Hedge Fund Returns

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HF: A brilliant *marketing* success…

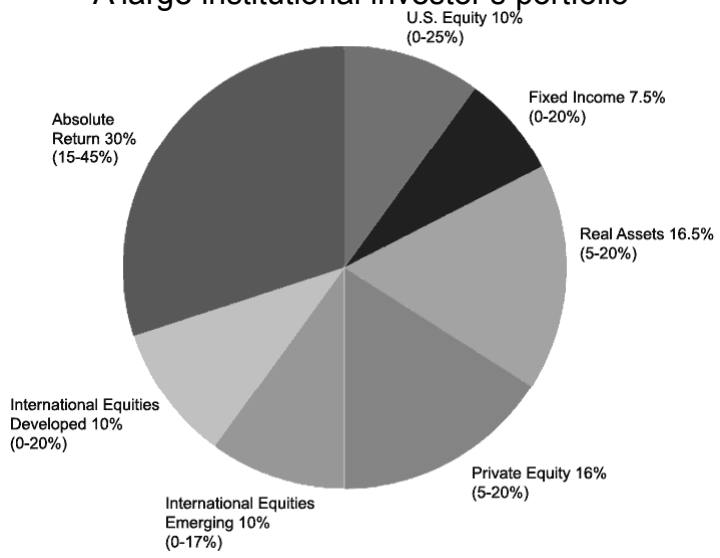
- "Absolute Returns,'' "Market-Neutral," "Alternative asset," "Near-Arbitrage"… "Alternative beta,"
- 2% + 20% "We only charge if we win."
- Good "framing" to ignore portfolio, evaluate as standalone investments.
- "Business model" is the biggest key to success!

Silliness in HF portfolios/investing

- "Hedge funds give us diversification"
  - You cannot be more diversified than the market portfolio. If you have A and B, adding (long A, short B) does not make you more diversified.
- "We need to add 'alternative investments,' 'new asset classes' to 'make our rate of return targets.'"
  - Most HF are not a new asset class. They trade in exactly the same assets you already own.
- "We hold a lot of funds to diversify across managers"
  - And get back to the market portfolio.
  - If so, 2+20 is a disaster!
- "If things get bad we'll sell on the way down, limit tail risk"
  - But: Sell to who? A stop order is not a put option

HF as part of a portfolio

A large institutional investor's portfolio



•The Absolute Return portion of the portfolio is primarily invested in non-directional hedge funds. That is, returns should be independent of the direction of global equity, fixed income or currency markets. Strategies include Global Convertible Arbitrage, Global Merger Arbitrage, Long/Short Equity and Blended Strategies….

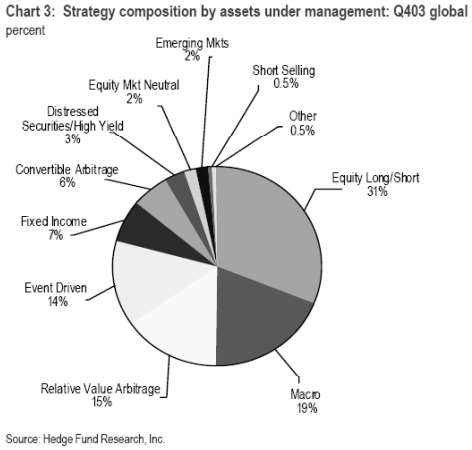
Hedge funds as part of a portfolio

- Problem 1: Risk management.
  - Will all HF go down together?
  - Will HF lose when everything else loses?
- Problem 2: Cost and fee explosion.
  1. Is HF short something you want to add?
     a. Portfolio is (10 A, 10 B). HF is long A short B.
     b. Is (11A, 9 B) worth short cost, 2+20 fee?
  2. Are HF offsetting?
     a. HF #1 long A, short B. HF #2 short A, long B.
     b. You pay ½ (2 + 20) for sure, plus short costs for *nothing*.
  3. Cost explosion – portfolio of options ≠ option on portfolio.
     a. 100 mean zero stocks in one fund: 2% for sure.
     b. 100 stocks in 100 funds: 2% + ½ (20%) for sure!

Problem areas

- Return *statistics*: Short, selected, managed.
- *Betas* on many new styles; Option-like returns with big tails.
- Standard view of investor-manager relation.
  - Both sides understand betas
  - Clear “style” (no fee) vs. “selection” (fee, information,skill) separation.
  - Investor has already optimized “style” choice in passive investments.
- More realistic view (?):
  - HF sketchy on betas, premiums, investors have no clue.
  - Investors have not thought about multiple betas, passive “styles.”
  - There is no alpha, there is only beta you know and beta you don’t know.
  - Alpha based on track record, statistical analysis is close to hopeless.

Strategies



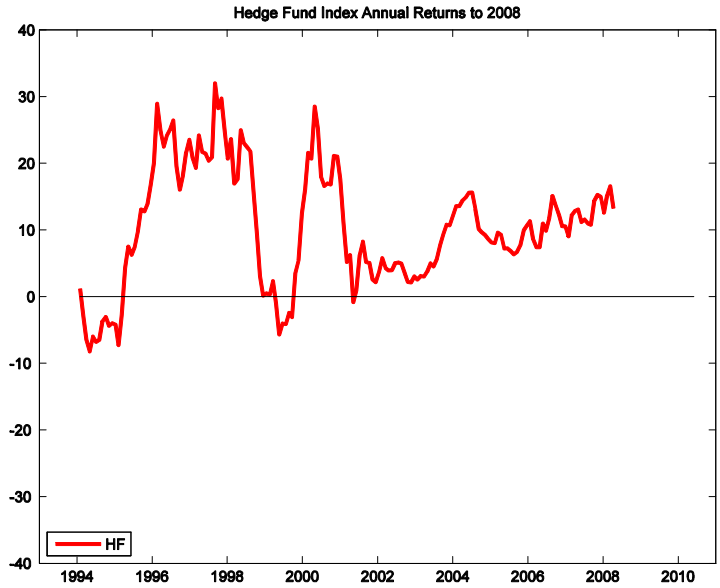
•Who knows what this means? Obscure strategies seems an important part of HF marketing

Returns

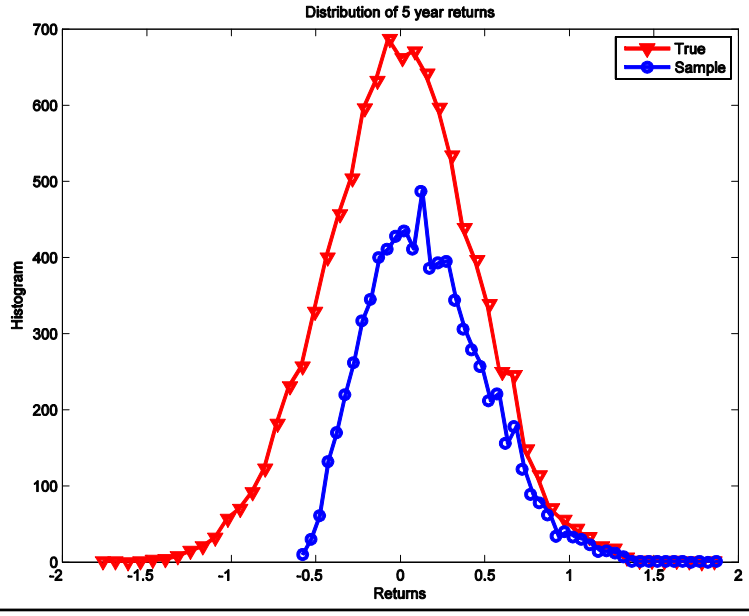
Annualized returns 1990-2009

	Mean	σ	Sharpe	t stat
HFIndex	5.74	7.76	0.74	(2.96)
ConvArb	4.18	7.19	0.58	(2.33)
ShortBias	-4.63	16.90	-0.27	(-1.10)
EmergMkt	5.46	15.59	0.35	(1.40)
EquitMktNeut	2.62	10.74	0.24	(0.98)
EventDriven	6.47	6.05	1.07	(4.28)
Distress	7.39	6.67	1.11	(4.43)
Multi-Strat	6.08	6.42	0.95	(3.79)
RiskArb	3.70	4.15	0.89	(3.56)
BondArb	1.40	6.05	0.23	(0.93)
GlobalMacro	8.78	10.25	0.86	(3.43)
LongShtEqty	6.84	10.00	0.68	(2.74)
Market Index	5.35	16.12	0.33	(1.33)

Hedge Fund Index Returns..



Returns—survivor bias



Return Biases and Statistics

•Backfill bias:

Backfill	Not Backfilled
14.65%	7.34%

•Survivor bias:

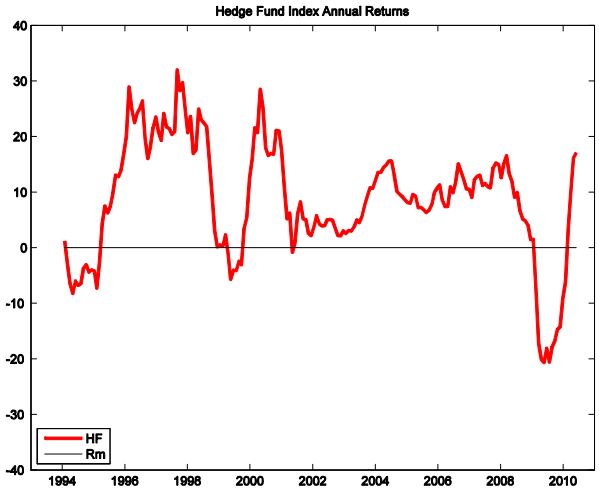
	Live	Defunct	Both
Hedge	13.74%	5.39%	9.32%
Mutual	9.73%	5.20%	8.49%

•Good funds?

•Fraction of Top half that repeat: 51.56%

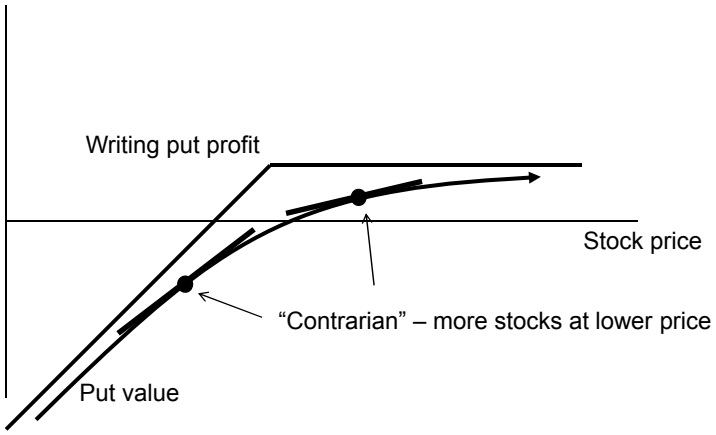
-Source: Malkiel and Saha Financial Analysts Journal

Hedge Fund Risk??



… How do we measure risk?

Dynamic Trading = Options!



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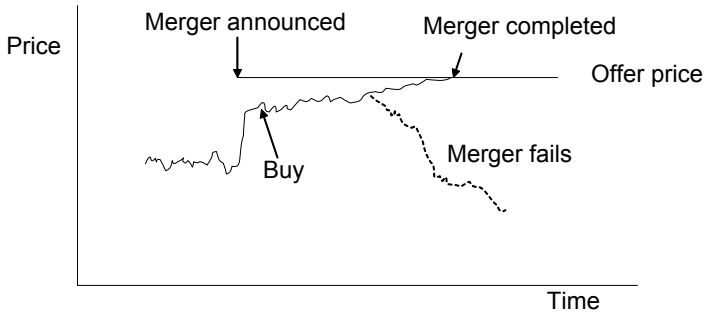
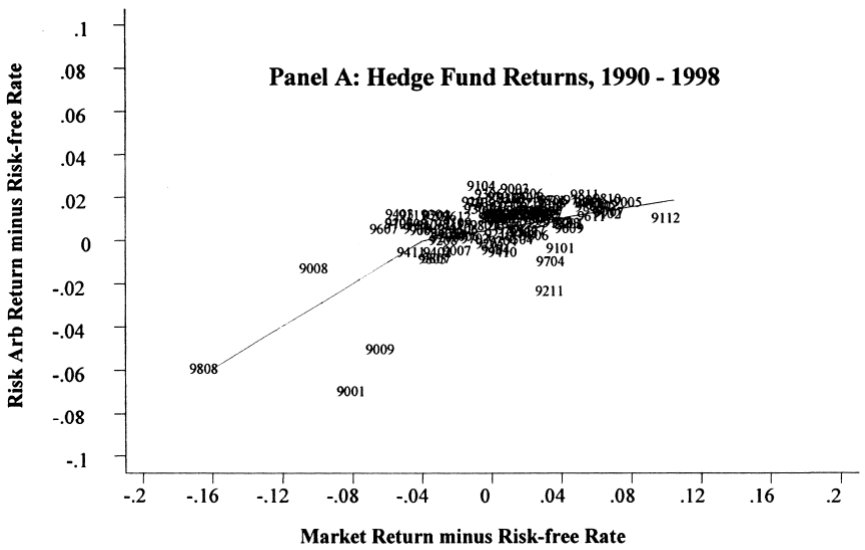
Payoff to Merger "arbitrage" is like an index put



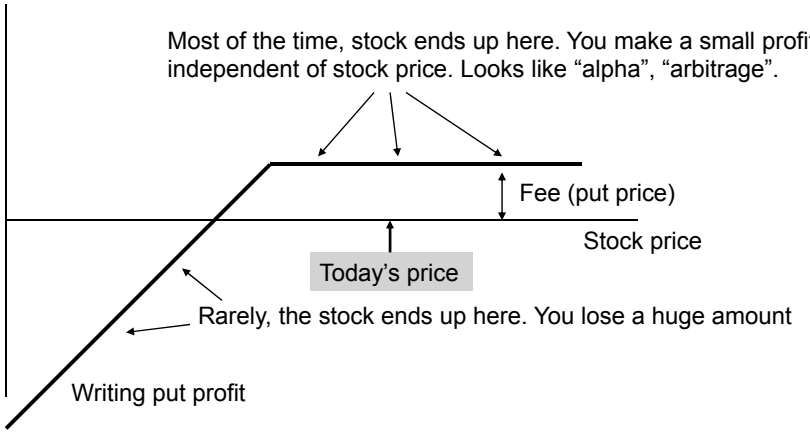
- Large chance of a small return if successful.
- Small chance of a large loss if unsuccessful.
- The strategy seems unrelated to the overall market, "beta zero"
- But…offer is more likely to be unsuccessful if the market falls!



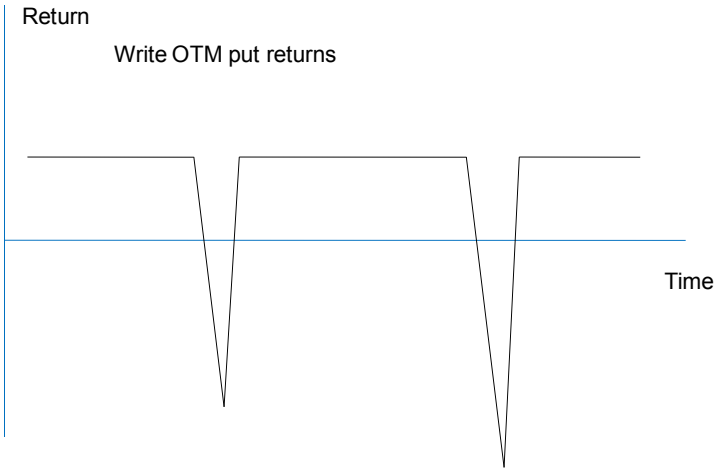
- Source: Mitchell and Pulvino, using CFSB/Tremont merger-arb index
- News: 1) "occasional catastrophes'' 2) *catastrophes more likely in market declines*

Writing put options

- You collect a fee, only pay off if the market goes down a lot.
- Provide "disaster insurance"

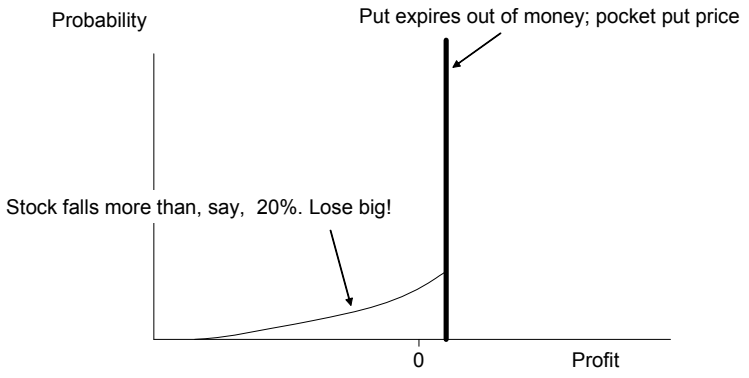


Put writing returns

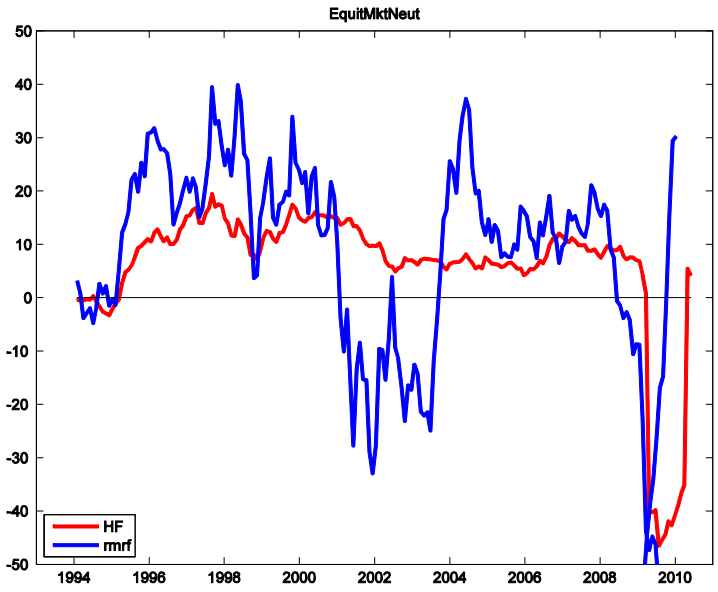


Option-like returns: beware averages (even more)

- If the return is (1, 1, 1, 1, 1, -10, 1, 1, 1, -10, 1, 1, 1, 1,…) you are likely to see only +1, "we consistently outperform the market.''
- The actual mean return depends on how likely the disaster -10 is. You need a *long* history to figure that out based on statistics.
- Like writing earthquake insurance.
- The distribution of profits from writing puts is very far from normal:



Option betas?



Return benchmarks

$$r_t^i = \alpha_i + \beta_i^{sp} r_t^{sp} + \beta_i^{SPPo} SPPo_t + s_i SMB_t + h_i HML_t + \varepsilon_t^i$$

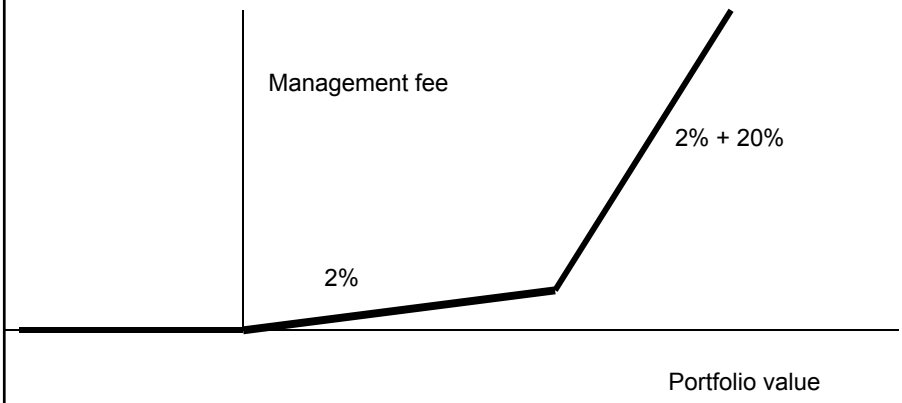
	ER (%/mo)	alpha	SPPo (puts)	SMB (size)	HML (value)
Event Arb	1.03	0.04	-0.92	0.15	0.08
Restructure	1.29	0.43	-0.63	0.24	0.12
Event driven	1.33	0.20	-0.94	0.31	0.12
Rel. value arb	1.15	0.38	-0.64	0.17	0.08

SPPo = return from rolling over out-of-the-money puts
Source: Agarwal and Naik RFS, using HFR data

- Morals:

1. Including option benchmarks can reveal big betas.
2. And hence alphas a lot less than average returns.

Fees, incentives, and options

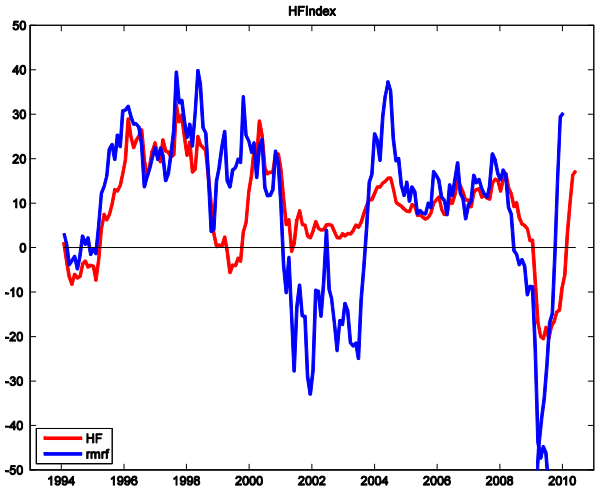


•Quiz: Name this payoff

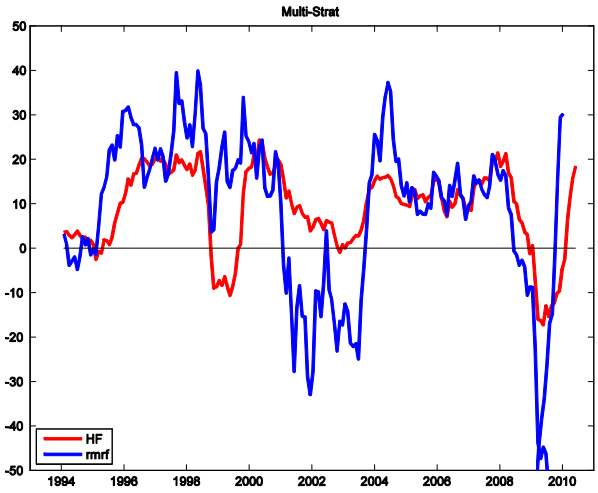
Fees, incentives, and options

- (0), 2%, 20% = a call option.
- Incentive for needless volatility/option writing. (Financial crisis more generally)
- Responses?
  - Coinvest, “Reputation,” High water marks
- Liquidity, withdrawals, lockups.
- The contract structure matters!

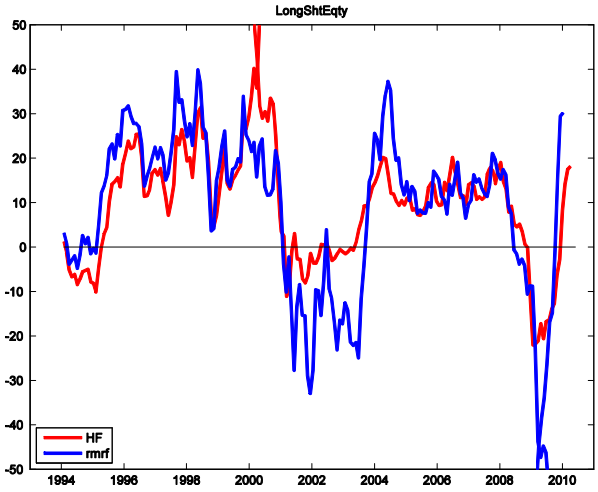
Hedge fund index and market return



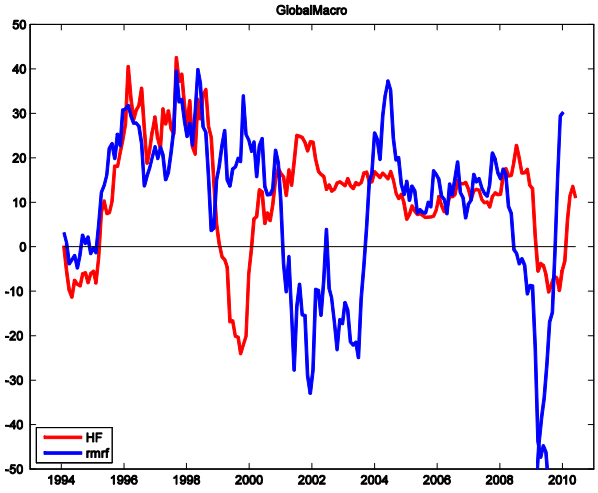
Multi-Strategy index and market return



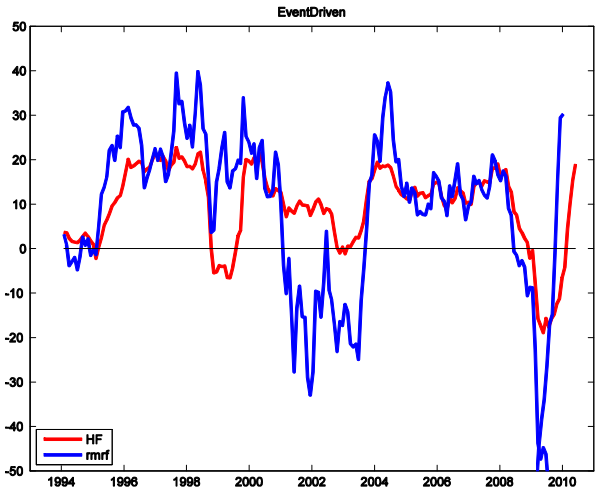
Long-Short equity index and market return



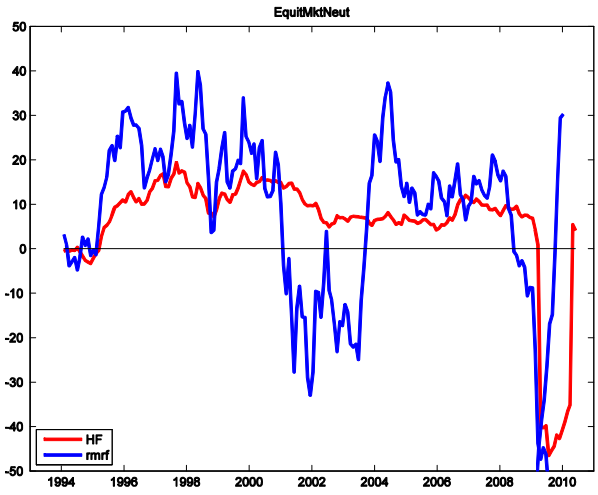
Global-macro index and market return



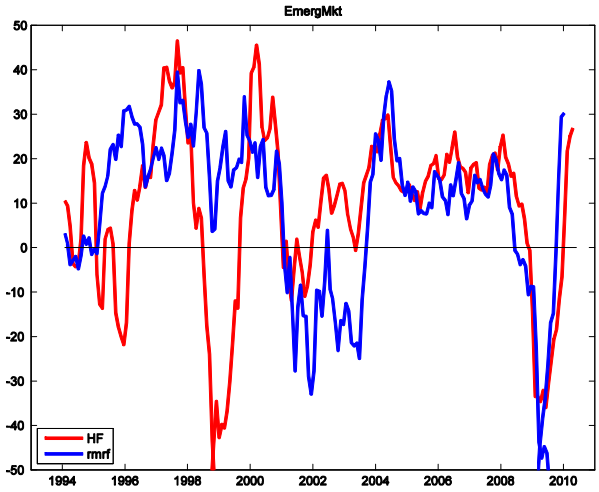
Event-driven index and market return



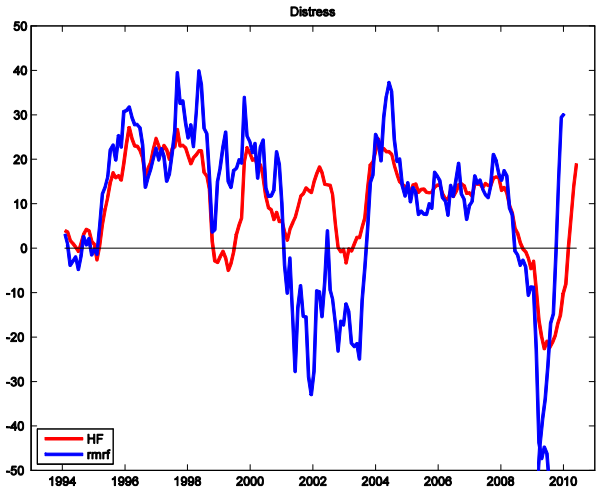
Equity-market-neutral index and market return



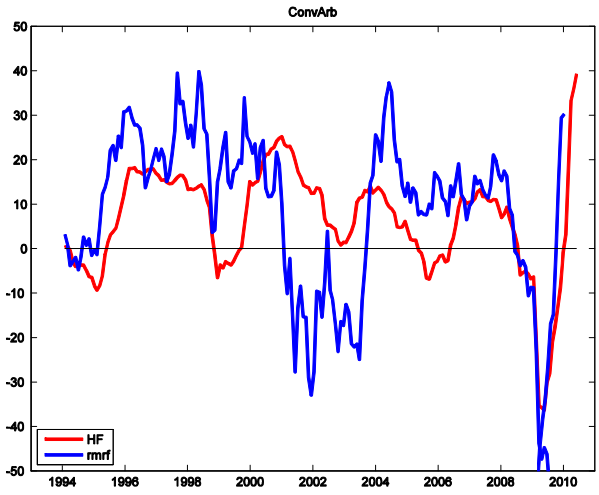
Emerging-market hedge fund index and market return



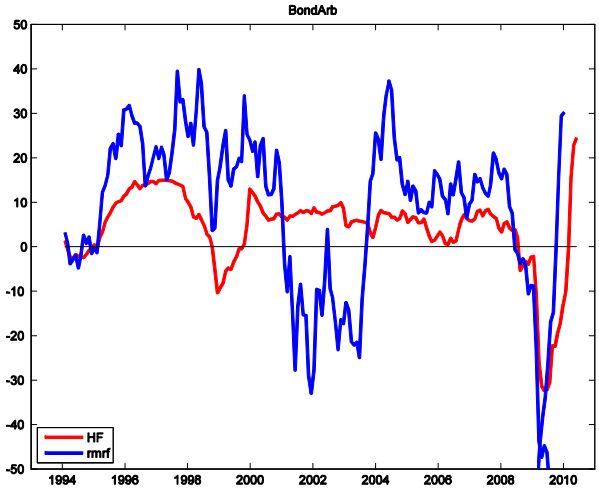
Distressed investing index and market return



Convertible-Arbitrage index and market return

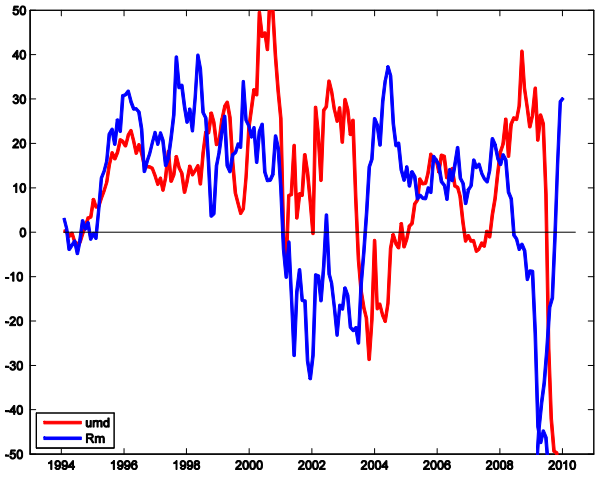


Bond-Arbitrage index and market return

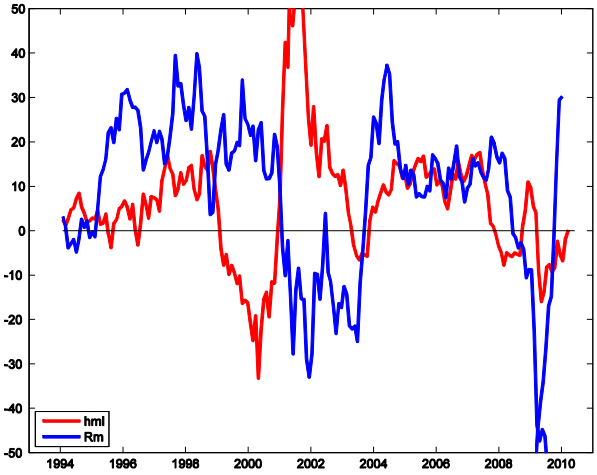


Next: compare to alternative passive strategies

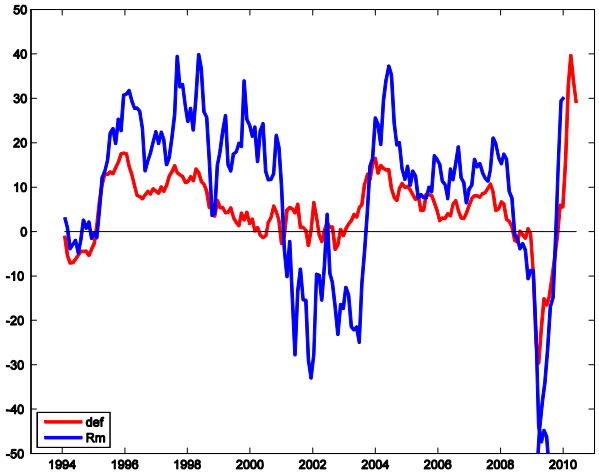
Momentum



Value-Growth



BAA – AAA



Term premium (borrow short, lend long)