18 Week 6 Hedge funds Overheads

Background:

1. What are they?

   (a) Legal, regulatory: a partnership.

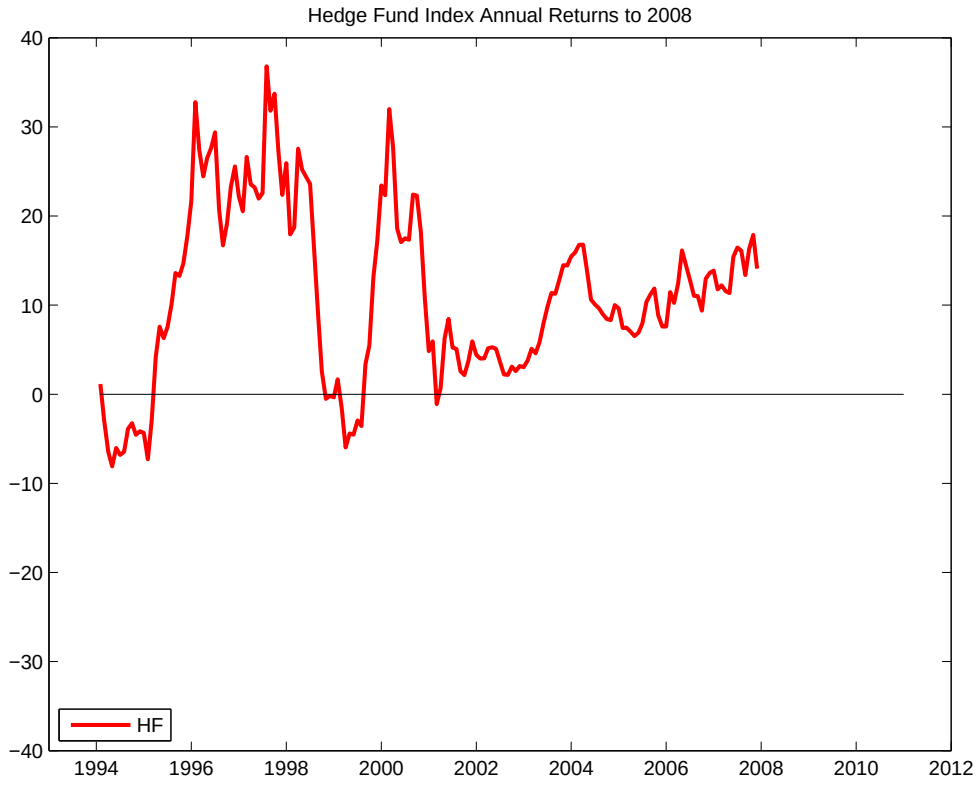
   (b) Fee structure: 2+20, high water mark, cash benchmark

   (c) Typically can leverage, short-sell, use derivatives, change strategy quickly. Risk managment rules of thumb may break down.

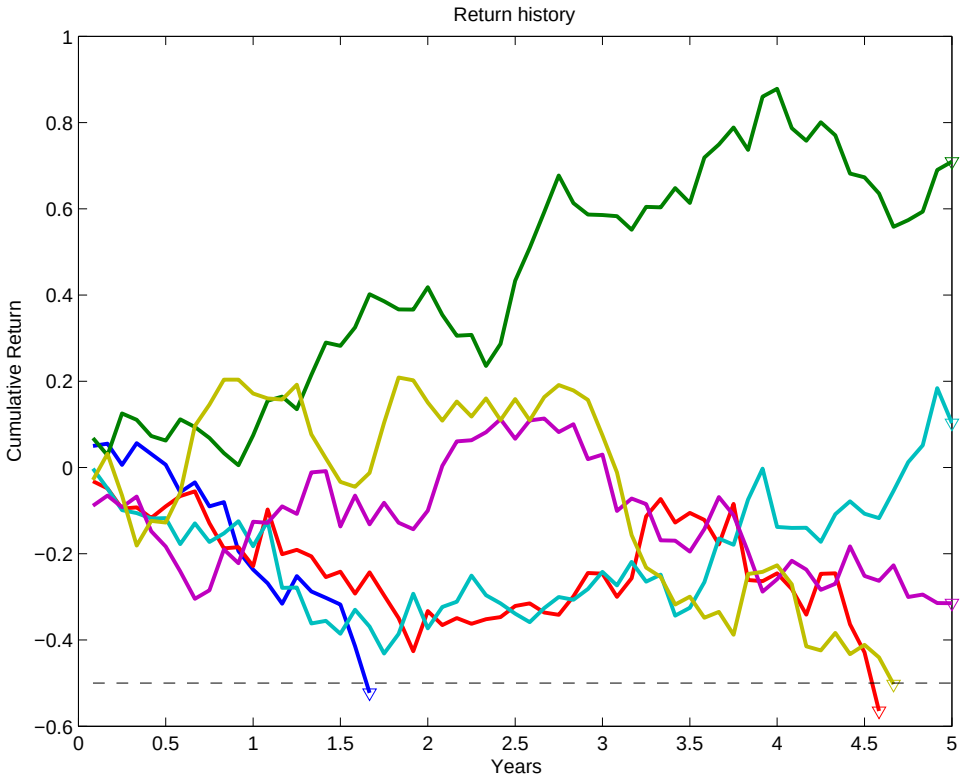
   (d) Many strategies. Strategy labels are a poor guide.

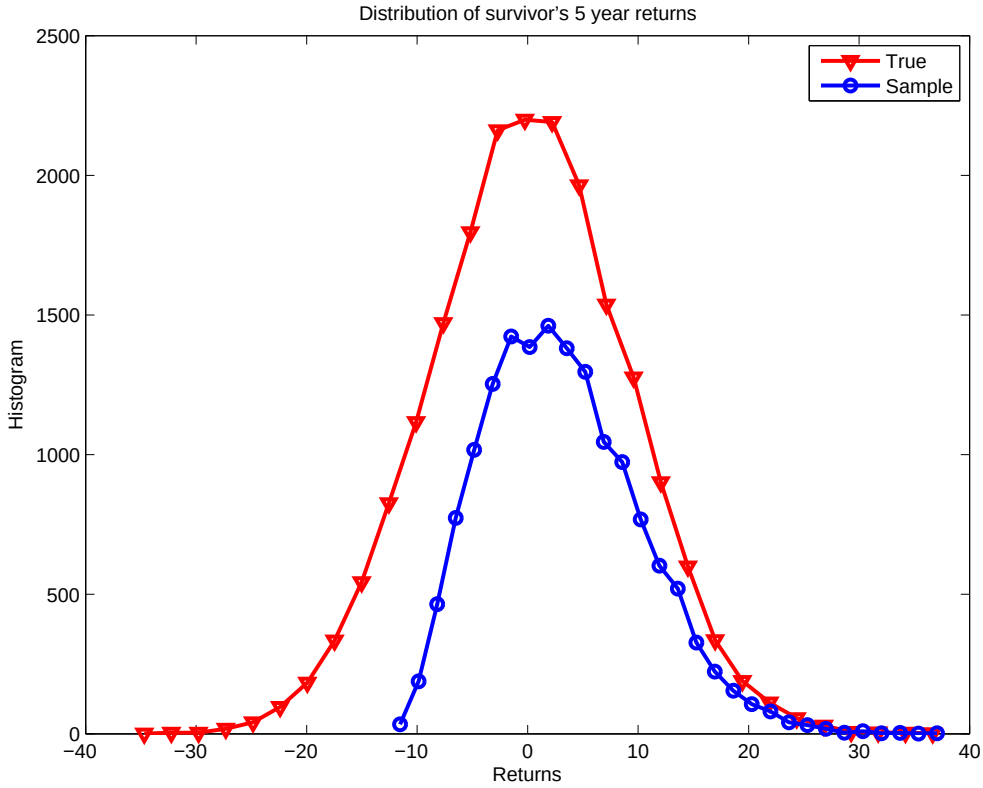
   (e) "Hedge funds are investment pools that are relatively unconstrained in what they do. They are relatively unregulated (for now), charge very high fees, will not necessarily give you your money back when you want it, and will generally not tell you what they do. They are supposed to make money all the time, and when they fail at this, their investors redeem and go to someone else who has recently been making money. Every three or four years they deliver a one-in-a-hundred year flood. They are generally run for rich people in Geneva, Switzerland, by rich people in Greenwich, Connecticut." -Cliff Asness, Journal of Portfolio Management 2004.

2. Looks like some great returns (Warning: large selection/survival/backfill bias).



3. Survivor/backfill/self-reported bias example.





Statistics across funds	Raw	Selected
Mean	0.05%	3.12%
Std. Dev	8.87%	7.00%

4. Survivor/backfill bias data (From Malkiel and Saha on optional reading list) (Note: The only important lines are the "arithmetic means" and "average")

Table 2. Backfill Bias in Hedge Fund Returns, 1994–2003

	Backfilled		Not Backfilled			
Year	Return	Count	Return	Count	Difference in Means	*t*-Statistic
A. Means						
1994	0.42%	1,076	–11.53%	22	11.96 pps	–3.41*
1995	17.23	1,318	10.37	52	6.85	–2.04*
1996	19.44	1,299	12.37	331	7.08	–5.28*
1997	19.81	1,307	13.09	555	6.72	–5.91*
1998	9.62	1,352	–2.04	751	11.65	–9.84*
1999	31.50	1,408	28.19	913	3.32	–1.48
2000	14.69	1,463	2.08	1,030	12.62	–12.13*
2001	8.24	1,522	2.81	1,119	5.43	–6.65*
2002	6.10	950	0.88	1,747	5.22	–8.35*
2003	19.49	936	17.20	2,065	2.29	–1.24
Arithmetic mean	14.65%		7.34%		7.31 pps	–5.63*
Geometric mean	14.35		6.81			

Table 3. Survivorship Bias in Hedge Fund Returns, 1996–2003

Year	Mean Return	Count	Mean Return	Count	Difference in Means	*t*-Statistic
A. Live vs. defunct funds						
	Live		Defunct			
1996	17.27%	58	11.32%	273	5.95 pps	2.20*
1997	19.41	138	10.99	417	8.42	3.48*
1998	2.18	232	–3.92	519	6.11	2.99*
1999	34.09	361	24.33	552	9.76	3.71*
2000	9.39	504	–4.94	526	14.33	10.12*
2001	7.11	678	–3.79	441	10.89	9.04*
2002	2.48	1,273	–3.40	474	5.87	6.86*
2003	17.98	1,770	12.53	295	5.45	4.56*
Arithmetic mean	13.74%		5.39%		8.35 pps	5.37*
Geometric mean	13.31		4.91			
B. Live vs. live + defunct funds						
	Live		Live + Defunct			
1996	17.27%	58	12.37%	331	4.91 pps	
1997	19.41	138	13.09	555	6.32	
1998	2.18	232	–2.04	751	4.22	
1999	34.09	361	28.19	913	5.90	
2000	9.39	504	2.08	1,030	7.32	
2001	7.11	678	2.81	1,119	4.29	
2002	2.48	1,273	0.88	1,747	1.59	
2003	17.98	1,770	17.20	2,065	0.78	
Arithmetic mean	13.74%		9.32%		4.42 pps	
Geometric mean	13.31		8.91			

Note: Backfilled returns were not included in this analysis; live versus defunct status was determined as of April 2004.

*Significant at the 5 percent or better level of confidence.

Table 4. Survivorship Bias in Mutual Fund Returns, 1996–2003

Year	Mean Return	Count	Mean Return	Count	Difference in Means	*t*-Statistic
A. Live vs. defunct funds						
	Live		Defunct			
1996	16.42%	2,328	13.32%	1,286	3.10 pps	10.32*
1997	18.09	3,123	11.03	1,520	7.05	14.12*
1998	11.41	3,691	4.77	1,705	6.64	13.32*
1999	33.01	4,173	32.08	1,709	0.93	0.90
2000	–2.28	4,944	–10.17	1,852	7.89	16.89*
2001	–11.26	5,965	–16.52	1,713	5.26	13.68*
2002	–19.46	7,006	–23.58	1,362	4.12	11.71*
2003	31.92	8,416	30.64	754	1.28	3.55*
Arithmetic mean	9.73%		5.20%		4.29 pps	10.38*
Geometric mean	8.19		3.37			
B. Live vs. live + defunct funds						
	Live		Live + Defunct			
1996	16.42%	2,328	15.32%	3,614	1.10 pps	
1997	18.09	3,132	15.78	4,643	2.31	
1998	11.41	3,691	9.31	5,396	2.10	
1999	33.01	4,173	32.74	5,882	0.27	
2000	–2.28	4,944	–4.43	6,796	2.15	
2001	–11.26	5,965	–12.43	7,678	1.17	
2002	–19.46	7,006	–20.13	8,368	0.67	
2003	31.92	8,416	31.81	9,170	0.11	
Arithmetic mean	9.73%		8.49%		1.23 pps	
Geometric mean	8.19		6.91			

Notes: The sample includes all general equity funds as reported by Lipper. A fund was categorized as live if it had reported returns as of December 2003.

*Significant at the 5 percent or better level of confidence.

Source: Data from Lipper.

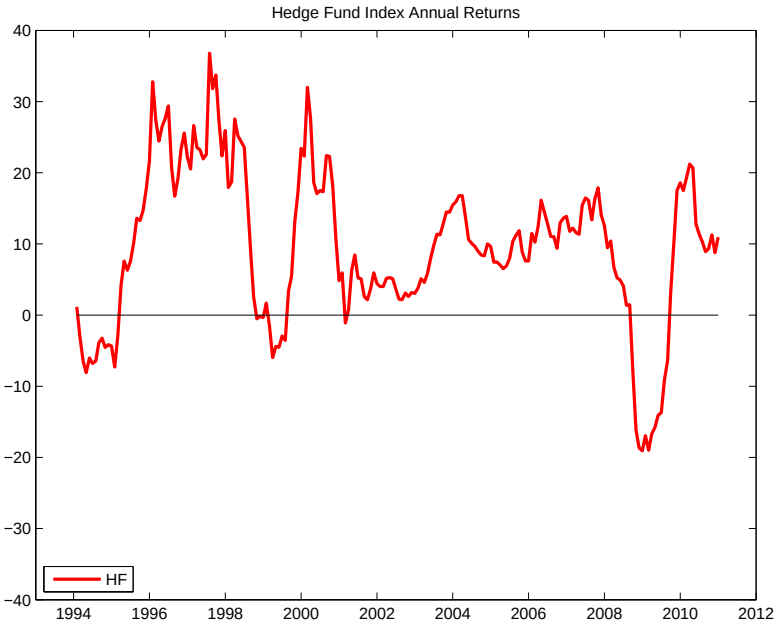
Table 5. Persistence in Hedge Fund Returns, 1996–2003

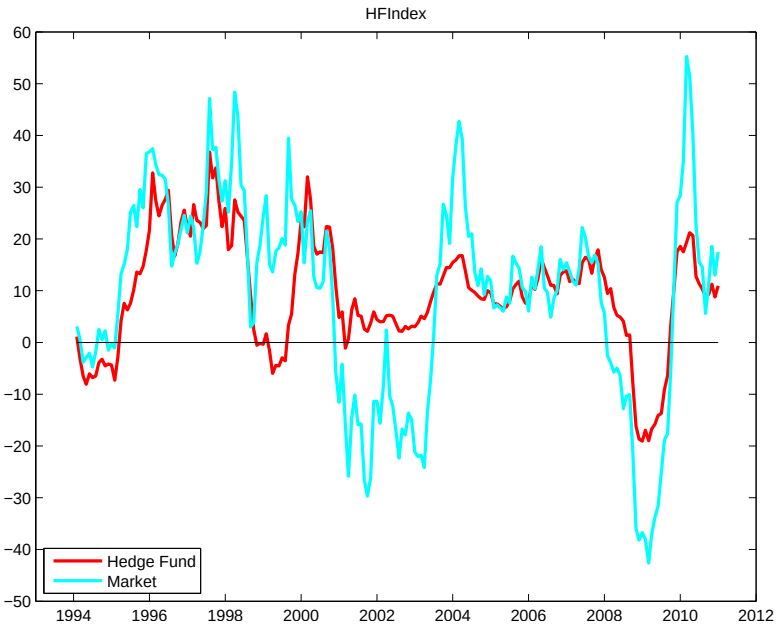
Year	Winner to Winner	Winner to Loser	Total	% Repeat Winner	Z-Test Repeat Winner
A. Dropped funds considered losers					
1996	11	7	18	61.11%	0.9
1997	82	66	148	55.41	1.3
1998	134	125	259	51.74	0.6
1999	145	200	345	42.03	–3.0
2000	172	227	399	43.11	–2.8
2001	276	199	475	58.11	3.5
2002	304	191	495	61.41	5.1
2003	312	476	788	39.59	–5.8
Average				51.56%	0.0
B. Dropped funds not considered in the analysis					
1996	11	5	16	68.75%	1.5
1997	70	54	124	56.45	1.4
1998	113	104	217	52.07	0.6
1999	124	140	264	46.97	–1.0
2000	142	181	323	43.96	–2.2
2001	226	150	376	60.11	3.9
2002	275	144	419	65.63	6.4
2003	298	380	678	43.95	–3.1
Average				54.74%	0.9

Notes: The Z-test determined the significance of the persistence against a χ^2 distribution of 50 percent. The winner-to-winner and winner-to-loser counts were based on medians derived from the universe of funds considered in each panel. Winner-to-winner counts differ in the panels because of independently calculated medians.

- Also, 15-20% of hedge funds leave each year. About 5%-8% of mutual funds leave each year (Table 7)
- Selection bias. This is why you can't "evaluate this fund." *To evaluate a fund, you must evaluate the process that led you to look at this fund and not others in the first place.*

5. Beta?


Hedge Fund Index Annual Returns
40
30
20
10
0
−10
−20
−30
−40
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
HF


HFIndex
60
50
40
30
20
10
0
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1994
1996
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2006
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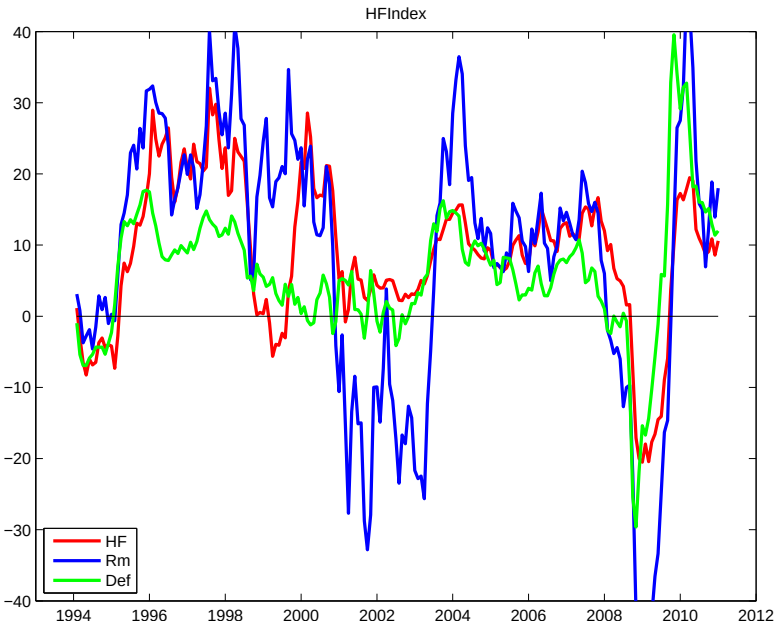
2012
Hedge Fund
Market



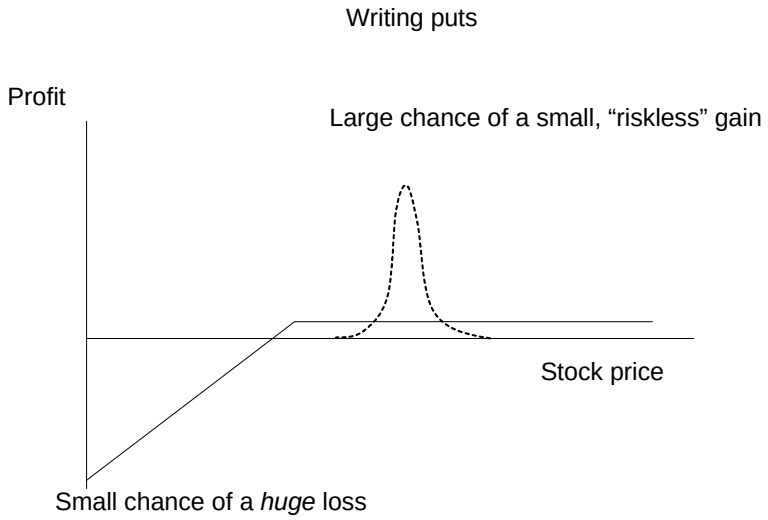
Hey, what happened to this beta = 0 "hedge" claim?

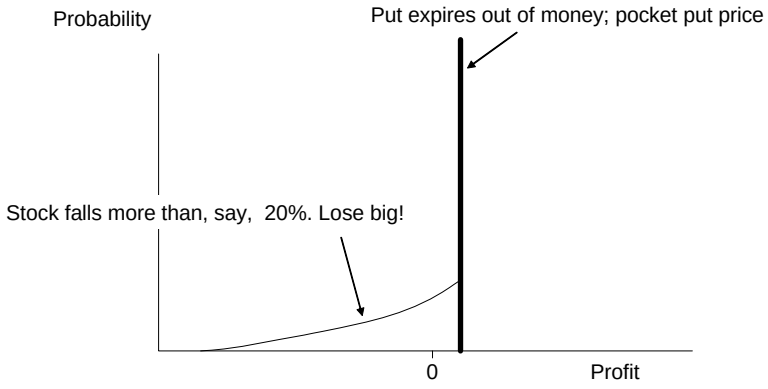
- Substantial betas on the market and credit spread, for sure. What else?
- It will be hard to tell whether you have beta on the market or on def. Already you see that multiple betas are harder than I've made them out to seem!
- They seemed like geniuses for getting out in 2000, but were not able to repeat that magic this time around.
- Time-varying betas! (Low beta in down markets is a huge alpha!)
- Selection bias is unlikely to affect betas anywhere near as much as alphas. *It does not matter that we select those alive if leaving is uncorrelated with the thing we want to measure.* Beta?

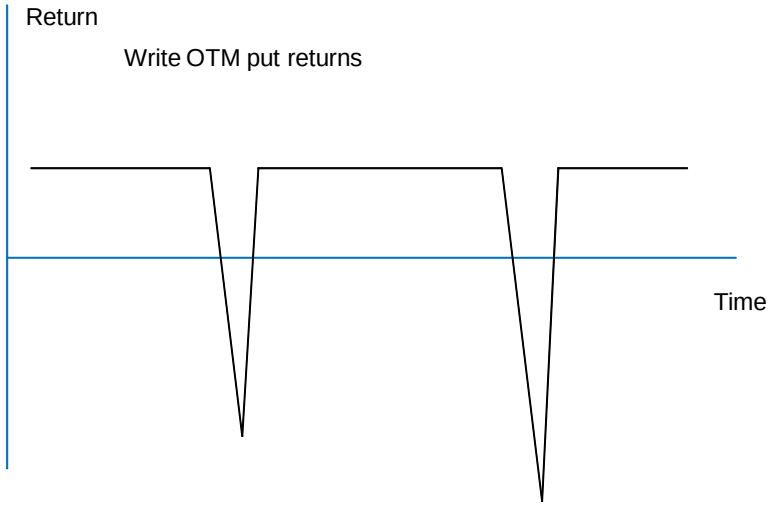
6. Option-like returns.

   (a) Non-Normal, hard to evaluate by regressions.

   (b) Writing puts; "picking up pennies in front of a steamroller"







(c) Small samples may not see the left tail *at all*

(d) Small samples will see too low volatility.

(e) Regression methods may miss the exposure.

(f) Dynamic trading can *synthesize* an option.

i. Example 1:"Contrarian" is like writing puts.

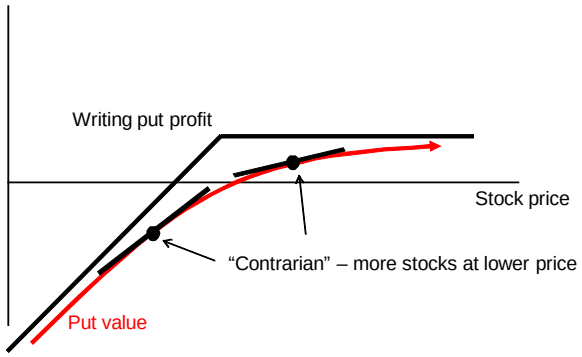
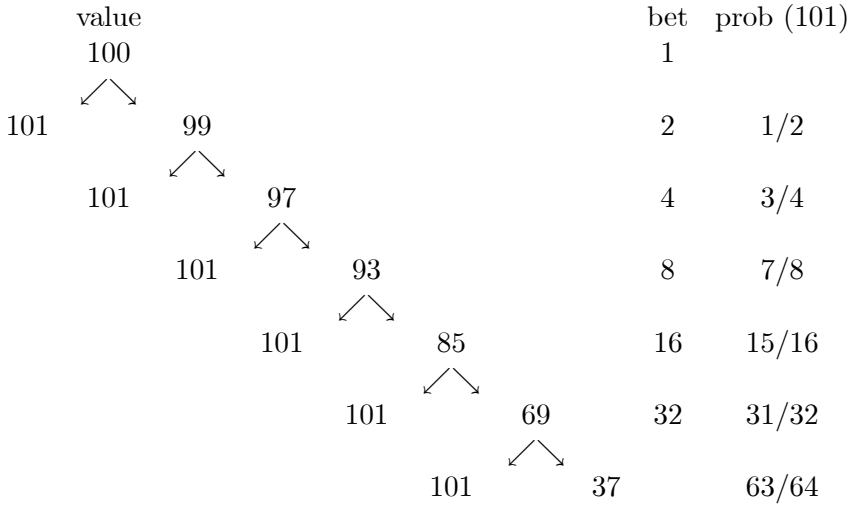


Figure 14:

ii. Example 2: "double or nothing" Start with \$100, your goal is to beat the market by 1%.



18.1 Comments on hedge funds

- Strategies and betas – see Matlab graphs
- Read papers

18.2 A few big, important points

1. Does the style/selection alpha/beta active/passive concept still make sense? Or "beta you know and beta you don't know."
2. "Equilibrium accounting" "Beta is earned from people who think they are earning Beta, Alpha is earned from people who think they are earning Alpha. With Beta, it's possible for both sides to be correct and happy, they just have diffent numeraires. With Alpha, one side is wrong."

3. Alpha vs. exotic beta. "Alpha" should be idiosyncratic. 'factor" results like hml, suggest "exotic beta."

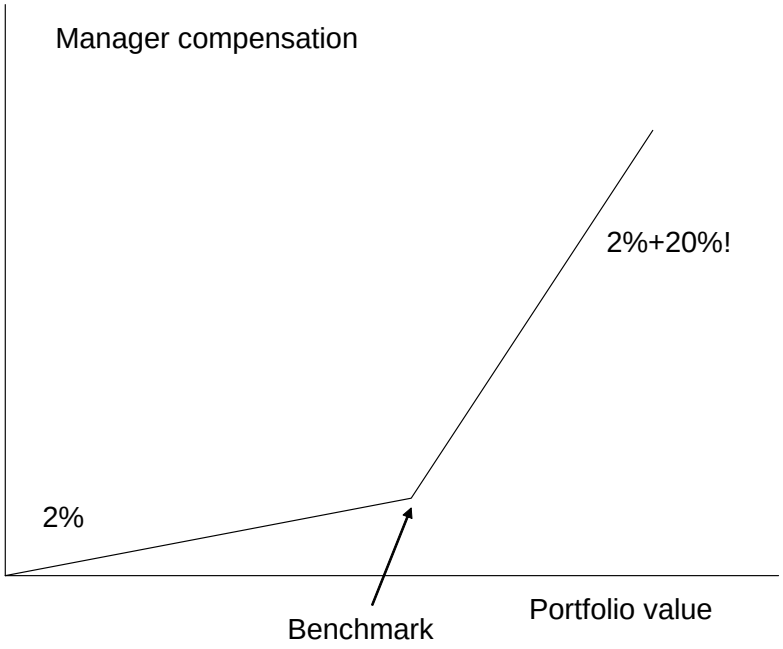
4. You cannot synthesize a free put option with a stop-loss order.

18.3 Comments on hedge fund investing

18.3.1 Those pesky fees

1. Management + performance. Often 2% + 20% of gains. Funds of funds charge 1% + 10% on top of that!

2. Option:



   (a) Incentive for volatility.

   (b) What do funds do to avoid this?

      i. General partners invest a large part of their own wealth. ?

      ii. Reputation?

      iii. High water mark?

      iv. Clear risk / beta / reporting and monitoring!.

3. Hot money and magic alpha

   (a) Example: Fall 2008. Losses lead to big withdrawals during the buy opportunity of a lifetime.

   (b) Why should losses lead to withdrawals? Catch-22

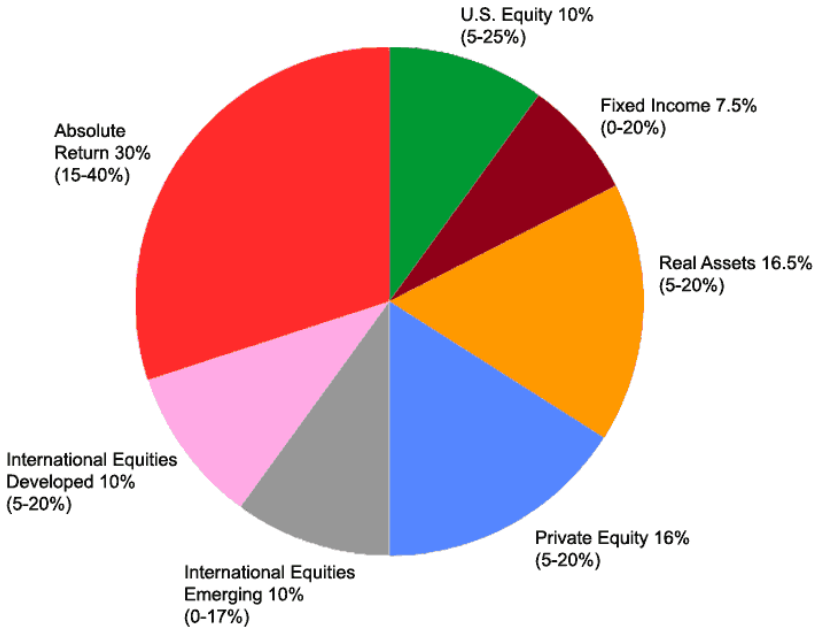
(c) Counterintuitive conclusion: High water marks can be bad for investors, Lock-in can be good for investors!

(d) General point. The fee and contract structure is important.

4. A stop-loss order is not a free put option!

18.3.2 Building portfolios with hedge funds

1. Question: How do you put hedge funds in a *portfolio*?
2. Example, from a major university endowment



3. Risk management? Portfolio? *You must know betas!*
4. Cost and fee explosion
   (a) Is HF shorting something you already own?
   (b) Is HF A shorting what HF B is buying?
   (c) Cost explosion – portfolio of options $\neq$ option on portfolio.
      i. 100 mean zero stocks in one fund: 2% for sure.
      ii. 100 stocks in 100 funds: 2% + 0.5$\times$(20%) for sure!
5. Silliness in HF investing.
   (a) "Hedge funds give us more diversification"
   (b) "We need to add 'alternative investments,' 'new asset classes'
   (c) "We hold a lot of funds to diversify across managers"
   (d) "We need to move to "alternative investments" since we aren't "making our rate of return targets" in conventional equities.

18.3.3 Another view: Marketing

A brilliant *marketing* success in a *marketing* business.

1. "Absolute Returns," "Market-Neutral," "Alternative asset," "Near-Arbitrage" ... "Alternative beta," "Entrepreneur"
2. 2% + 20% "We only charge if we win."