Hedge Funds

Hedge Funds Overview

Gonçalo Sommer Ribeiro

- Gonçalo Sommer Ribeiro, CFA
  - Practitioner for 12y +
  - Executed most of strategies being discussed
  - Macro focus
  - Quant Strategies
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- Miguel Marecos, CFA
  - Value Investor, 10y + Experience
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- Access:
  - Moodle Enrolment Key: **HFT422**
  - Teams Code: **o8dv8n5**

- Classes:
  - Tuesday 16h30 - 18h00, Room B010
  - Friday 16h30 - 18h00, Room B010

Hedge Funds
Introduction
About the Course

- Very practical, market oriented, real-life examples
- Study most common investment strategies of HFs
- What can you expect from the course? Market basics + methodology to research-> research team skills
- What do we expect from you?
  - Basic Concepts of - stocks, bonds, futures, options, portfolio theory
  - Use Excel and Market data (from Bloomberg, Reuters, Data.xls) to back-test investment strategies
- Prepare students to work in financial markets – investment bank, investment fund or Hedge-Fund

- Assignments 30%
  - Already on Moodle
- Final Project 20%
  - Groups **4** people
  - Assignments + Project - Short reports (1 page, 3-4 pages respectively)
- Exam 50%
  - Exam based on class materials (T/F + Multiple Choices + short questions)

- Textbook
  - Antti Ilmanen, 2011, *Expected Returns: An Investor's Guide to Harvesting Market Rewards*, Wiley Finance
- Research Papers
- Macroeconomic notes, news, analysis
- Lots of readings. **Need to be selective**. Read abstract and the conclusion – select what is most interesting and specialize in that area
- Videos

Hedge Funds

Introduction

What do you know about Hedge Funds?

Hedge Funds
Characteristics of Hedge Funds

- **Investment objectives**
  - Focus on capital protection (low risk)
  - Absolute return, no benchmark (low beta)
- **Flexible investment policy**
  - All asset classes, all instruments, all markets
  - Allow short-selling and leverage
- **Unregistered / unregulated**
  - Not sold to retail investors, only qualified investors
  - Target institutional investors + XL individuals → diversification = low beta | protection = low risk
  - Limitations on solicitation / advertising
- **Fees and liquidity**
  - Management fee + perform. fee (ex 1.5%, 20%) → attract talent
  - Limited liquidity (monthly / quarterly / gates / lock-ups)

Hedge Funds History
From the beginning…

- 1st Known HF
  - 1949, Alfred W. Jones, USD 100k, **Equity Long-Short**
  - Hedge market risk (Beta) by short selling stocks and…
  - …increase stock picking risk (Alpha) with the use of **leverage**

- 1st Well Known HF
  - 1970, George Soros, Quantum Fund, **Global Macro**
  - Earned 36% pa for 25 years (until fund closed to outside investors)
  - *Rec. book: "Alchemy of Finance"*

- Good performance led to strong growth and to a large number of different strategies

Hedge Funds History
To bad examples….

- Since most HFs do little or none advertising... public only knows of big problems
- Some big Failures
  - 1998, **LTCM**, lost U$ 5b in fixed income arbitrage
    - FED had to intervene due to systemic risk
    - *Rec. book: "When genius failed" (R.Merton and M.Scholes)*
  - 2000, **Tiger Funds**, lost U$ 2b shorting the dot-com bubble
  - 2006, **Amaranth**, lost U$ 6b in natural gas spreads
  - 2021, **Archego**, managed U$10b before margin call linked to Reddit stocks
- Some big Frauds
  - 2008, **Maddof** lost U$ 50b in a ponzi scheme (not a real HF)
  - Insider Trading – SAC, Galleon, Pequot *Rec. book: "Black Hedge"*

Hedge Funds History

… to great successes...

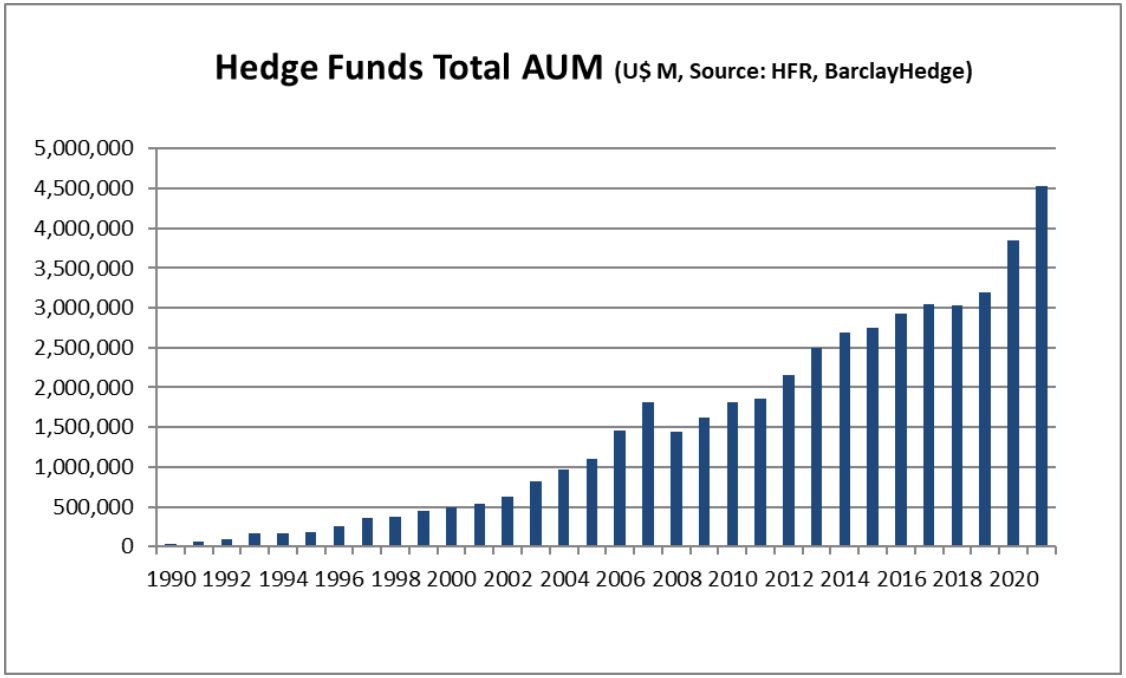
- But also some big Sucesses (not so widely advertised)
  - Bridgewater Pure Alpha and AllWeather
  - Quantum Fund
  - Baupost Group
  - Moore Capital
  - Caxton Associates
  - Farallon Capital
  - Winton Futures
  - Paulson Credit Opportunity
  - Medallion
  - BrevanHoward, Appaloosa, AQR, DEShaw, Citadel, Vega, GMO, Blue Crest, Getco, Tudor, Third Point, Greenlight Capital, TCI, Lone Pine, etc

Hedge Funds History
… and extraordinary returns

- Some Big Successes (largest HFs)
  - **Bridgewater Pure Alpha**, 18%pa over 25y+
  - **Quantum Fund**, 36%pa over 25y+
  - **Baupost Group**, 19%pa over 30y+
  - **Moore Capital**, 17%pa over 25y+
  - **Caxton Associates,** 14% over 30y+
  - **Farallon Capital**, 14% over 25y+
  - **Winton Futures**, 17% over 20y
  - **Medallion**, 40+% over 30y+ (net of 5/44)*

Good returns, even better **sharpe ratios** and % positive months
All highly unlikely under **EMH**

Hedge Funds
Strong Growth of Assets Under Management



- 17% annualized cumulative growth rate
- Still very small compared to 100T+ of total AUM globally

Hedge Funds
Types of Strategies

- Equity Long-Short
- Global Macro
- Systematic Trading
- Fixed Income Arbitrage
- Specialized Credit
- Event Driven
- Volatility Arbitrage
- Funds of Funds
- Multistrategy
- …among many others

Hedge Funds
Types of Strategies
Equity Long-Short

- **Long undervalued stocks and short overvalued stocks**
- … **or short index futures** (easier)
- Usually the hedged portfolios display a very low risk, so most managers increase it by using **leverage**
- They usually display returns uncorrelated to market performance
- Can be subdivided in
  - Long bias
  - Short bias
  - Pure market neutral

Ex. Alfred Jones, Tiger Global, JAT Capital, Coatue

Hedge Funds

Types of Strategies

Global Macro

- **Based on the manager's perception of prevailing macro-economic conditions and their impact on the financial markets…**
- **…establish directional positions (long or short) in different asset classes and in different regions of the world**
- Major focus is frequently on **interest rate positions**, as these are more directly related to economic conditions, but may take positions in all asset classes

- Macro is typically the most **discretionary** strategy and frequently one of the most **risky.** Some attempts at **systematic macro (**wp**).**

Ex. Soros Fund Management (ex-Quantum Fund), Caxton, Bridgewater

Hedge Funds

Types of Strategies

Systematic Trading

- **Investment decisions are based on some sort of system**, often automatically generated by a computer
- **Based on technical patterns, fundamental data, market anomalies, or other, and usually back-tested using historical data**
- **Diversification** of strategies is crucial to minimize the risk of model misspecification or changing market patterns

- Managers using this strategy are often mathematicians, physicians and software engineers

Ex. Medallion, AQR, Winton, OxAM

Hedge Funds

Types of Strategies

Fixed Income Arbitrage (Interest Rate risk)

- **Exploit pricing inefficiencies between related fixed income securities while hedging interest rate risk**
- Most common trades are **yield curve arbitrages (ex. 2-10, 5-30),** but may also include inter market spreads (ex. Bund vs TY), futures x bonds (CTD), bonds x swaps, caps-floors, swaptions, etc…
- May be duration neutral or have a long or short bias

Ex. Brevan Howard, Blackrock FI, LTCM

Hedge Funds

Types of Strategies

Specialized Credit (Default / Recovery risk)

- **Long credit that is perceived to be underpriced and short credit that is perceived to be overpriced**
- May arbitrage **different tiers** within the same company, different **companies**, **sectors** or even **countries**
- May trade corporate bonds, CDSs, CDOs, MBSs, ETFs, etc
- May have a market neutral view, a long bias or short bias (carry is usually important)

Ex. Paulson Credit Opp, Baupost, Fortress

Hedge Funds
Types of Strategies
Event-Driven

- **Invest in opportunities created by significant corporate events**, such as **M&A** deals, **spin-offs**, bankruptcies, **capital increases**, share buybacks, etc…
- The most common are **M&A deals** - usually the arbitrage involves buying shares of the target company and selling shares of the buyer, trying to profit with the completion of the deal
- But it can also do the opposite, betting on the breakup of the deal, or even bid up the price, betting on the appearance of a better offer
- Some attempts at **systematic event-driven (**wp**)**

Ex. Farallon, Cerberus Capital, Paulson Advantage

Hedge Funds

Types of Strategies

Volatility Arbitrage

- **Involves buying (selling) options or convertible bonds and hedging the equity risk by selling (buying) the underlying common stock (delta hedging)**
- This can be done using the appropriate delta or leaving a long or short bias
- May also arbitrage volatility between correlated assets (ex. Stock option x Index options, Variance Swaps, VIX x V2X)

Ex. Titan, AM Master, Castle Creek

Hedge Funds
Types of Strategies
Fund of Funds

- The FoF does the **due diligence** on each fund it invests in, easing life for non-specialized investors
- Main advantage – **diversification** – mitigates the risk inherent to each individual fund (important due to black box risk)
- Main disadvantage - **fees on fees** - may take away most of the alpha (positive perf pays, negative perf does not give back)
- Other advantage – specialization – every investor should focus on what is he good at

Ex. Permal, FRM, Fauchier

Hedge Funds

Types of Strategies

Multi-strategy

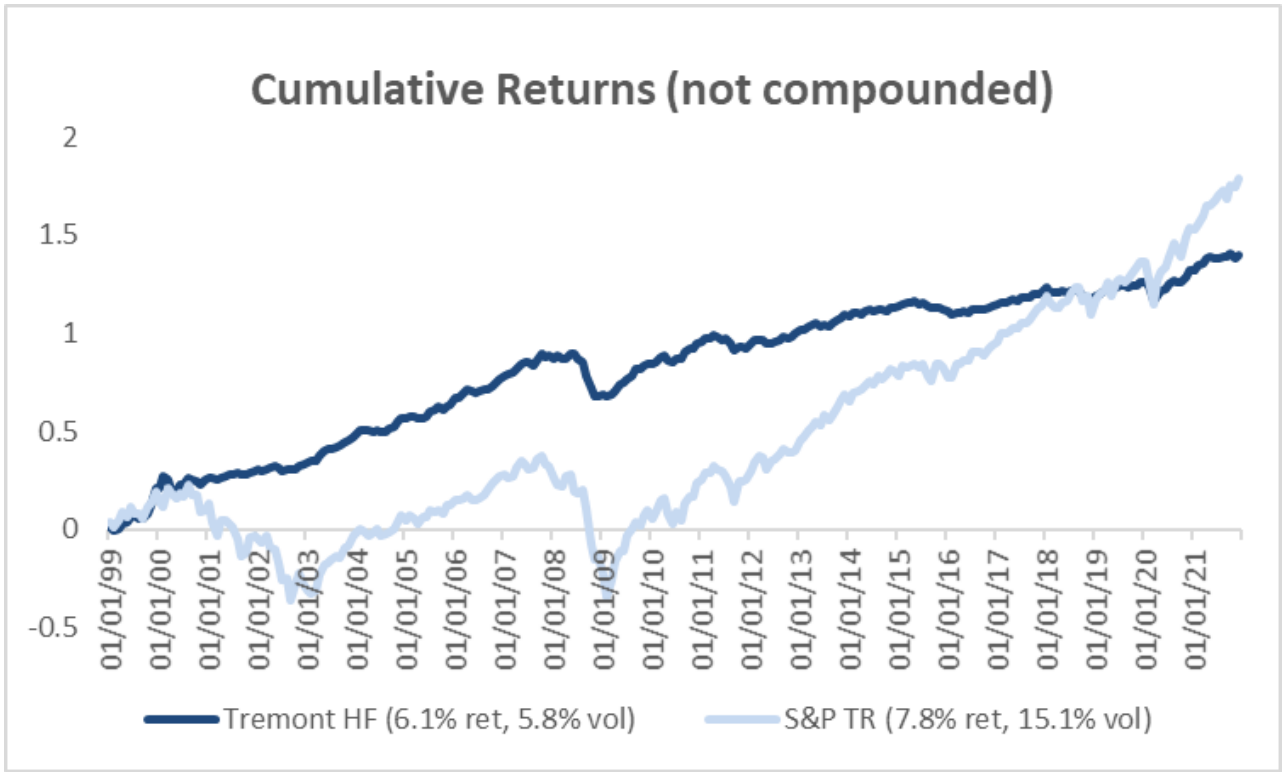
- Offer the **diversification without fees on fees**
- More flexible / faster in varying the weighting of each strategy according to opportunities and market trends
- **Less diversification / same view**
- Still some black box risk

Ex. Citadel, Stratus, DE Shaw

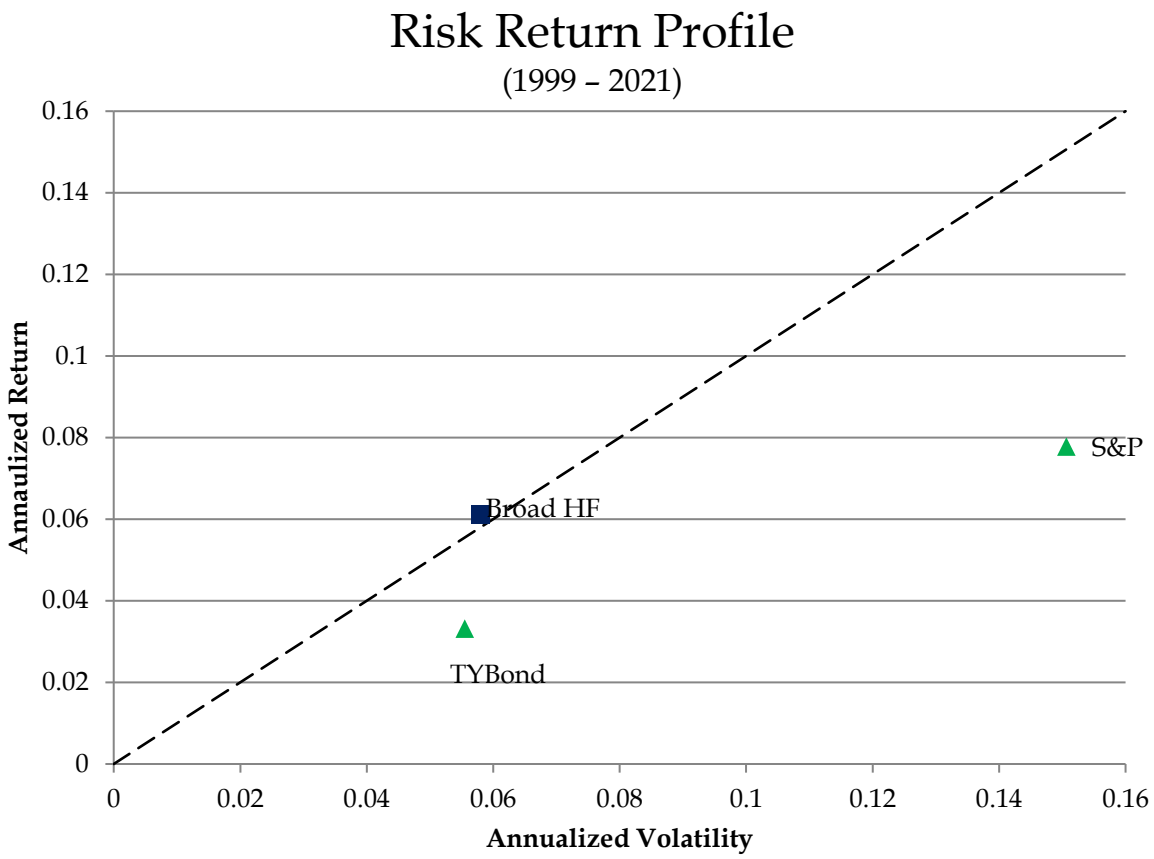
Hedge Funds

Historical Performance

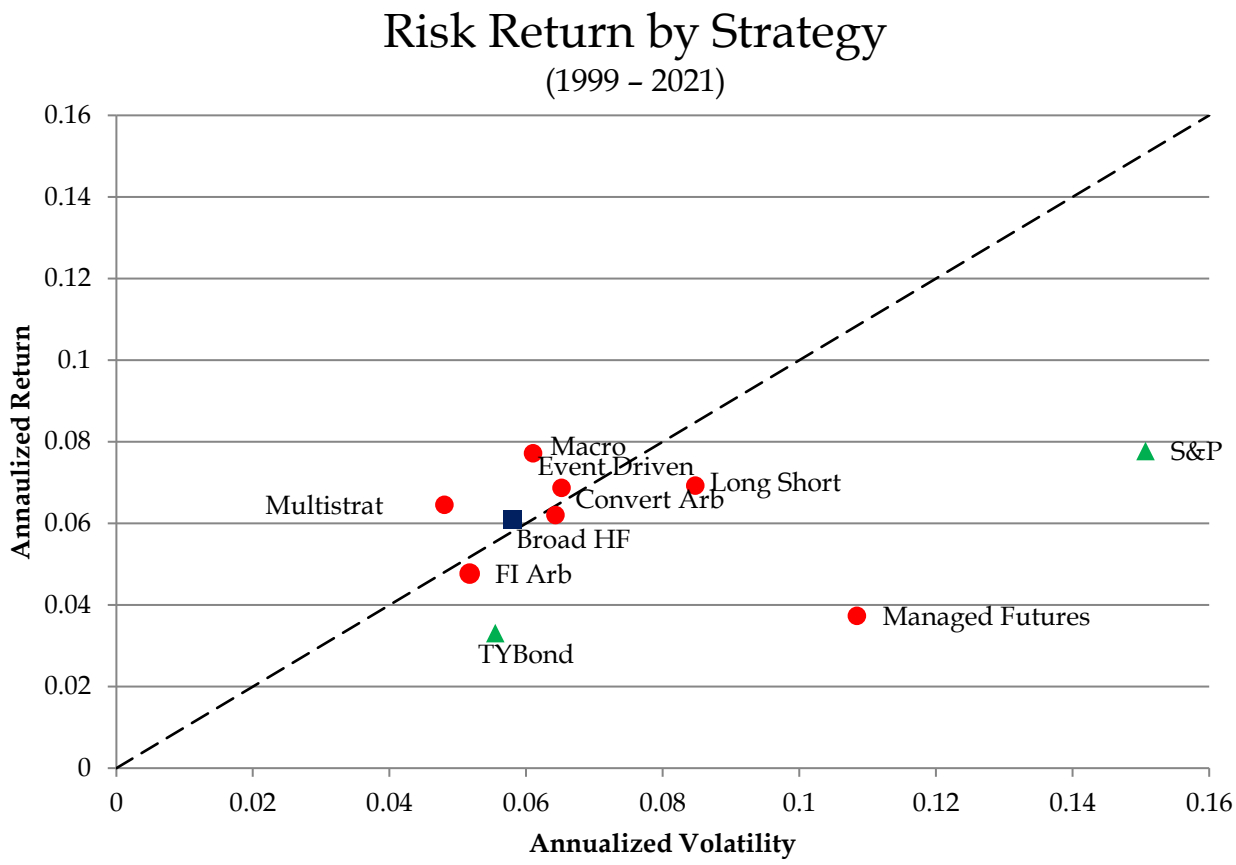
Equity-like returns with less volatility



Hedge Funds
Historical Performance
Better Info Sharpe Ratio



Hedge Funds
Historical Performance
Risk Return by Strategy

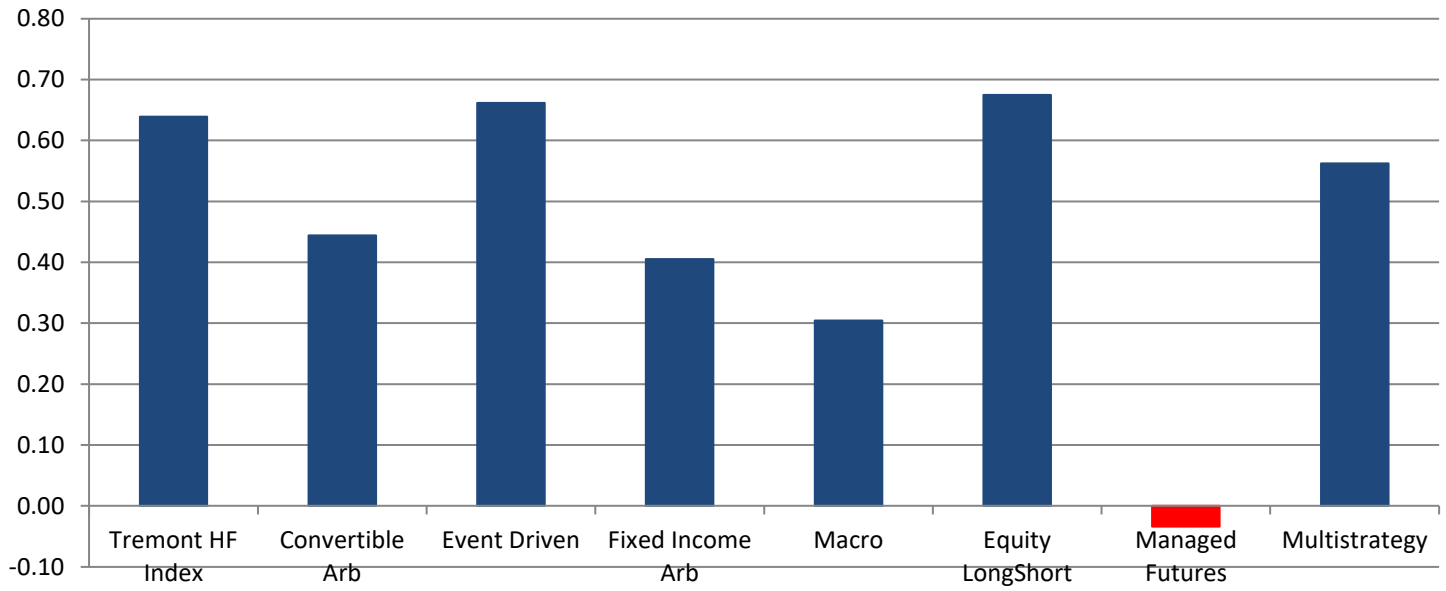


Statistical Properties of Returns (1999-2021)

	Mean	STD	Sharpe	Skew	Xss Kurt
Tremont HF Index	6.10%	5.80%	1.05	-0.61	2.46
Convertible Arb	6.20%	6.43%	0.96	-3.09	19.31
Event Driven	6.87%	6.52%	1.05	-2.37	12.21
Fixed Income Arb	4.77%	5.18%	0.92	-5.47	44.77
Macro	7.71%	6.10%	1.26	-0.36	0.64
Equity LongShort	6.93%	8.48%	0.82	0.05	0.62
Managed Futures	3.73%	10.85%	0.34	-0.03	-3.38
Multistrategy	6.46%	4.81%	1.34	-1.92	6.30
S&P Total Return	7.78%	15.07%	0.52	-0.72	-1.54
10Y Treasuries	3.31%	5.55%	0.60	0.21	-0.41

HF Tremont Indexes Correlations with S&P

(1999-2021)



Hedge Funds
Data Biases

- Hedge funds seem to have a great risk/return performance

- In fact, all funds alive and reported have had an exceptional performance in the past

- But two important biases:

1. **Back fill bias** - since most HFs are not public, indices are based on self-reported performance and usually **only successful funds report**
2. **Survivorship bias –** indexes only include the **funds that are still alive**; and there is a high degree of mortality among HFs (average life of 5y)

- According to some studies* these biases may account for up to 40% of the HF returns

* Ibbotson, Chen, Zhu (2010)