricing agencies quarterly. Researchers should be aware that some inter-month valuation issues may exist on some very illiquid bonds for which self-pricing would be permitted for a few days, but any reasonable asset manager requires the portfolio to be priced externally and even fair valued depending on the external client. I know the pricing

issue makes great theater, but for most equity-based hedge fund strategies it is bad fact.

3.5 Hedge Fund Factors: Hedge Funds as Absolute Return Vehicles

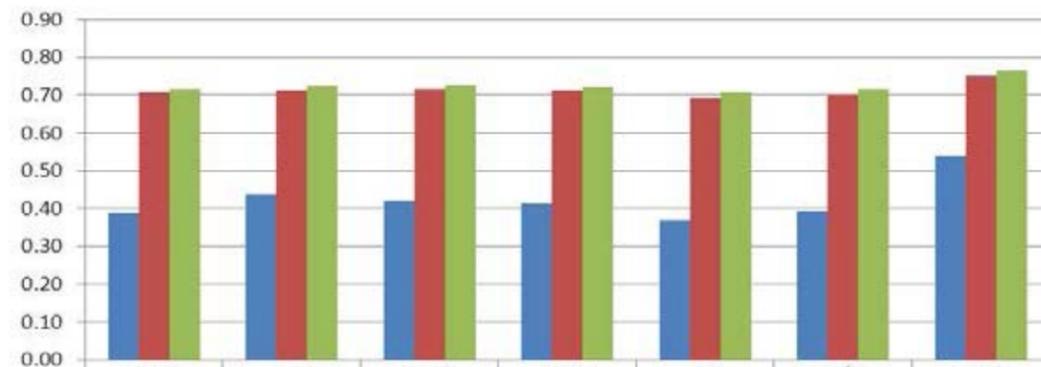
Hedge funds are sometimes described as absolute return strategies which are not correlated with traditional stock and bond markets. However, while some individuals may still present hedge funds using this "outdated concept" of absolute return, today the accepted knowledge as to the return process of hedge funds is more evolved. While the sources of hedge fund returns are often described as being based on the unique skill or strategy of the trader, for the past 15 years academic research (Fung and Hsieh, 1997), (Schneeweis and Spurgin, 1998, Schneeweis, Kazemi, and Martin, 2003, Schneeweis, Kazemi, and Szado, 2012) has demonstrated that hedge fund strategy returns are also driven systematically by market factors, such as changes in credit spreads or market volatility that are directly related to the longer term fundamental security holdings of the hedge fund rather than exclusively by an individual manager's alpha. Therefore, one can think of hedge fund returns as a combination of manager skill and an underlying return to the hedge fund strategy or investment style itself. In fact, similar to the equity and bond markets, passive security-based indices have been created that are designed to capture the underlying return to the hedge fund strategy (Schneeweis, Kazemi, and Karavas, 2003, Crowder, Kazemi and Schneeweis, 2011). The performance of an individual manager can be measured relative to that "strategy" return. If a manager's performance is measured relative to the passive security-based hedge fund index/benchmark, then the differential return may be viewed as the manager's "alpha" (return in excess of a similar non-manager-based investable replicate portfolio). If a manager's performance is measured relative to an index of other active managers, then the manager's relative performance simply measures the over- or under-performance to that index of manager returns.

Other issues in return estimation include the use of equal weighted or asset weighted portfolios. The negative of equal weighted is that it weights small and large funds equally. Small and large funds often act differently. Small funds may outperform in a database due to backfill bias, etc., however, most research has not concluded (and cannot) if small always outperforms large or large outperform small. It is strategy dependent and time dependent (is it a large fund that got small, small that got large, or small that "decided to stay small. Is it a small fund in a large fund family or a single fund in a single fund family? Is it a single fund in a large "managed account" family in which the fund is only used for "public relations" purposes)? What is true is that at some level most hedge funds in a strategy have to trade similar positions due to liquidity restrictions in the assets traded. At that level, the differential return is less size impacted (but note again this is strategy dependent). As a sidebar, the largest hedge fund managers often fail to report to most hedge fund databases. In short, how we measure and what we measure often disguises fundamental issues of performance (even using return to risk as a comparison in a world in which risk is a more multivariate issue may be of concern) – note small firms (by AUM) are only a step away from failure with smaller research teams and smaller compliance teams and dealing with small brokers such that, as an investor, small (at some level) must outperform to cover its organizational risks.

One would not normally raise the issue of return estimation. Each form of return estimation has its uses and each use is determined by a range of issues (e.g., distribution time frame). Whatever the case, differences in return form does impact what we report. As shown in Exhibit 2, average differs from geometric (we know that the mathematical relationship is affected by the volatility of the data used). Moreover, as shown in Exhibit 2 average and annualized (geometric) differs from IRR. IRR requires assumptions as to cash flows into/out of the index/fund and is sensitive to a host of issues as discussed in section 3.6.

Exhibit 1: R Square: Alternative Multi-Factor Return Models

Alternative Multi-Factor Return Models: R Square



	Trad	PTFS	MFSB	ABS	FF	FF/FI	FF ADJ
CSFB/Tremont HF Index	0.39	0.44	0.42	0.41	0.37	0.39	0.54
CISDM EW Hedge Fund Index	0.71	0.71	0.72	0.71	0.69	0.70	0.75
HFRI FW Composite Index	0.72	0.72	0.73	0.72	0.71	0.71	0.77

Period of Performance: 1998-6/2009

Model 1 (Trad): Traditional Four Factor Model (S&P 500, Russell 2000, BarCap U.S. Government and Corporate High Yield).

Model 2 (PTFS): Traditional Four Factor Model (S&P 500, Russell 2000, BarCap U.S. Government and Corporate High Yield) plus Fung and Hsieh four dynamic trading factors (Equity, Fixed Income, Currency and Commodities).

Model 3 (MFSB): Traditional Four Factor Model (S&P 500, Russell 2000, BarCap U.S. Government and Corporate High Yield) plus four momentum factors (Equity, Fixed Income, Currency and Commodities) based on the Schneeweis and Spurgin (1998) and Spurgin (1999) futures based momentum factors.

Model 4 (ABS): Traditional Four Factor Model (S&P 500, Russell 2000, BarCap U.S. Government and Corporate High Yield) plus Schneeweis and Spurgin (1998) four absolute value factors (Equity, Fixed Income, Currency and Commodities).

Model 5 (FF): Traditional Three Factor Fama-French Equity Factors (Market Factor Excess Return, SMB, HML)

Model 6 (FF/FI): Traditional Three Factor Fama-French Equity Factors (Market Factor Excess Return, SMB, HML) plus Fixed Income Factors (BarCap U.S. Government and Corporate High Yield)

Model 7 (FF ADJ): Traditional Three Factor Fama-French Equity Factors (Market Factor Excess Return, SMB, HML) plus Fixed Income Factors (BarCap U.S. Government and Corporate High Yield) plus Equity Momentum Factor (French, 2010).

In short, today one does not refer to hedge fund returns being compared to a simple equity or bond index or the risk-free rate. We have moved on and considered additional risk or return factors. Even in this area we have been less than perfectly honest. We continue to use four, five, six, and seven multi-factor return models simply because someone else used them. The traditional four-factor, FF, FH, and SS augmented models simply do not offer significant differences. In fact, the data we use may swamp anything we do with the modeling (which in fact should contain a conditional factoring approach to have any real significance over time).

3.6 Hedge Fund Return: Digging into the Numbers

One would think that academic studies would at least use a common measure of return estimation. However, there are various reasons for using different measures of return (e.g., geometric, average). Recently, IRR has been suggested as an additional return measure (and when used, results in a lower benefit of hedge funds). Each measure has its pros and cons. For example, IRR may be testable if one had a database that actually captured

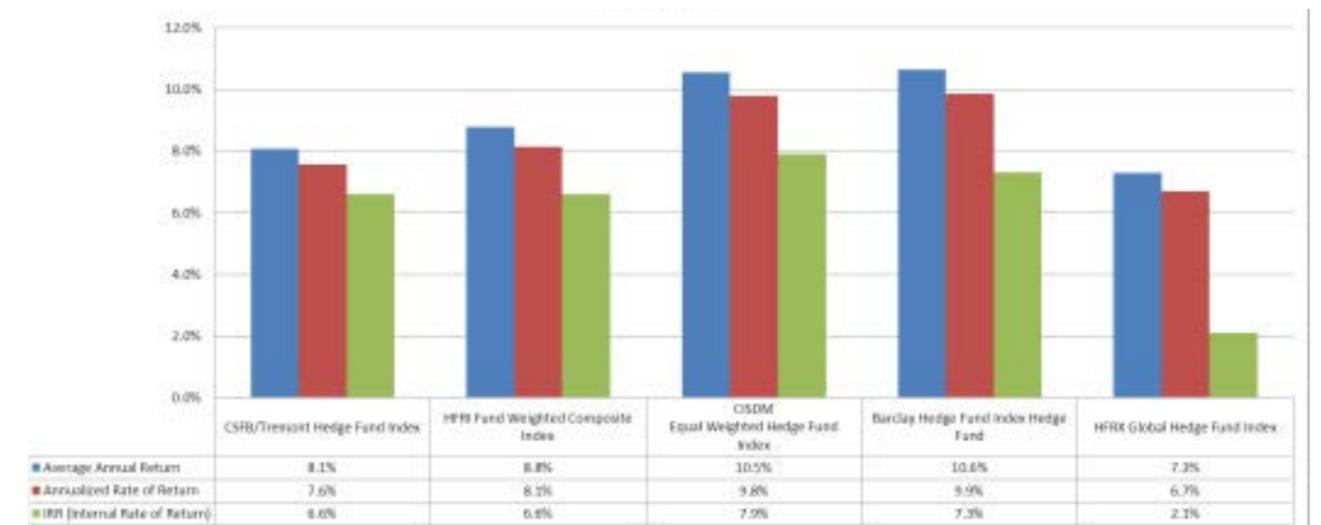
all hedge funds and for which reported AUM reflects true AUM, and if one would concentrate on relatively small periods of investment for which the number of investors remained constant and were commonly exposed to a set of strategies. As noted earlier the AUM estimated at the industry or strategy levels are just that – estimates. Even the AUM reported in most databases have a number of issues (an analysis of two of the largest databases (CSFB/Tremont and CISDM/Morningstar) indicates that in any one month between 10% and 20% of firms report the same AUM in consecutive months). In short, current hedge fund data and especially AUM data is so flawed that it simply prevents any individual from using that data to estimate AUM industry effects for any one month, year or decade.

We have not mentioned this before, so why not here. Most practitioner and academic studies report results over some cross-sectional time frame. Moreover, if one is concerned with the ability of hedge funds to provide benefits to the average investor and if you believe that results which do not consider AUM differences by year are misleading, why not simply provide results on a year-by-year basis. Rather than assuming some contrived investment process, a more direct method is simply to look at each year with dramatic AUM differences. The results in Exhibits 3a and 3b show the impact of the addition of a 20% investment in a range of hedge fund indices on information ratios of an equal-weighted stock and bond portfolio (S&P 500, Russell 2000, and Barclays Government and High Yield Bond indices). Again, the results show that for the past 13 years the inclusion of a hedge fund index (AUM based or EW based) provided return and risk benefits to an “average investor” in almost every year of analysis using the most basic of return/risk comparisons (information ratio). Note, several years were not included in which the portfolio return was negative and in which information ratio comparison may not be relevant (a more negative information ratio may in fact have a lower negative return and a lower standard deviation). In any event, the actual benefits of any analysis are often based on the data used in analysis. In Exhibit 4, for example, we show that the HFRX Global Hedge Fund Index outperforms most other indices in the late 1990s (periods of low HF industry AUM), but underperformed many other hedge fund indices post-mid-2000 (periods of high HF industry AUM). This return pattern may explain in part the different IRR analyses’ results using the HFRX Global Hedge Fund Index in contrast to other traditional hedge fund indices.

3.7 Indices as Representative of Investor Return

Many researchers continue to use indices to capture return characteristics. As shown previously in Exhibits 3a and 3b, the hedge fund index used may have implications on results. Researchers often mention that poorly

Exhibit 2: Hedge Fund – Comparison Rates of Return



performing managers may not report and thus any index may overestimate returns (of course, over-performing managers that are closed may also not report so the final results are unknown). For example, there is plenty of academic research on the problems in the use of new hedge fund indices due to their use of backfill bias, yet I also see research which states that "none of the indices referred to in this book have been modified to reflect survivor bias or backfill bias so overstatement of returns in those indices remains." This is an important note for some indices but the primary hedge fund indices (e.g., HFR, Barclay) simply report averages of reporting managers (some with restrictions such as at least two years of history before reporting to lessen new firm effects). They have selection bias but no backfill bias in the traditional sense. As for the S&P 500, once a firm's return is included it never leaves – if a new firm is added its old returns are not added and the index is not revised. Only for a new database for which a historical index is created does an index have backfill bias. Dead firms are also not removed from traditional hedge fund indices so traditional survivor bias (the removal of dead firms from a database) is also not a problem. As a sidebar, the entire issue of the impact of survivor bias in estimating historical returns needs a rethink. Most analyses of survivor bias fail to consider the impact on current estimates of return of the strategy tested, the time period of analysis, or AUM.

As important, when hedge fund indices are used one must be careful that the reported results are not index sensitive. As reported earlier, most hedge fund indices are database dependent. They are representative only.

Exhibit 4: Analysis of Comparison Annualized Hedge Fund Index Return

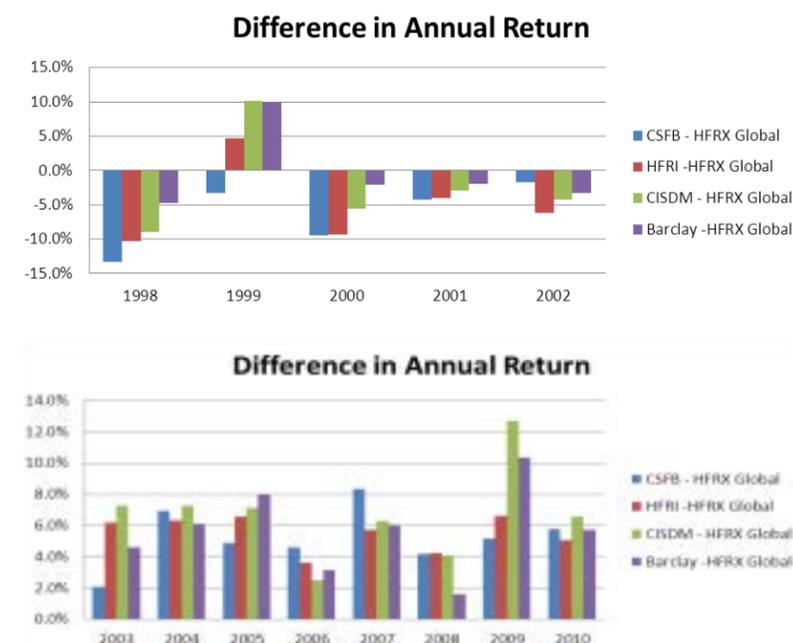


Exhibit 3a: Yearly Information Ratios

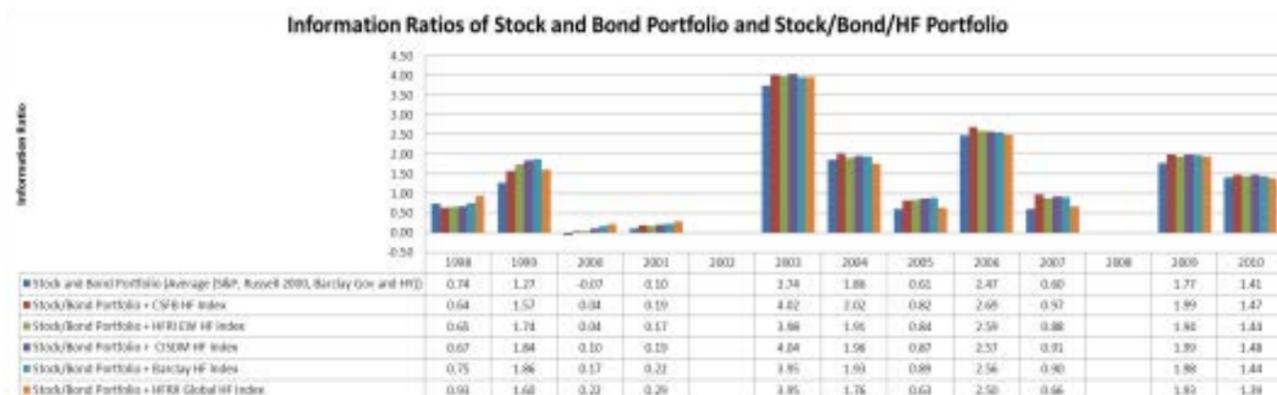
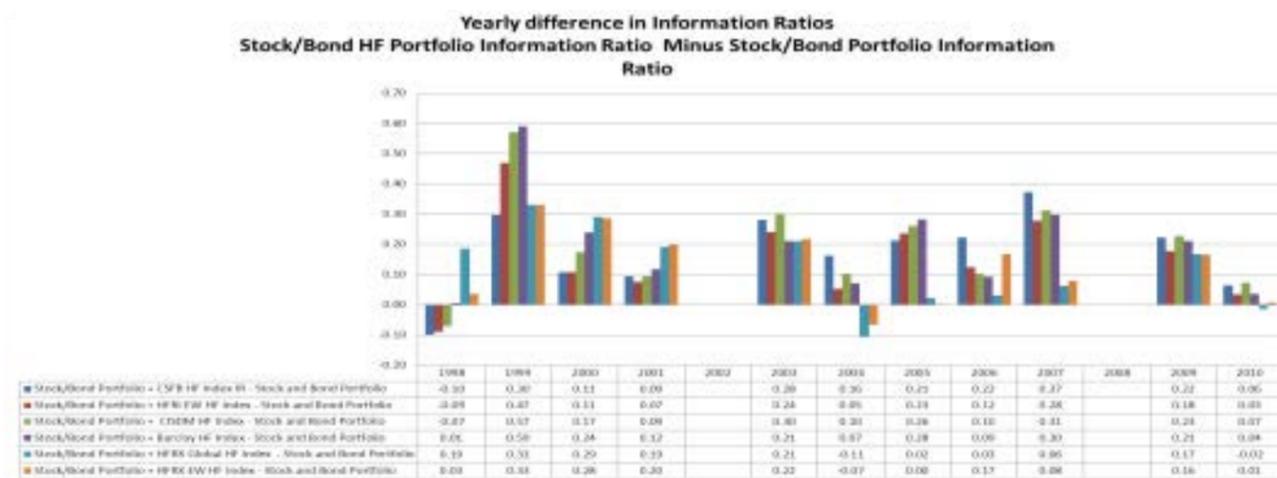


Exhibit 3b: Difference in Yearly Information Ratios



Therefore make sure they are representative (beware of CSFB Equity Market Neutral (which is dominated in certain years by the rise and fall of the Madoff feeder funds included in the data) and beware of the use of newly "algorithmic" constructed indices (e.g., HFRX indices) which may not represent actual historical manager returns). I do not have an answer as to the impact on research results of particular indices used but as shown in Exhibit 4, the hedge fund index used may have implications on the presentation of results.

3.8 Performance Fee and Fund Performance

Researchers often attempt to attribute (their asserted) poor average investor performance to the performance fees of managers. As to the relative extent of manager profit versus investor profit, academic research has often pointed out that the markets are not efficient at the gross level since the difference between total manager profits and investor profits reflects a set of fees to cover business expense and return to skill. Skilled managers may have higher fund fees than other managers, but the net returns to each investor may be the same. Researchers note: Fund fees do not mean fund net profits. Each industry and fund has different management, research and sales costs. Two firms or indices with same fee structure can have dramatically different profitability. Moreover, attempts to ferret out the annual profits to managers within the industry – again without any direct knowledge of the drawdowns etc., of individual strategies or managers – are a whistle in the dark.

One must also be reminded that the fees paid to managers do not equal net profits to them. Fund managers have to pay salaries, operational costs, service costs, travel etc. That is one of the reasons why small managers (e.g., \$100,000,000) can hardly exist on the current 1% and 20% unless they work to receive incentive fees (one cannot run a fund on 1 million dollars). (Note that the average AUM of U.S. dollar-denominated funds in the CISDM database at the end of 2009 was \$252,867,323. Given a current 1% and 20% performance fee, in a year with no incentive fee, the gross profit of the average fund is \$2.5 million. Given all the costs of running a fund, this

provides little net profit to the hedge fund manager). In brief, a more extensive analysis is required to determine the relationship between net profits of the manager relative to the net profit (return) to the investor or whether the net profit after all expenses can be regarded as excessive for the average fund.

3.9 How to Measure “Alpha”

There is nothing new here. Many other researchers have pointed out that referring a differential return between a fund and a set of non-investible factors (S&P 500, MSCI) without using an investible form of those factors, including the costs of rebalancing, etc., provides only an estimate of excess returns relative to the assumed comparison return model. Note, the difference is not alpha as most practitioners or some academics view it, but is a positive “estimated” risk-adjusted return. If one is to use alpha in your presentation by regressing strategy return against non-investible market factors, please footnote that it is not alpha (note this also is true for stock and bond research).

Moreover, many studies have focused on cross-sectional analysis covering periods in which the strategies and investment opportunities fundamentally change. I have no problem with stating that certain strategies provided abnormal return such as going short mortgages in 2006, but going short mortgage today may have a limited opportunity set. Cross sectional analysis over lengthy time periods may have some value, but what is of interest is how and why the process of private pools of capital which finance new strategies or investment opportunities perform over time. Again, rather than concentrating on a cross-sectional analysis of a particular strategy (See Exhibit 5), the time varying pattern of performance (Exhibit 6) may be of greater interest to investors as well as researchers (note the time dependency of the significance of the intercept using the CSFB hedge fund index). While the results show significant intercepts for the other two primary hedge fund indices (CISDM and HFR), the lack of significance of the CSFB intercept is primarily in the pre-2000 period. As mentioned previously, these results are reflective of the potential for analyses of hedge fund benefits to consider various economic conditions rather than any single set of statistical results.

3.10 2008 as a Special Year

2008 was a dramatic market for all investors, however results (Exhibit 7) show that even in 2008 the addition of HF may have increased return and reduced risk relative to a sample stock and bond-only portfolio. However, I do not have a simple answer for what to do about the crash of 2008. 2008 indicates a widely different market volatility environment than almost any other period (check out the number of extreme daily moves, volume, correlations). While indicative of market environments during periods of extreme illiquidity, I would hope that future researchers would take the effort to isolate the market environment of this period before conducting research across various market environments (as a sidebar – please do not report hedge fund skewness and kurtosis without reporting the significance level and, more importantly, as most researchers know, reporting skewness or kurtosis over a period of changing volatility may result in a reported skewness and kurtosis over what is merely a mixture of normal distributions with changing volatility).

4. Future of Hedge Fund Research

The purpose of this “open letter” is to remind academics and practitioners that both should spend a little more time in the other person's shoes (or at least their offices). As schools attempt to develop new education areas to attract students, many look to alternative investments as an area of interest. As the co-founder of the Chartered Alternative Investment Analyst Association (CAIA) (the principal global professional designation in the alternative asset investment industry), I realize the importance of education in alternative investments. The above discussion illustrates where academic/practitioners may have gotten it wrong and illustrates the potential need for academics

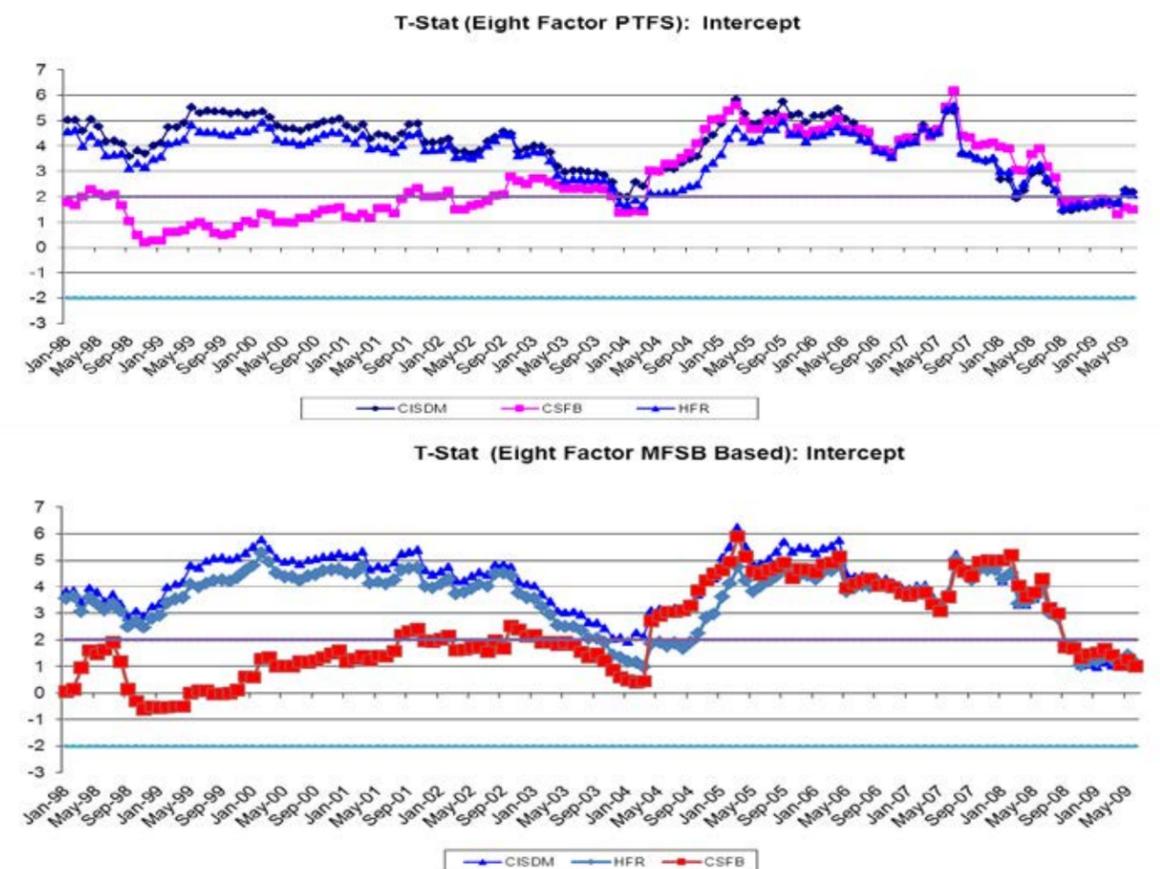
Exhibit 5: Cross Sectional Significance of Intercept: T-Stat

1994-6/2009 -T-Stat	CSFB/Tremont	Hedge Fund		
	HF Index	Index	Composite Index	
Intercept		3.16	6.29	5.99
S&P 500	1.72	3.21		3.23
Russell 2000	3.83	8.24		8.68
BarCap U.S. Gov't	1.58	-0.34		-0.77
BarCap U.S. Corp. HY	2.54	2.77		2.52
PTFSFX	0.90	0.30		0.41
PTFSBD	-3.06	-1.24		-1.36
PTFSCOM	1.75	0.66		0.78
PTFSSTK	1.56	1.05		1.41
Eight Factor (Fung Hsieh) R2	0.44	0.71		0.72

1994-6/2009 -T-Stat	CSFB/Tremont	CISDM EW		HFRI FW Composite
		HF Index	Index	
Intercept		2.44	6.00	5.39
S&P 500	1.88	3.39		3.46
Russell 2000	3.70	8.16		8.63
BarCap U.S. Gov't	1.73	0.09		-0.04
BarCap U.S. Corp. HY	3.05	2.93		2.78
MFSB Currency Subindex	1.42	0.17		0.16
MFSB Interest Rate Subindex	-0.91	-1.40		-1.11
MFSB Physicals Subindex	1.32	1.02		1.57
MFSB Stock Subindex	1.63	0.99		1.19
Eight Factor (Schneeweis Spurgin) R2	0.42	0.72		0.73

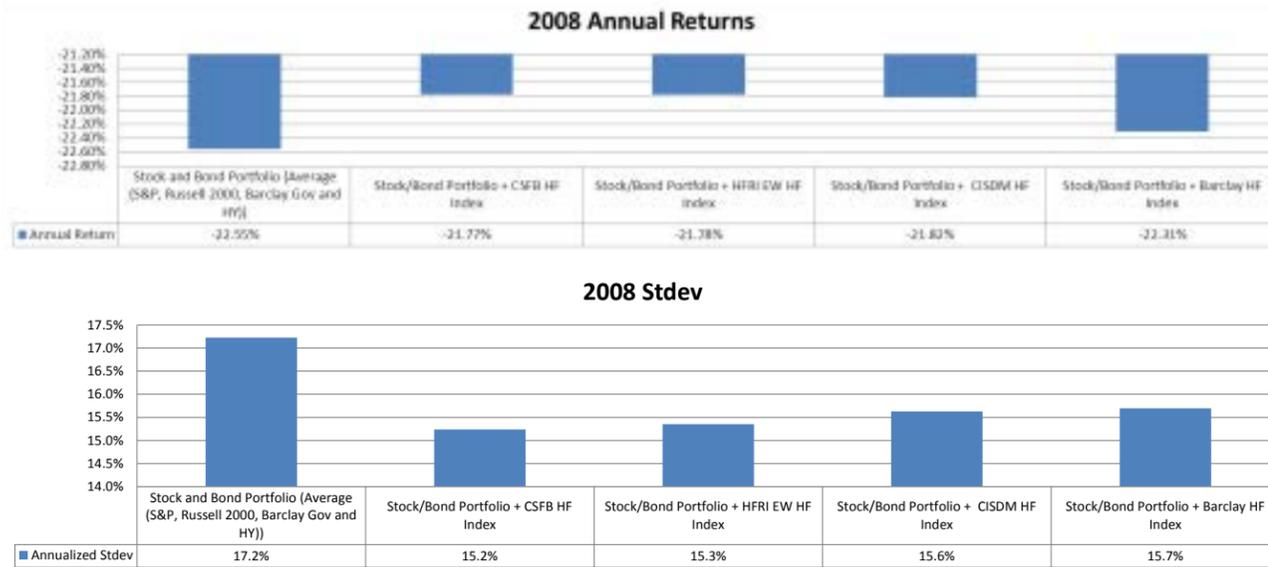
Source: Schneeweis et. al., (2012)

Exhibit 6: Changing Significance of Intercept: T-Stat (Traditional 8 Factor Model)



Source: Schneeweis et. al. (2012)

Exhibit 7: Hedge Fund Return and Risk Benefits in 2008



or practitioners to take the time to learn about the subject. I hope the above will drive a few to consider the CAIA program. It is not that mistakes will not be made as markets change, but I can guarantee that you will have help in understanding those changes.

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Appendix: Questions in Hedge Fund Investment

- Question 1:** Do stocks and bonds provide adequate diversification for investors?
- Question 2:** Do hedge funds provide adequate diversification for bond investors?
- Question 3:** Do hedge funds provide adequate diversification for equity investors?
- Question 4:** Do hedge funds provide diversification for stocks and bond portfolios?
- Question 5:** Is a hedge fund's past performance a predictor of future performance?
- Question 6:** Are hedge funds riskier than stock and bond investment?
- Question 7:** Do hedge funds add diversification benefits to portfolios?
- Question 8:** Are hedge funds absolute return vehicles?
- Question 9:** Do hedge fund strategies provide diversification to stock and bond portfolios?
- Question 10:** Is manager return-to-risk as consistent as strategy-return-to-risk?
- Question 11:** Do all fund of funds provide similar return and risk opportunities?
- Question 12:** Do hedge funds require their own unique measures of performance?
- Question 13:** How does survivor bias impact the measurement hedge fund index returns?
- Question 14:** Is hedge fund performance consistent with the size of fees?
- Question 15:** Is fund access an important part of potential hedge fund return?
- Question 16:** Can hedge funds and hedge indices be replicated?
- Question 17:** How usable are hedge fund data sets?
- Question 18:** Do funds that follow the same type of strategy behave very differently?
- Question 19:** Do similar indices from different index providers behave very differently?
- Question 20:** Are the true risks of hedge funds underestimated?
- Question 21:** Are hedge fund distributions normally distributed?

- Question 22:** Can information ratios be highly misleading?
- Question 23:** Can alphas be highly misleading?
- Question 24:** Is hedge fund diversification a free lunch?
- Question 25:** Do hedge funds combine well with equity?
- Question 26:** Is modern portfolio theory too simplistic to deal with hedge funds?
- Question 27:** Is style purity important in the construction of hedge fund of funds?
- Question 28:** Are composite hedge fund indices useful?

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