Hedge Funds: A High-Level Overview

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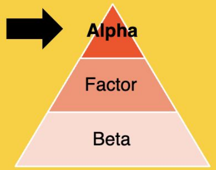
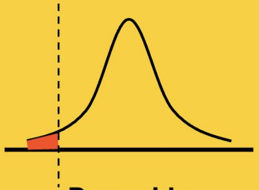


Alpha generation



Downside mitigation

Why Hedge Funds?

Portfolio diversification [1]

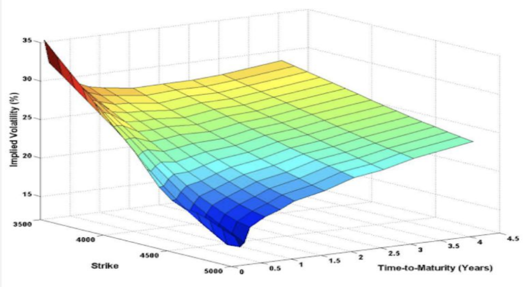
Access to unique/ niche opportunities

Hedge funds aim to deliver differentiated alpha that is:

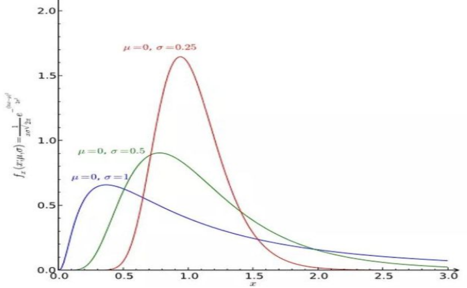
- Uncorrelated to traditional asset classes
- Favorably risk adjusted (High sharpe ratio, controlled drawdowns, controlled tails, consistent)
- Market neutral and factor neutral (idiosyncratic alpha)
- Positively skewed and consistent
- Asymmetric profiles (Greater upside capture with reduced downside risk)
- Repeatable investment processes backed by skill, not luck

These characteristics are difficult to produce consistently—but when present, they enhance portfolio efficiency, improve the portfolio's total sharpe ratio, and provide valuable diversification during periods of market dislocation.

Pensions and endowments must generate reliable returns across full market cycles to meet their long-term liabilities. Hedge funds—particularly those with low beta, asymmetric returns, and strategy-specific alpha—play a vital role in fulfilling that mandate.



Key Hedge Fund Risks



- **Factor Exposures** – What risks drive returns? (e.g., macro, equity, credit)
- **Leverage** – Notional vs Balance Sheet (derivatives, swaps, gross/net exposures)
- **Liquidity** – Redemption terms vs. underlying asset liquidity, % in level 2 or 3 assets
- **Position Sizing** – Concentration risk, tail events, crowded exits
- **Correlation Breakdowns** – Hidden basis risks in extreme environments
- **Crowded Trades** – Exposure to popular trades and herding behavior

Operational Risk – Controls, oversight, and process discipline

LTCM℠
The financial technology company

Jefferies-Linked Fund Faces $715 Million Risk From First Brands Receivables

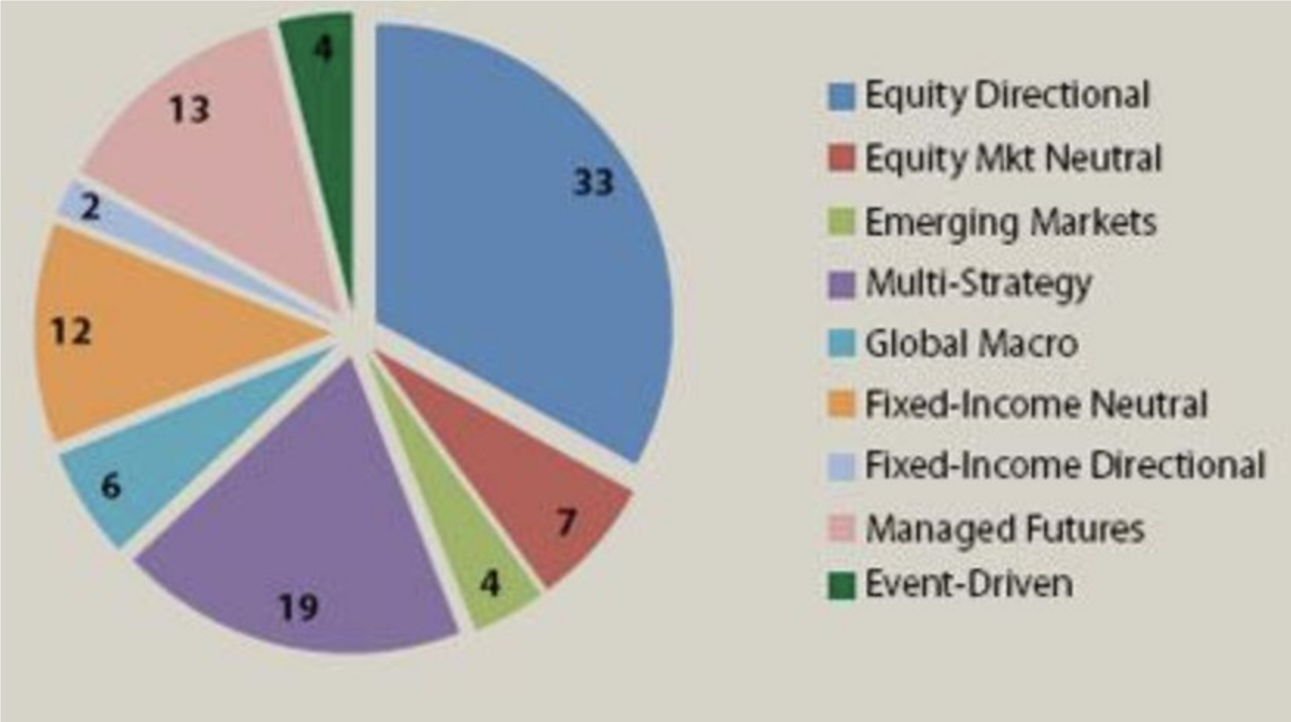
Other financial firms, including Nomura, SouthState Bank, hedge fund manager O'Connor, and CIT Group, have also been linked to First Brands.

What Can Go Wrong:
Lessons from Hedge Fund Collapses

Examples of hedge fund collapses:

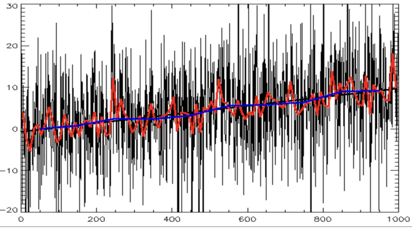
- **Madoff** – Fraud & fake NAVs (zero transparency)
- **LTCM** – Excessive leverage + tail-risk (correlation risk)
- **Melvin** – Short squeeze exposure & crowding
- **Point Bonita**- Happening right now! Not a collapse but emphasizes the importance of having portfolio transparency, understanding position sizing, hedging, and evaluating whether the portfolio holdings are crowded among peers.

Finding the Right Hedge Funds Amid a Sea of Strategies: The Art of Hedge Fund Selection

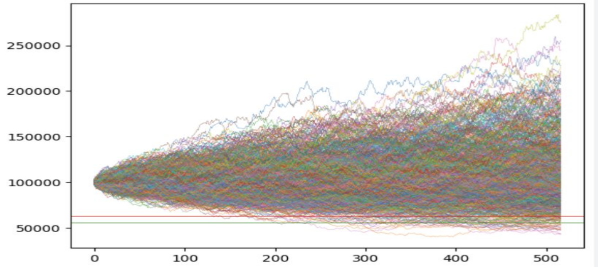


Qualitative Due Diligence

- **Repeatability/skill:** Understand manager’s edge/what makes it sustainable going forward.
- **PM Interviews & Onsite Visits**: Validate investment process, tools, research pipeline, and risk controls (office settings change through time).
- **Reference Checks**: Quietly gauge reputation/past behavior, check LinkedIn connections.
- **Marketing Materials:** Shift in tone through time, fine print, differences between promises and realized behaviors.
- **Operational Due Diligence (ODD)**: Review governance, compliance, cybersecurity, valuation policies, prime broker diversification and terms.



Quantitative Due Diligence



- **Track risk/return trends over time:** VaR through time, Sub-sector VaR, liquidity, rolling volatility.
- **Monitor changes in factor loadings**: Is alpha disguised as beta to common factors? Are factor exposures structural (persistent) or dynamic (adaptive)? Use positions and performance to identify factor loadings.
- **Detect shifts in portfolio construction:** Sector tilts, leverage, liquidity, hedges (index vs pair trades or custom baskets, hedge ratios, alpha shorts vs hedge short), use of derivatives.
- **Changes in Portfolio:** Thesis sizing/timing & overlap to peers, position sizing, turnover through time, uses of hedges and how they evolve,
  Skin in the game: What percent of the PM's net worth is in the fund?
- **Fees/AUM:** AUM growth can hinder returns, managers can become complacent.
- **Peer Comparison:** Risk-adjusted return vs. competitors within the strategy.

Lucrative Technical Skills Employers Are Hiring For

Applied statistics, Monte Carlo, Time Series Analysis, Risk Management, Derivatives, Python, SQL, VBA, Excel, Financial Market Theory, Money and Banking theory, Portfolio Theory, Optimization, Machine Learning (Ridge, Lasso, PCA), Econometrics, Some Fundamental Valuation Skills (Quantamental Funds), Understanding Hedge Fund Instruments.

Use your resources: Speak to professors outside class (go get coffee and go to office hours), EML Lab, Bloomberg terminal (use optimizer and other tools), Wharton Database (play with data), Kaggle.com, Financial Times subscription.

Reflections on Growth from Class to Career

- Be Humble, and listen more than you speak during meetings.
- Understand your personality/biases and deeply reflect on how to improve yourself.
- Don’t just do what everyone else is doing (following jobs for the brand name rather than the job contents).
- Actively seek your professors in office hours and go for coffee chats.
- TA a class, do research, find ways to apply your technical skills in the real world.
- Most important, ask your advisor questions, understand the system yourself and triple check that you are following the most optimal course plan. Use pass/fail for tough elective classes that you wouldn't take due to grade fears.
- Prioritize your time with family whenever possible.