

Intro on Hedge Funds

AQF-2005

Hedge Funds

- What are hedge funds?
- Why is their performance measurement different from that of regular mutual funds?
- How should we analyze their performance?

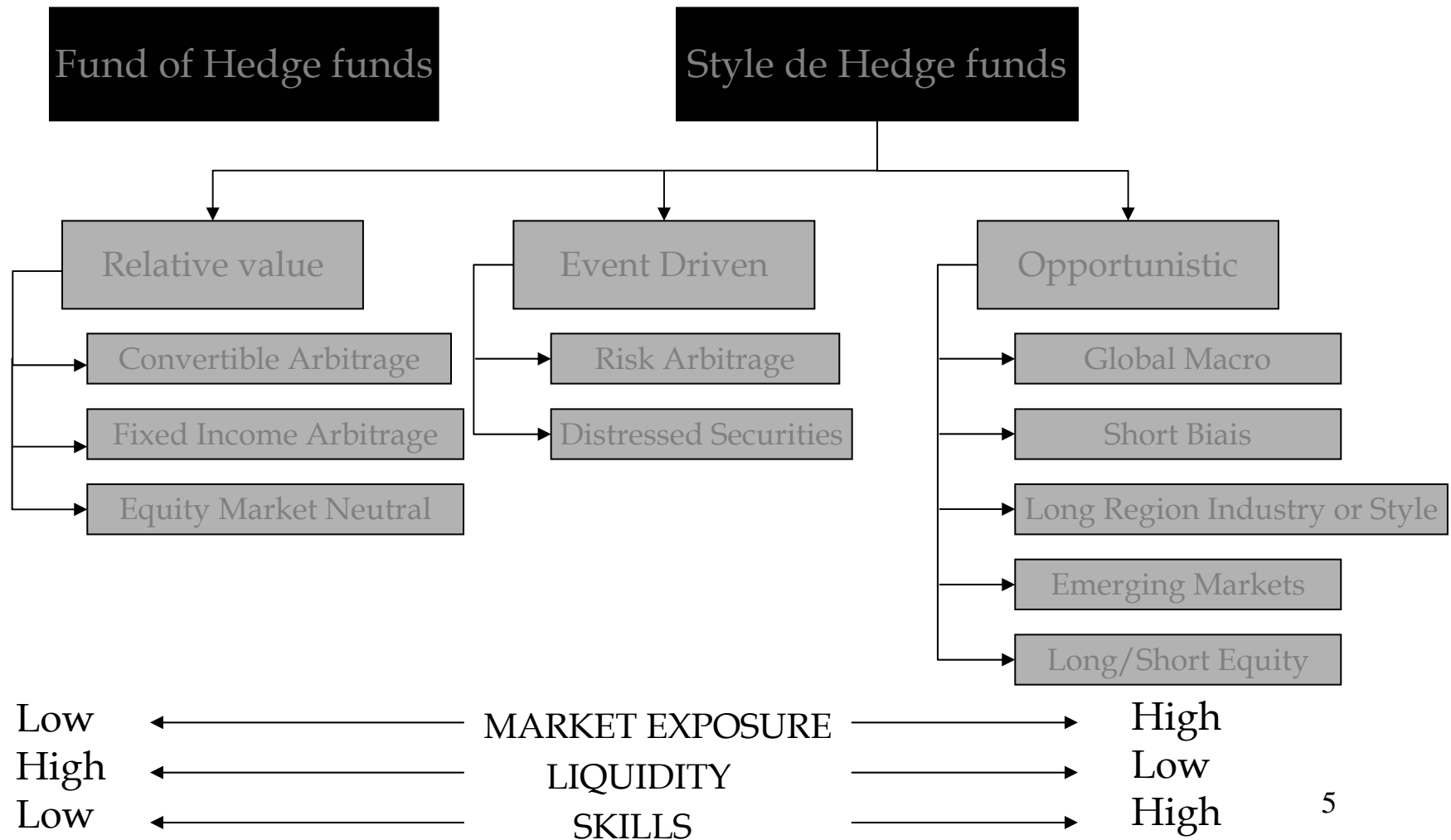
What is a hedge fund?

- Definitions of hedge funds
- [Hedge Fund definitions.doc](#)

Hedge Fund Styles

- Facts about hedge funds
- [Facts About the Hedge Fund Industry.doc](#)
- 1. Relative value vs. directional
- [styles.doc](#)

Classification des Hedge fund



Commodity Trading Advisors (CTA's)

- These are regulated by the CFTC, and can only invest mostly in exchange traded futures and options.

How Do We Benchmark a Hedge Fund?

- Problems with finding a benchmark:
- 1. Strategy may not have a corresponding “passive” counterpart, like an index.
 - For mutual funds, it is easy to create a passively managed index to serve as a benchmark, but it is not obvious how to do the same with a hedge fund strategy.
- 2. Strategies can vary over time: Hedge funds have the freedom to do what they want, and they may not adhere to their style.

What Hedge Funds Suggest Should Be the Benchmark

- Hedge fund typically suggest that they should be benchmarked against cash.
- When would it be appropriate to be benchmarked against cash?
 - It is appropriate (perhaps!) when the beta of the fund is zero, or that the correlation of the hedging strategy with traditional asset classes is zero.

Analysis of hedge fund returns

- style analysis
- how do we measure performance
- alpha vs beta
- linear factor models
- asset based factors

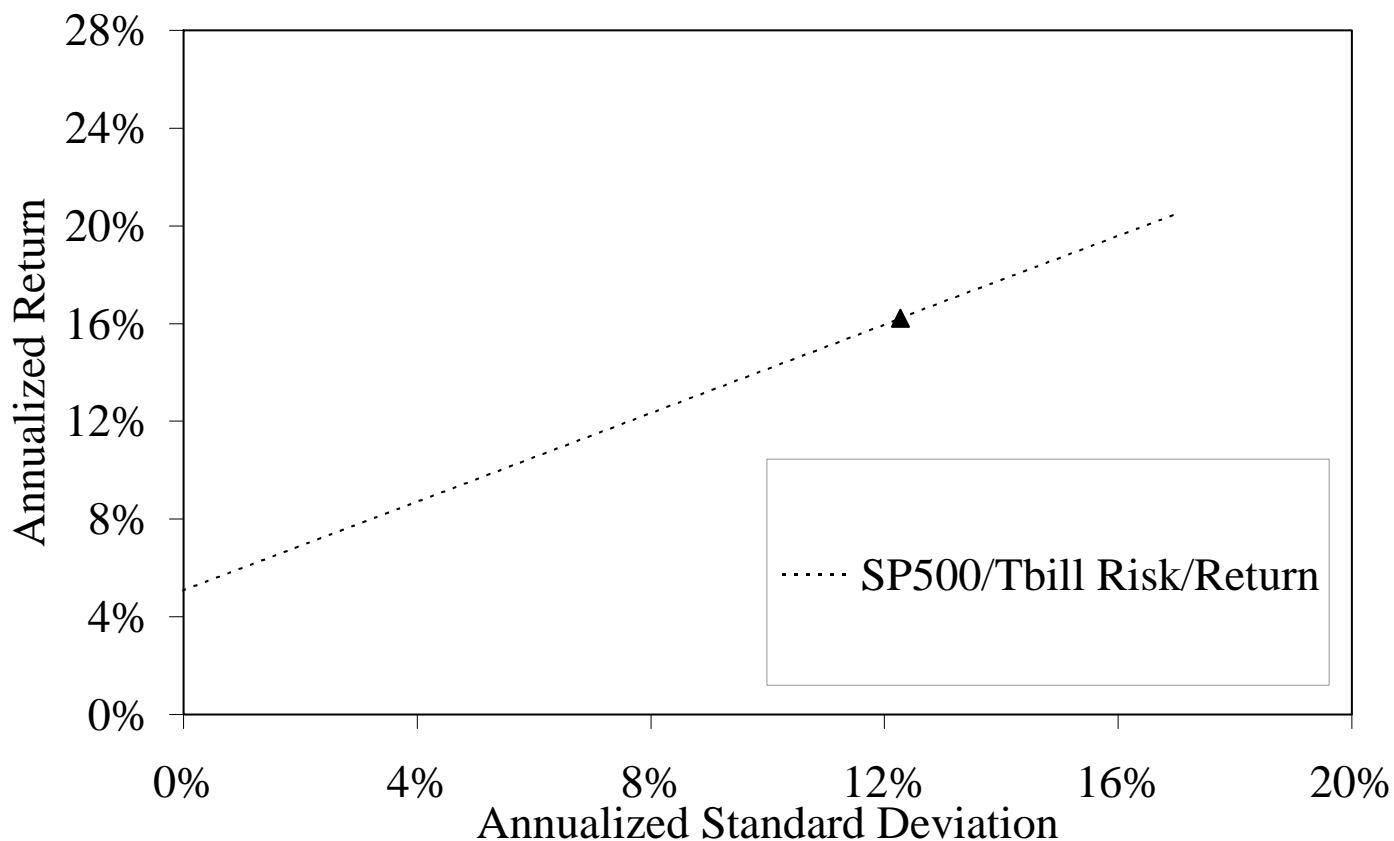
Today, we look at hedge funds in a portfolio context

Why Invest in Hedge Funds: Part I

- If hedge funds have a low correlation with traditional asset classes, then that would be a reason for investing in hedge funds. If a hedge fund has a low correlation with the market portfolio then it would help diversify risk.
- The correlation between hedge funds on average and a balanced stock-bond portfolio (1990-97): 0.37 [with macro hedge funds having a correlation of 0.10]
- In comparison, the correlation of international funds with US is about 74%.
- So it appears that hedge funds do provide diversification benefits.

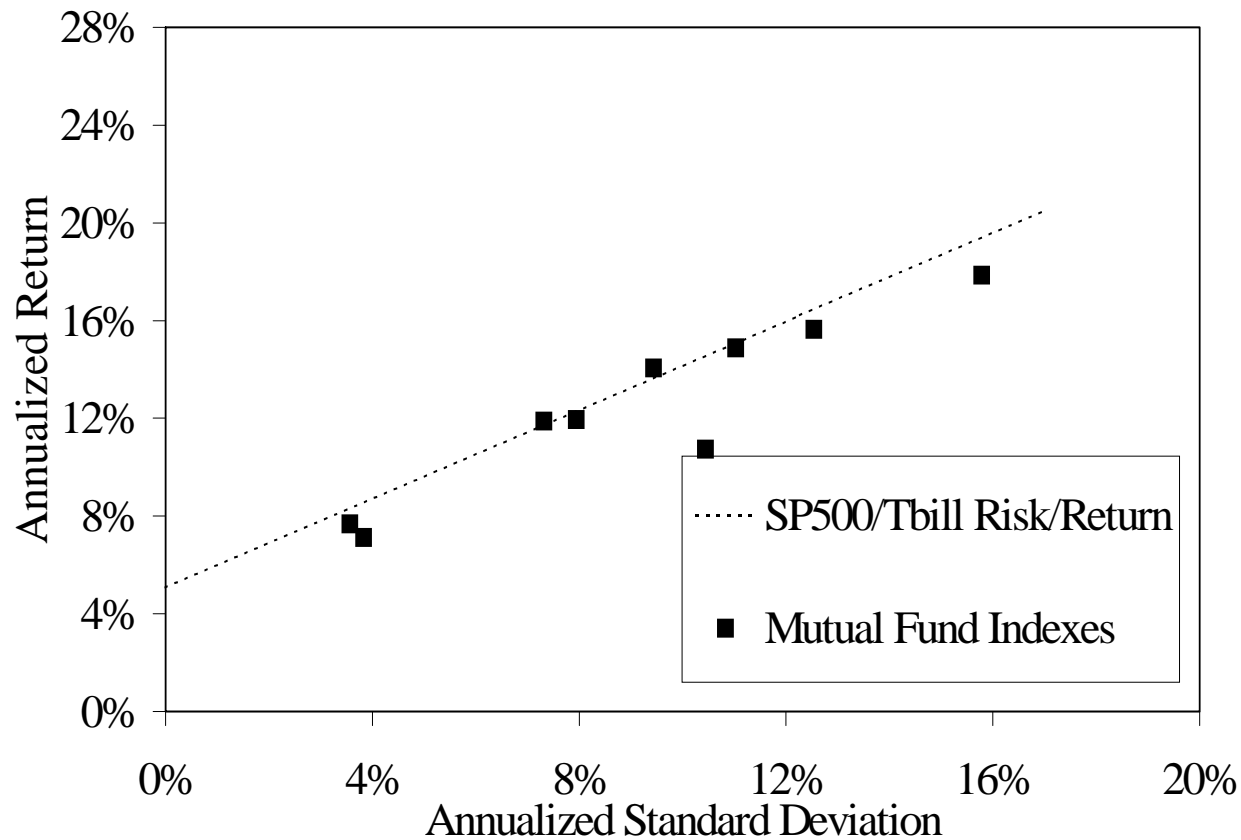
Why Invest in Hedge Funds: Part II

Hedge and Mutual Fund Performance, 1990-1997

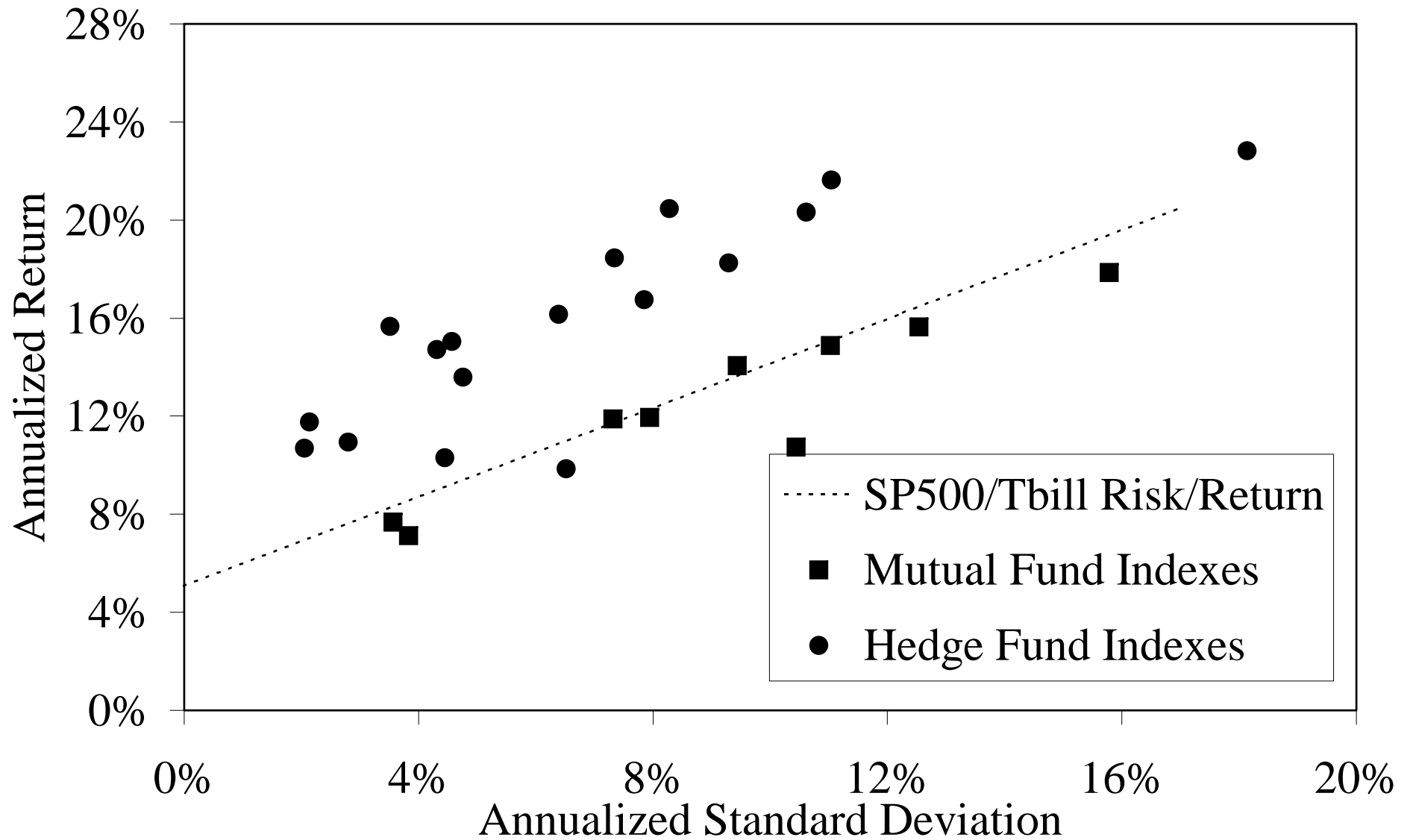


Hedge and Mutual Fund Performance, 1990-97

Hedge and Mutual Fund Performance, 1990-1997



Hedge and Mutual Fund Performance, 1990-1997



Analyzing Performance and Sources of Superior Returns to Hedge Funds

- Luck?
- Investment Universe?
- Institutional Features?

Luck?

- Performance differentials appear to be too large to be explained by luck alone.
- The numbers we observe could be affected by
 - “survivorship” bias - the average return could be biased upwards because we have not included firms that did badly. About 20% of the hedge funds go out of business in a year.
 - “back-filling” bias
 - “self-selection “bias

Investment Universe

- Hedge Fund managers clearly have more choices - they can invest in everything a mutual fund manager does, and more.
- Hedge funds have
 - a wider set of securities (private equity/debt, futures/forwards, options, structured debt)
 - no investment constraints (leverage, short sales)
 - a looser regulatory environment (incentive fees, long lockup periods)

Unique Sources of Return

- Liquid investments have lower returns than illiquid investments, because most investors place a premium on liquidity
- Typically, a long equity or bond fund is highly liquid and earns no liquidity premium
- Lockup periods allow hedge fund managers to make illiquid investments that offer a natural return plus a liquidity premium

Institutional Feature: Compensation Contract

- The compensation structure for hedge fund managers is very different than that of mutual fund managers.
- A typical compensation would be 2/20, which means that the manager will take 2% of the assets as fees, and 20% of the gains.

Compensation Contract

- For example, George Soros' Quantum Fund charged an annual fixed fee of 1% of NAV, and a high water mark based incentive fee of 20% of net new profits earned. As a result, the Quantum fund returned 49% (pre-fee) in 1995, and earned fees of \$393 million. In 1996, the Quantum fund had a return of -1.5%, and thus “only” earned a fee of \$54 million on net assets of \$5.4 billion.

Investment Style or Individual Manager?

- Research tends to support the finding that the “style” of the hedge fund more directly affect returns, than the particular manager within a group of hedge funds managers.
- In other words, the right allocation across types of strategies is more important, than the choice of manager within a particular strategy.

Optimal Allocations to Alternative Investments

- Consider allocations between S&P 500, Bond, High-Yield, Venture-Cap, REIT, Hedge-Fund-Index:
 1. Unconstrained: 22% High-Yield, 2% Venture-Capital, 2% REIT, 74% Hedge-Funds.
 2. Constrained (80% to traditional investments): 40% S&P 500, 30% Bond, 10% High-Yield, 1% GSCI, 19% Hedge-Funds.

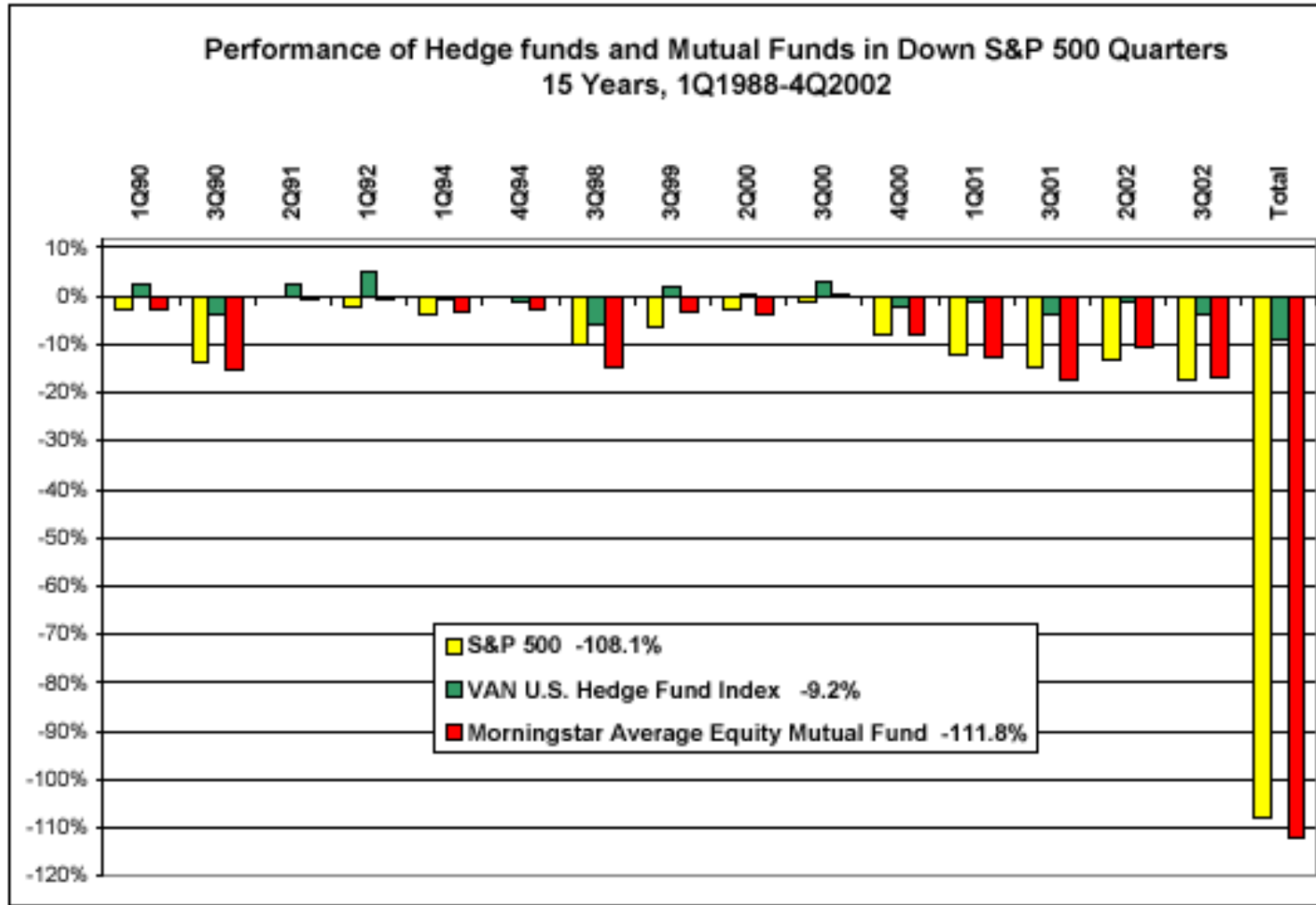
What Drives the Allocation to Hedge Funds: High Returns or Diversification Benefits?

- It appears that the high allocation to hedge funds is driven by their low correlation, and not by high historical returns.
- Correlation with balanced stock/bond portfolio:1990-1997
 - International stocks (MSCI-ex US): 74%
 - Hedge funds (EACM 100): 37%
 - Macro hedge funds/managed futures: 10%

Making Use of Correlation Shifts

- Not all assets have constant correlation.
 - The “best” kind of diversification is provided by assets that have
 - *positive* correlation when your portfolio is going *up*
 - *negative* correlation when your portfolio is going *down*
 - “Worst” kind of diversification is from assets that have a *higher* correlation when your portfolio is going *down* than when it is going *up*.

Bear market performance



Good, OK, and Bad Diversification

- Managed Futures/Directional Hedge Funds
 - All Months: +1.4%
 - *10 Worst SP500*: +2.6% (8 of 10 *positive*)
- Hedge Funds (All Strategies)
 - All Months: +1.3%
 - *10 Worst SP500*: + 0.5% (7 of 10 *positive*)
- International Stocks
 - All Months: +0.9%
 - *10 Worst SP500*: -6.6% (2 of 10 *positive*)
 - '85 to '97. For MF and Int'l, '90 to '97. For Hedge Funds

Investments That Offer Diversification on Down-side

- 1. Commodities: Correlation between GSCI and a 50/50 US Stock/Bond Fund is -0.25 in the worst third months (as opposed to -0.17 on average). (GSCI = Goldman Sachs Commodity Index)
- 2. Long/Short Equity Hedge Funds: Have a correlation of (-0.1) in the worst third months, and a correlation of 0.24 in the best third months.
- 3. Commodity Trading Advisors (CTA): Have a correlation of -0.01 in the worst third months, as compared with a correlation of 0.10 over all months

Process of Portfolio Management

- Typically involves three steps:
 - 1. Determination of the objective.
 - 2. Determination of the constraints
 - 3. Determining the policy, after taking into account (1) and (2).

The Objective

- What is the return that is required?
- What is the appropriate risk level?
- The answers to this question will, of course, depend on the type of investor: individual, pension fund, mutual fund, endowment, life-insurance company, etc.

Examples

- Individual: an individual would be concerned with decision related to his life-cycle (education, children, home, retirement). The younger the individual the more risk she would be willing to take.
- Endowment: the return that is required will be determined by current income needs, and the need for asset growth to maintain real value. The risk?
- Pension fund: the return that is required would be determined by the payout that is promised. The risk would be determined by the proximity of the payoffs.

Constraints

- The constraints may be related to:
 - 1. Liquidity
 - 2. Horizon
 - 3. Regulations
 - 4. Taxes
 - 5. Other unique constraints that might be peculiar to the particular investor.

The Constraints (1/2)

- 1. Liquidity: it may be important for an investor to be able to liquidate assets quickly to take care of emergencies or other special circumstances.
- A mutual fund would want to keep its assets liquid as it may have to fund withdrawals.
- An endowment or a life-insurance company is not likely to have sudden liquidity requirements.
- On the other hand, a non-life insurance company is likely to require its assets to be held liquid.

The Constraints (2/2)

- 2. Horizon: There may be a particular horizon over which the investment must be liquidated. For an individual this would relate to his life-cycle. A pension fund or an endowment typically would have a long horizon. For a non-life insurance company, the horizon would typically be short.
- 3. Regulations: There may be constraints imposed by regulations. Individuals are, of course, not subject to regulations, but pension funds are. So are banks, whose capital requirement is tied to the risk it takes.
- 4. Taxes: are important, as we are primarily concerned with after-taxed returns.

Investment Policy

- How should you allocate your assets?
- Who should manage the assets?
- Here's one way to proceed:
 - 1. Determine the specific asset classes to include in your portfolio.
 - 2. Specify the returns you expect in the current investment environment, and estimate the relevant input parameters like volatilities and correlation.
 - 3. Estimate the frontier and determine your optimal allocation, given your risk-return preferences.

Lectures

- **Ackermann, McEnally & Ravenscraft (JF 1999)**
- **Liang (FAJ 1999)**