Hedge Fund Return Due Diligence: *Identifying When a Hedge Fund Manager is Fraudulently Reporting*

Investors need to ensure that self-reported hedge funds returns are proper and not being misreported – "avoid the next Madoff".

Axiom Valuation

AIRAS

Alternative Investment Return Authentication Service

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Stan is the chief valuation officer for the company, and has overall responsibility for the company's signed valuation reports and for the company's valuation analysis systems. He directly manages the company's valuations for financial reporting and fair value projects.

Stan has consulting and academic experience in the valuation of privately held and publicly traded firms, along with extensive real world experience. He is an expert in the valuation of complex financial securities, including thinly traded equity and fixed income instruments, and public and privately held businesses. He helped to draft FAS 157(now Topic 820), the fair value standard, as a member of the Financial Accounting Standards Board's (FASB) Valuation Resources Group, an external advisory committee on valuation issues.

Stan received a B.A. in Economics from the City University of New York, Hunter College, a M.A. in Economics from the New School for Social Research, and a Ph.D. in Economics from New York University.

About Axiom Valuation Solutions

Axiom Valuation Solutions is a nationally recognized financial security and business valuation firm. We have conducted valuation assignments for clients throughout the U.S., Europe and Asia. We regularly conduct fair value assignments for financial institutions in terms of fair valuing portfolio assets and liabilities as well as acting as an advisor and assessing whether internal transfers between funds meet the fair value standard. Our Co-founder and Chairman, Dr. Stanley Jay Feldman, was a member FASB's Valuation Resource Group, an advisory group to FASB on fair value issues. AIRAS is currently used by institutional investors to both validate self-reported returns and fair values of alternative investment managers.

For more information, please visit

www.axiomvaluation.com

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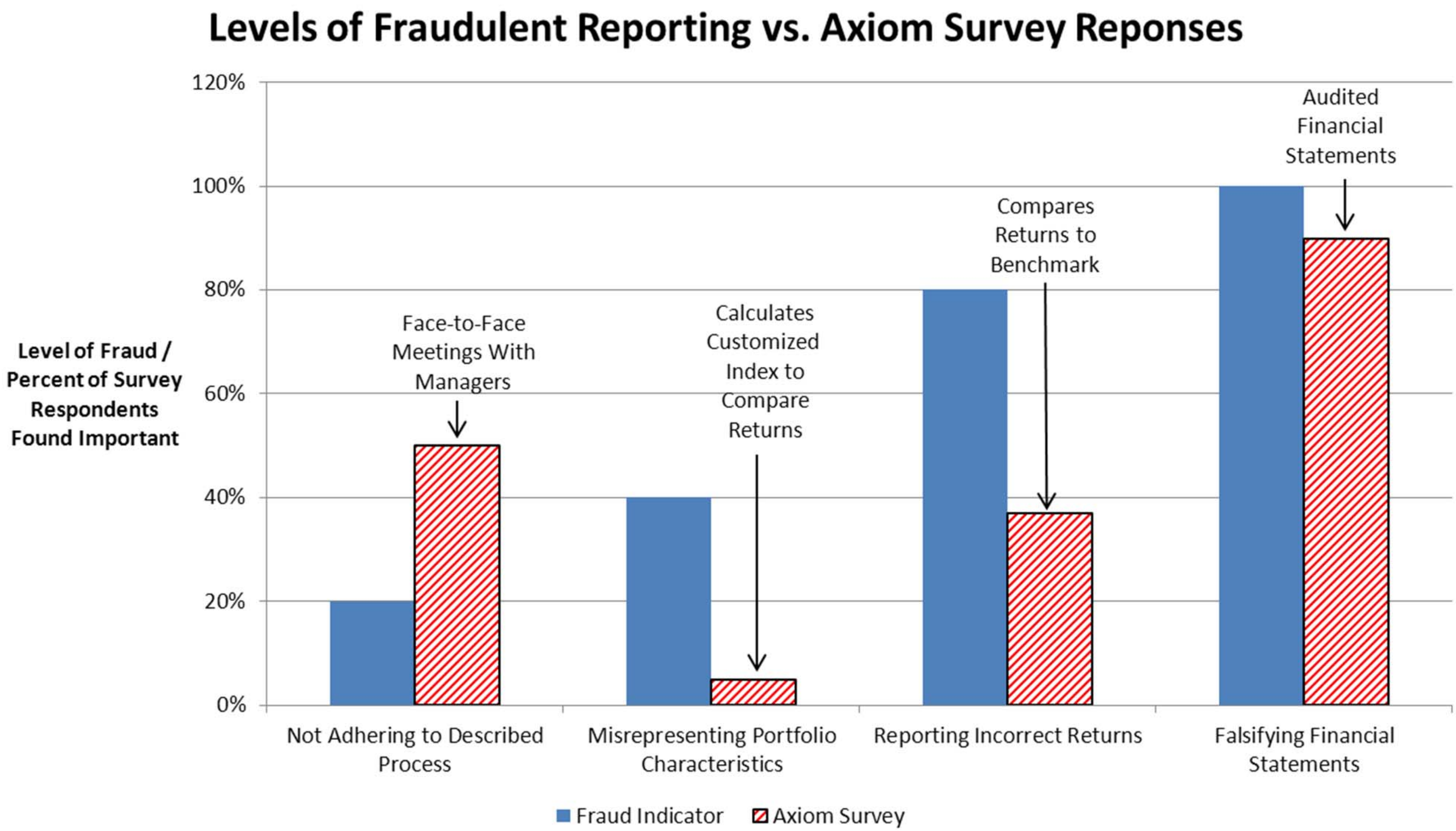
Topic Outline

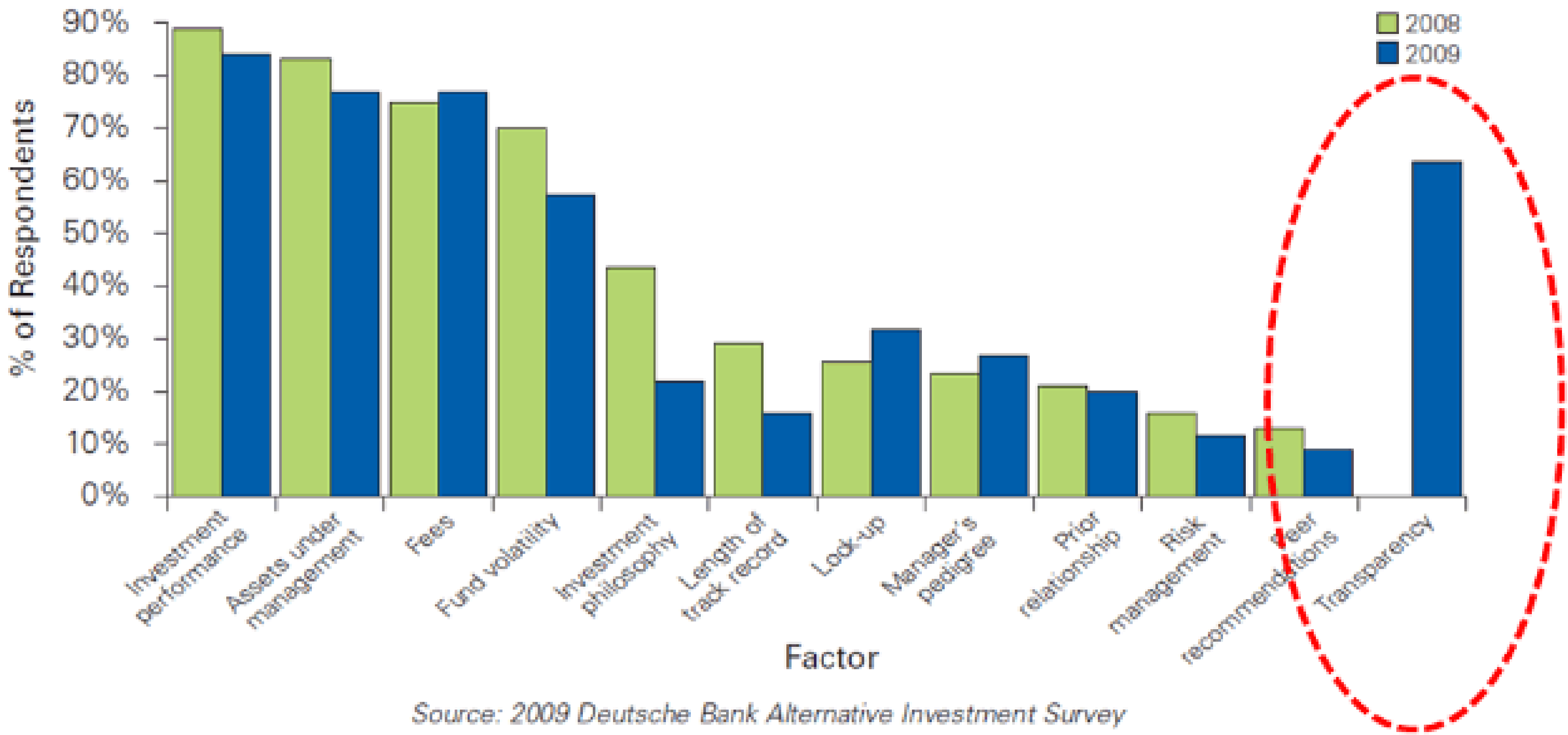
Defining Fraudulent Reporting

- Characteristics of Fraudulent Reporting versus Axiom's 2010 Institutional Investor Survey Responses



Transparency is a Top Five Factor When Assessing a Hedge Fund Manager

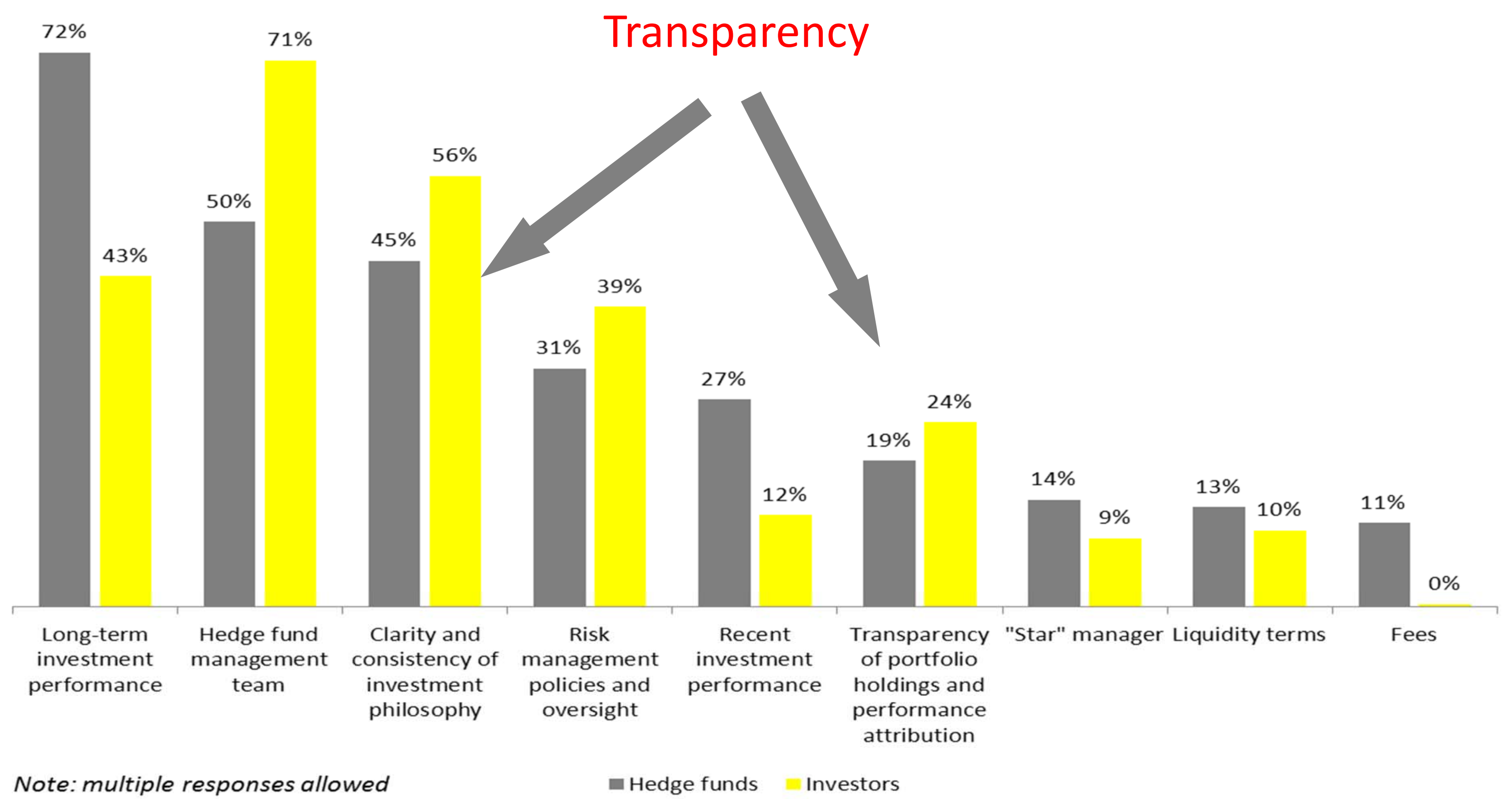
What FIVE factors are most important when assessing a hedge fund manager?



Source: 2009 Deutsche Bank Alternative Investment Survey

There is a Disconnect Between the Value Investors and Hedge Fund Managers Place on Transparency

- Hedge Fund Managers Rate Transparency as Less Important Than Investors



Source: E&Y

Coming of age Global hedge fund survey 2011

What Can We Conclude So Far?

- Investors value increased transparency.
- Investors correlate increased transparency with receiving more information from managers about:
    1. Investment Philosophy
    2. Depth and reputation of investment management team
    3. Information related to oversight and related investment practice
- Given the "opaqueness" of hedge funds, investors do relatively little analysis to verify that self-reported returns and NAVs are not being fraudulently reported.
- To the extent that investors in the most opaque hedge funds appear to "trust" and not "verify", fraud is likely to become a larger not a smaller problem going forward.

Not all Funds are Equal on the Transparency Scale

Transparency Scale

Full Transparency → **No Transparency**

	Full Disclosure	**Partial Disclosure**	**Little Disclosure**
Releases Security Level Detail	Yes	Sometimes	No
Publically Traded Securities	Yes	Sometimes	No
Daily Price/NAV Reporting	Yes	Sometimes	No
Return Easily Verified	Yes	Sometimes	No
Releases Portfolio Level Characteristics	Yes	Yes	Sometimes
Monthly/Quarterly Returns Reporting	Yes	Yes	Yes
Typical Type of Funds	**Mutual Funds**	**Hedge Funds**	**Fund of Funds**

The First Step in the Verification Process is to Develop a Transparency Score for Each Hedge Fund

#	Question	Yes/No	Points	Points Available
1)	*If the hedge fund reports audited returns as of the investor audit date, does the hedge fund auditor verify that audited returns are based on validating position level detail?*			100
2)	*If the hedge fund reports audited returns as of the investor audit date, does the hedge fund auditor verify that audited returns are based only on sampling position level detail?*			35
3)	*Does fund release security level detail to investors?*			50
4)	*Does fund provide current portfolio level characteristics?*			25
5)	*Is There Monthly/Quarterly Return Reporting?*			10
6)	*Are reported hedge fund returns compared to the returns from a customized benchmark index that has the same portfolio characteristics as that disclosed by the hedge fund manager?*			75
7)	*Are reported hedge fund returns compared to the returns from a publicly available hedge fund return index that does not have the same portfolio characteristics as that disclosed by the hedge fund manager?*			10
8)	*Are All Securities Publicly Traded?*			10

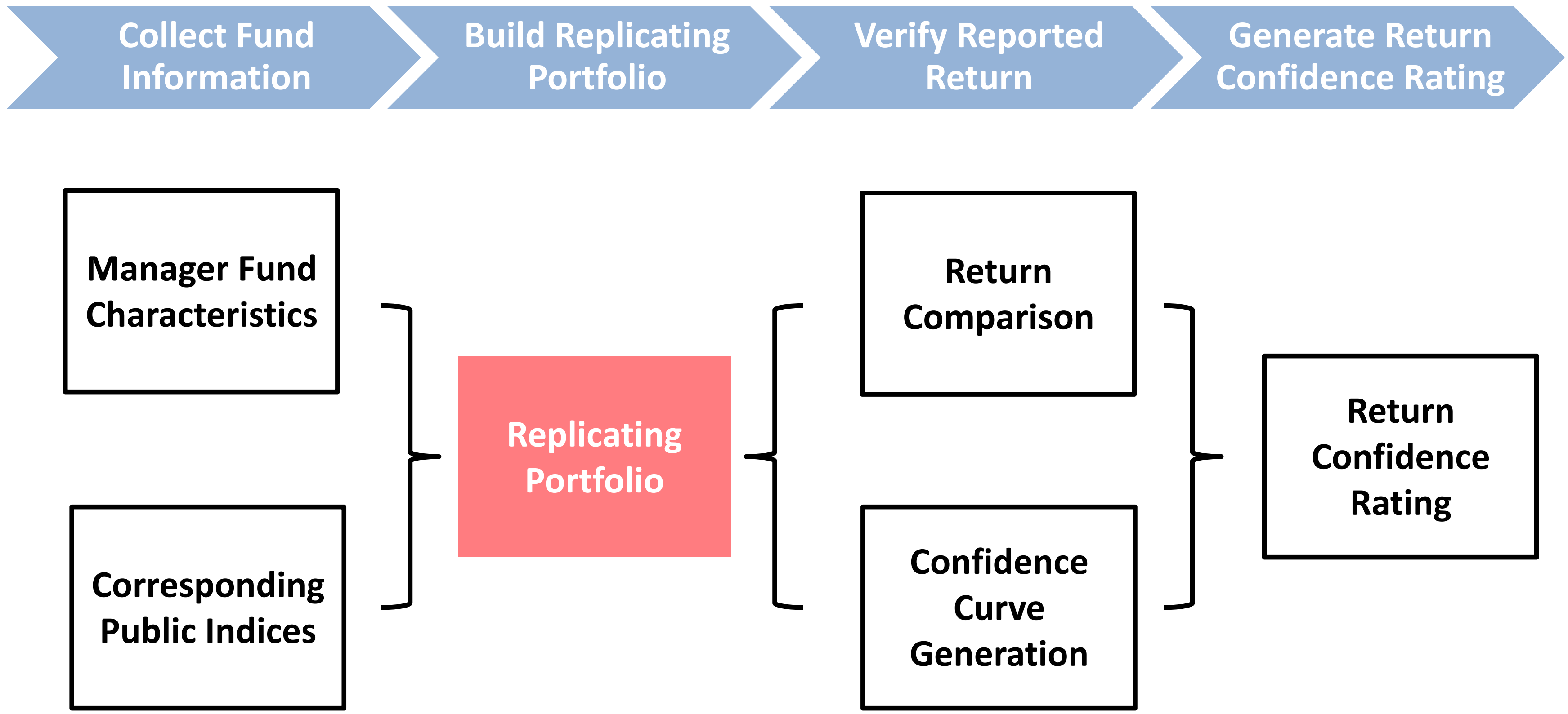
Total Points	0
Total Transparency Score	Low

Note: Total Points Greater Than 100: High Transparency
Total Points Less Than 100 Greater Than 50: Medium Transparency
Total Points Less Than 50: Low Transparency

The Solution:

Portfolio Replication is the Solution to Proper Hedge Fund Return Due Diligence

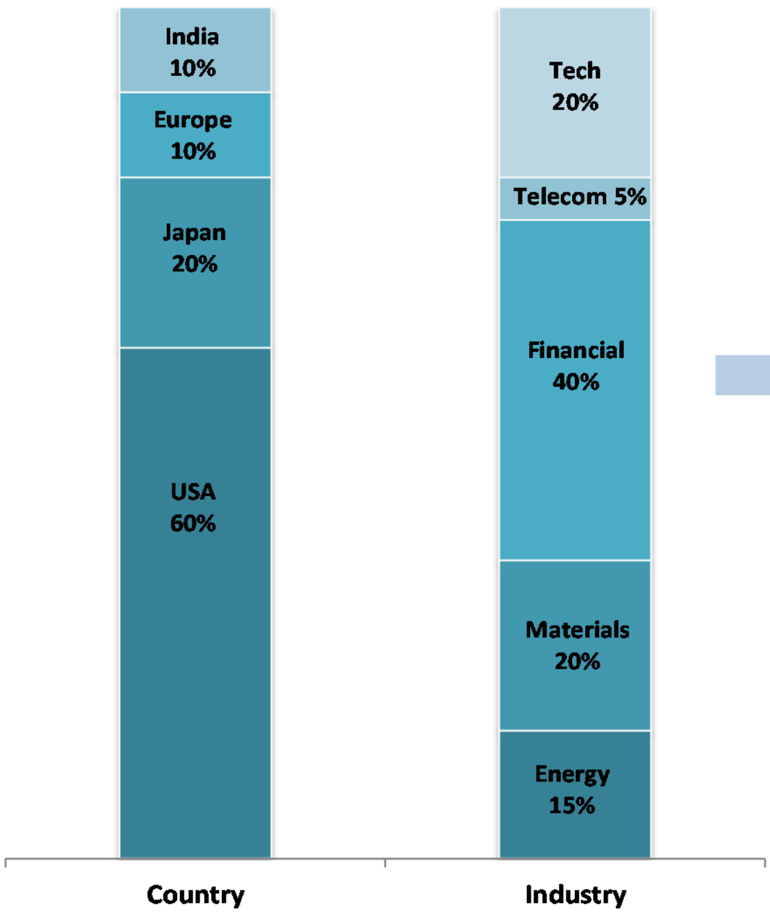
An Approach to Return Due Diligence



Replicating Portfolio is a customized benchmark using Manager's reported asset weights and corresponding public indices.

Replicating Portfolio

Fund Characteristics Weights



Detailed Portfolio Weights and Returns

Weights

	USA	Japan	Europe	India	Total
Energy	9.0%	3.0%	1.5%	1.5%	15.0%
Materials	12.0%	4.0%	2.0%	2.0%	20.0%
Financial	24.0%	8.0%	4.0%	4.0%	40.0%
Telecom	3.0%	1.0%	0.5%	0.5%	5.0%
Tech	12.0%	4.0%	2.0%	2.0%	20.0%
Total	60.0%	20.0%	10.0%	10.0%	100.0%

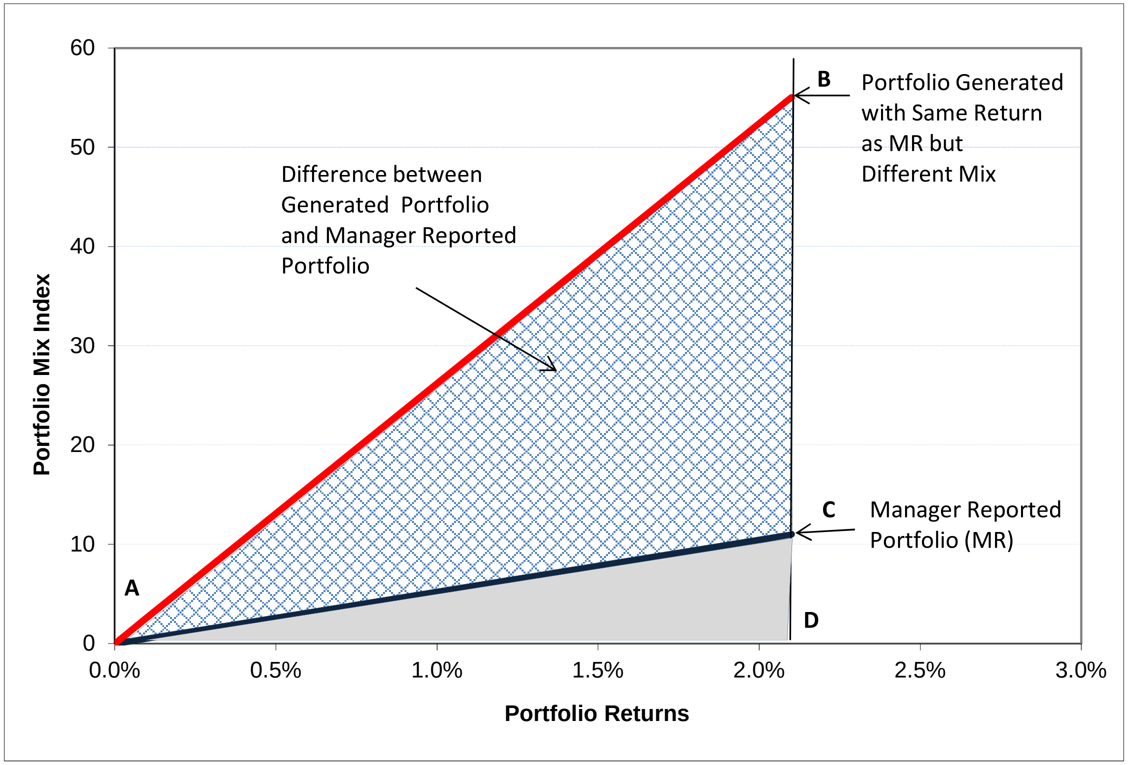
Returns

	USA	Japan	Europe	India	Total
Energy	10.2%	8.3%	9.4%	5.5%	
Materials	8.3%	5.4%	2.3%	2.5%	
Financial	-4.5%	-2.1%	-6.2%	-3.0%	
Telecom	9.2%	5.1%	2.2%	4.1%	
Tech	4.1%	-2.5%	-1.1%	2.1%	
				Portfolio Return	1.9%

Replicated Portfolio Return (Weights * Returns)

Measuring the Probability of Fraudulently Reporting

Return equality does not infer the absence of fraud. The larger the area of difference, as shown below, the less confident we are that the two portfolios are equal: In this example the only way to obtain the same return is to create a portfolio that is very much different than that disclosed by hedge fund manager.



Area difference, represented by the area bordered by points A-B-C is compared to the total area A-B-D to assess the level of confidence.

Case Study:

Looking at Fairfield Sentry (a Madoff Feeder Fund) in the Early Years of the Fund

Returns Due Diligence Scorecard

Fairfield Sentry (Madoff Feeder Fund) Return Due Diligence Scorecard
Auditor - PWC

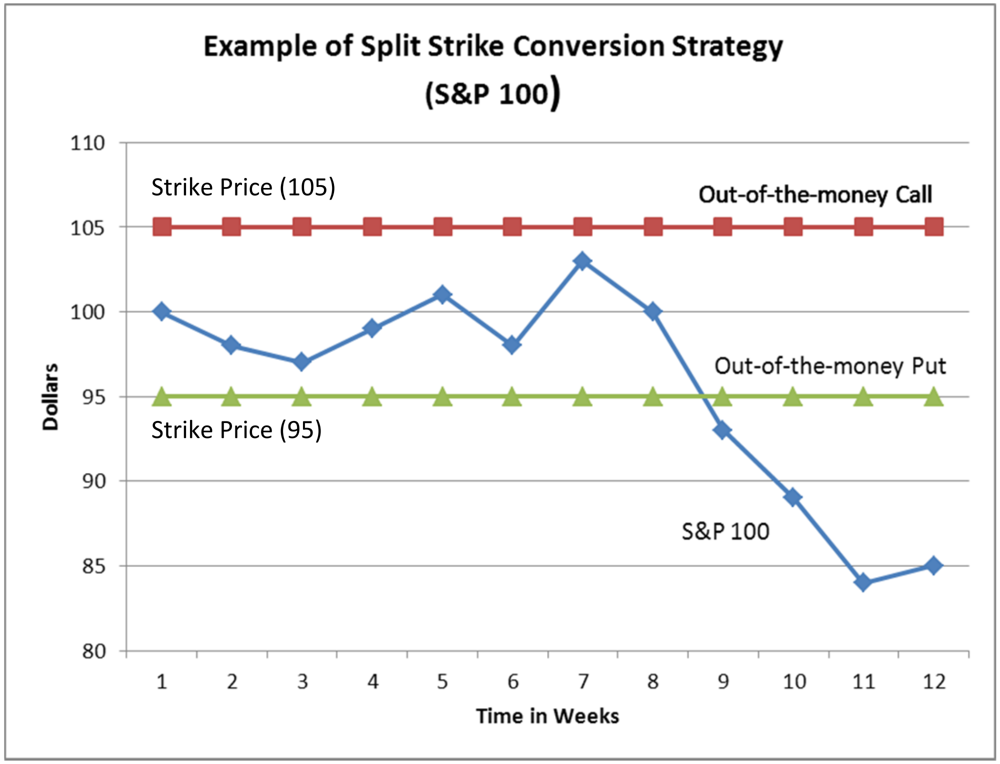
		Yes/No	Points	Points Available
1)	*If the hedge fund reports audited returns as of the investor audit date, does the hedge fund auditor verify that audited returns are based on validating position level detail?*	No	0	100
2)	*If the hedge fund reports audited returns as of the investor audit date, does the hedge fund auditor verify that audited returns are based only on sampling position level detail?*	No	0	35
3)	*Does fund release security level detail to investors?*	No	0	50
4)	*Does fund provide current portfolio level characteristics?*	Yes	25	25
5)	*Is There Monthly/Quarterly Return Reporting?*	Yes	10	10
6)	*Are reported hedge fund returns compared to the returns from a customized benchmark index that has the same portfolio characteristics as that disclosed by the hedge fund manager?*	No	0	75
7)	*Are reported hedge fund returns compared to the returns from a publicly available hedge fund return index that does not have the same portfolio characteristics as that disclosed by the hedge fund manager?*	No	0	10
8)	*Are All Securities Publicly Traded?*	Yes	10	10

Total Points	45
Total Transparency Score	Low

Note: Total Points Greater Than 100: High Transparency
Total Points Less Than 100 Greater Than 50: Medium Transparency
Total Points Less Than 50: Low Transparency

Madoff Fund Case: Fund "Characteristics"

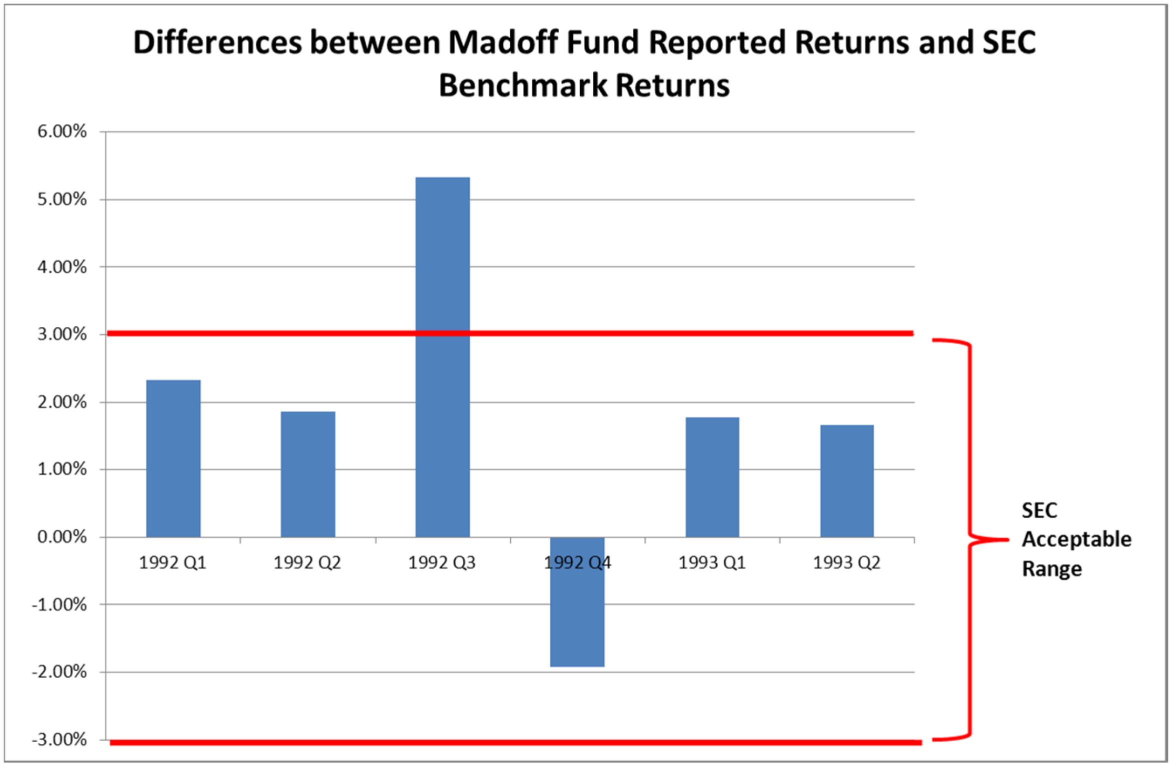
Madoff's "Split Strike Conversion Strategy" as described in Fairfield Sentry (a Madoff Feeder Fund) marketing material.



- Takes long positions in a subset of the S&P 100 Stocks
- Buys Out-of-the-money (usually 5%) S&P 100 Puts Equal to the value of the long stock positions
- Sells Out-of the-money (usually 5%) S&P 100 Calls Equal to the value of the long stock positions
- Options were 3 months in duration

Madoff Returns in Excess of Portfolio Benchmark Returns

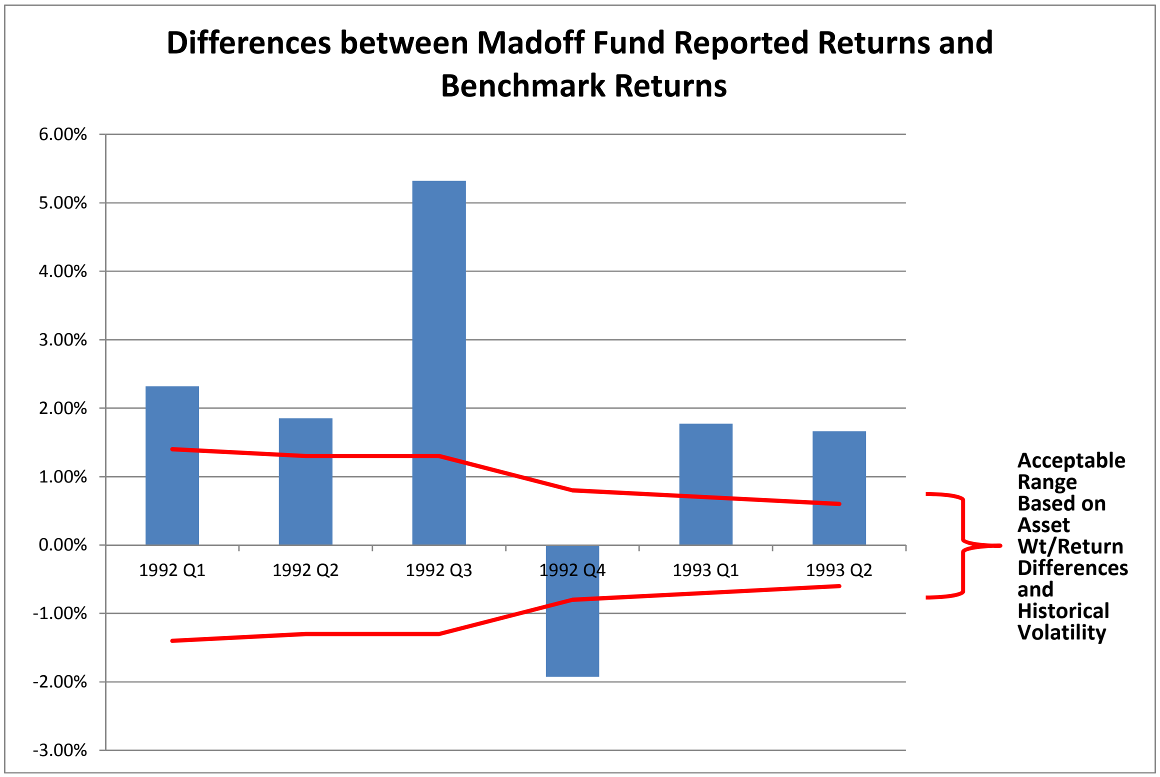
Comparing Madoff Excess Returns to SEC 3% Guideline Would not Have Resulted in Further Investigation by the SEC



SEC's API system uses a 3% difference as the trigger to investigate whether a Hedge Fund is fraudulently reporting. While Madoff posted one quarter's return where the difference is greater than 3%, this would not be sufficient proof for the SEC to trigger an investigation since in other quarters the returns were well within the SEC standard.

Madoff Fund Case: Results – Failed in Each Period

The level of confidence that one can recreate the manager's disclosed portfolio in terms of asset weightings and the self-reported return is low.



Although differences in reported returns versus the benchmark seem low, the results are outside the acceptable range when using asset weight / return differences and historical volatility, which indicates there is high likelihood that the manager is fraudulently reporting.

Please visit http://www.avairas.com/campaign_documents/Madoff_Article.pdf for our more detailed analysis of Madoff

Some Final Thoughts

- When investing in hedge funds, investors are taking on transparency risk which in many cases is large, not easily quantified, and is not being priced.
- Under the above circumstance, the chances of fraud increase thus requiring investors to perform far greater quantitative due diligence. Replication is a statistically proven method to do this.
- Audit coverage does not protect against fraud particularly where funds are opaque and/or the fund's audit date is distanced from the investor entity's valuation date.
- Trust but Verify will increase the chances of detecting fraud.

Financial Times Article

FINANCIAL TIMES

December 17, 2008 11:40 pm

Biggest Madoff loser eyes legal move on PwC

By Henny Sender and Joanna Chung in New York and James Mackintosh in London

The fund believed to be the biggest single loser in Bernard Madoff's alleged $50bn "Ponzi" scheme is considering suing PwC, its own accountants, for failing to detect the fraud, as victims start looking for deep-pocketed sources of compensation for their losses.

Fairfield Greenwich, whose clients stand to lose $7.5bn invested with Bernard L Madoff Investment Securities, is considering the action after an auditor was named in a case brought by another victim.

Mr Madoff was on Wednesday ordered to submit to electronic monitoring and given an overnight curfew in his Manhattan apartment. His wife was ordered to surrender her passport.

With three of the four biggest accountancy firms – PwC, KPMG and Ernst & Young – auditing the Madoff feeder funds, lawyers say the asset-rich firms are likely to be targeted for legal action.

Madoff Securities was audited by a tiny operation in Rockland County, New York, with only three employees, making it an unlikely potential source of compensation for victims.

The New York Law School this week named BDO Seidman, part of BDO International, the fifth-biggest auditor, in its legal action against Ezra Merkin and his Ascot Partners fund, which invested its money with Madoff. Ascot was audited by BDO.

BDO said it did not audit Madoff Securities, and its "audits of Ascot Partners conformed to all professional standards and we will vigorously defend ourselves against these unfounded allegations".

PwC, Fairfield and Ernst & Young declined to comment. KPMG said "our work conformed with all professional standards".