ALTERNATIVE INVESTMENT RESEARCH CENTRE WORKING PAPER SERIES

Working Paper # 0014

Managed Futures and Hedge Funds: A Match Made in Heaven

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This version: November 1, 2002

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Abstract

In this paper we study the possible role of managed futures in portfolios of stocks, bonds and hedge funds. We find that allocating to managed futures allows investors to achieve a very substantial degree of overall risk reduction at limited costs. Apart from their lower expected return, managed futures appear to be more effective diversifiers than hedge funds. Adding managed futures to a portfolio of stocks and bonds will reduce that portfolio's standard deviation more and quicker than hedge funds will, and without the undesirable side-effects on skewness and kurtosis. Overall portfolio standard deviation can be reduced further by combining both hedge funds and managed futures with stocks and bonds. As long as at least 45-50% of the alternatives allocation is allocated to managed futures, this again will not have any negative side-effects on skewness and kurtosis.

1. INTRODUCTION

For longer-term investors the additional negative skewness that arises when hedge funds are introduced in a portfolio of stocks and bonds forms a major risk as one large negative return can destroy years of careful compounding. To hedge this risk, investors will have to expand their horizon beyond just stocks and bonds. In Kat (2002a) it was shown how stock index put options can be used to hedge against the unwanted skewness effect of hedge funds. In Kat (2002b) it was shown that put options on (baskets of) hedge funds can perform a similar task.

Of course, the list of possible remedies does not end here. Any asset or asset class that has suitable (co-)skewness characteristics can be used. One obvious candidate is managed futures. Managed futures programs are often trend following in nature. In essence, what these programs do is somewhat similar to what option traders will do to hedge a short call position. When the market moves up, they increase exposure and the other way around. By moving out of the market when it comes down, managed futures programs avoid being pulled in, like hedge funds are. As a result, the (co-)skewness characteristics of managed futures can be expected to be more or less opposite to those of hedge funds.

In this paper we investigate how managed futures mix with stocks, bonds and hedge funds and how they can be used to control the undesirable skewness effects that arise when adding hedge funds to portfolios of stocks and bonds. We find that managed futures combine extremely well with stocks and bonds as well as hedge funds and that the combination allows investors to significantly improve the overall risk characteristics of their portfolio without giving up much in terms of expected return.

2. MANAGED FUTURES

The asset class ‘managed futures’ refers to professional money managers known as commodity trading advisors or CTAs who manage assets using the global futures and options markets as their investment universe. Managed futures have been available for investment since 1948 when the first public futures fund started trading. The industry

did not take off until the late 1970s though. Since then the sector has seen a fair amount of growth with currently an estimated $40-45 billion under management. There are 3 ways in which investors can get into managed futures. First, investors can buy shares in a public commodity (or futures) fund, in much the same way as they would invest in a stock or bond mutual funds. Second, investors can place funds privately with a commodity pool operator (CPO) who pools investors' money and employs one or more CTAs to manage the pooled funds. Third, investors can retain one or more CTAs directly to manage their money on an individual basis or hire a manager of managers (MOM) to select CTAs for them. The minimum investment required by funds, pools and CTAs varies considerably, with the direct CTA route open only to investors that want to make a substantial investment. CTAs charge management and incentive fees comparable to those charged by hedge funds, i.e. 2% management fee plus 20% incentive fee. Similar to funds of hedge funds, funds and pools charge an additional fee on top of that.

Initially, CTAs were limited to trading commodity futures (which explains terms such as public commodity fund, CTA and CPO). With the introduction of futures on currencies, interest rates, bonds and stock indices in the 1980s, however, the trading spectrum widened substantially. Nowadays CTAs trade both commodity and financial futures. Many take a very technical, systematic approach to trading, but others opt for a more fundamental, discretionary approach. Some concentrate on particular futures markets, such as agricultural, currencies, or metals, but most diversify over different types of markets.

For our purposes, one of the most important features of managed futures is their trend-following nature. That CTA returns have a strong trend following component can be shown by calculating the correlation between managed futures returns and the returns on a purely mechanical trend following strategy. One such strategy is the one underlying the Mount Lucas Management (MLM) index. The latter reflects the results of a purely mechanical, moving average based, trading strategy in 25 different, commodity and financial, futures markets. Estimates of the correlation between the MLM index and CTA returns are typically positive and highly significant.

3. DATA

We distinguish between four different asset classes: stocks, bonds, hedge funds and managed futures. Stocks are represented by the S&P 500 index, bonds by the 10-year Salomon Brothers Government Bond index and hedge funds by the median equally-weighted portfolio of 20 different individual funds. All three were used earlier in Kat (2002a, 2002b). Managed futures are represented by the Stark 300 index. This asset-weighted index is compiled using the top 300 trading programs from the Daniel B. Stark & Co. database.[1] The top 300 trading programs are determined quarterly based on assets under management. When a trading program closes down, the index does not get adjusted backwards, which takes care of survivorship bias issues. All 300 of the CTAs in the index are classified by their trading approach and market category. Currently, the index contains 248 systematic and 52 discretionary traders, which split up in 169 diversified, 111 financial only, 9 financial & metals, and 11 non-financial trading programs.

<< Insert Table 1 >>

Throughout we use monthly return data over the period June 1994 – May 2001. For bonds, hedge funds and managed futures we use the sample mean as our estimate of the expected future return. For stocks, however, we assume an expected return of 1% per month as we feel it would be unrealistic to assume an immediate repeat of the 1990s bull market. Under these assumptions, the basic return statistics for our four asset classes are shown in table 1. The table shows that managed futures returns have a lower mean and a higher standard deviation than hedge fund returns. However, managed futures also exhibit positive instead of negative skewness and much lower kurtosis.[2] From the correlation matrix we see that the correlation of managed futures with especially stocks and hedge funds is extremely low. This means that, as long as there are no negative side effects such as lower skewness or higher kurtosis for example, managed futures will make very good diversifiers. This is what we investigate in more detail next.

4. STOCKS, BONDS, PLUS HEDGE FUNDS OR MANAGED FUTURES

We study the impact of hedge funds and managed futures for two different types of investors. The first are what we will refer to as '50/50 investors'. These are investors that always invest an equal amount in stocks and bonds. When adding hedge funds and/or managed futures to their portfolio, 50/50 investors will reduce their stock and bond holdings by the same amount. This gives rise to portfolios like 45% stocks, 45% bonds and 10% hedge funds or 40% stocks, 40% bonds and 20% managed futures. The second type of investors is what we will call '33/66 investors'. These investors always divide the money invested in stocks and bonds in such a way that 1/3 is invested in stocks and 2/3 is invested in bonds

<< Insert Table 2 and 3 >>

The first step in our analysis is to see whether there are any significant differences in the way in which hedge funds and managed futures combine with stocks and bonds. We therefore formed portfolios of stocks, bonds and hedge funds, as well as stocks bonds and managed futures. Table 2 shows the basic return statistics for 50/50 investors. Table 3 shows the same for 33/66 investors. From table 2 we see once again that if the hedge fund allocation increases both the standard deviation and the skewness of the portfolio return distribution drop substantially, while at the same time the return distribution's kurtosis increases. A similar picture emerges from table 3 for 33/66 investors. With managed futures things are different, however. If the managed futures allocation increases, the standard deviation drops faster than with hedge funds. More remarkably, skewness rises instead of drops while the reverse is true for kurtosis. Although hedge funds offer a somewhat higher expected return, from an overall risk perspective managed futures clearly are better diversifiers than hedge funds.

<< Insert Table 4 >>

5. HEDGE FUNDS PLUS MANAGED FUTURES

The next step is to study how hedge funds and managed futures combine with each other. This is shown in table 4. Adding managed futures to a hedge fund portfolio will put some downward pressure on the portfolio's expected return as the expected return on managed futures is lower than that of hedge funds. However, from a risk perspective the benefits of managed futures are again very substantial. From the table we see that adding managed futures to a portfolio of hedge funds will lead to a very significant drop in the portfolio return's standard deviation. With 40-45% invested in managed futures the standard deviation comes down from 2.44% to 1.74%. Skewness rises quickly as well; from –0.47 without to 0.39 when 50% is invested in managed futures. In addition, kurtosis exhibits a strong drop; from 2.67 without to –0.17 when 45% is invested in managed futures. Giving up 10-15 basis points per month in expected return does not seem an unrealistic price to pay for such a substantial improvement in overall risk profile.

<< Insert Figure 1-4 >>

6. STOCKS, BONDS, HEDGE FUNDS AND MANAGED FUTURES

The final step in our analysis is to bring all four asset classes together in one portfolio. We do so in two steps. First, we combine hedge funds and managed futures into what we will call the 'alternatives portfolio'. Second, we combine the alternatives portfolio with stocks and bonds. We varied the managed futures allocation in the alternatives portfolio as well as the alternatives allocation in the overall portfolio from 0% to 100% in 5% steps. For 50/50 as well as 33/66 investors, the results are displayed in figure 1-8. From figure 1 and 2 we see that without managed futures increasing the alternatives allocation will significantly raise the expected return, while the expected return drops when the managed futures allocation increases. This simply follows from the assumption that the expected return on hedge funds is 0.99% but only 0.7% on managed futures. A more interesting picture emerges from figure 3 and 4. These graphs clearly show that investing in alternatives can substantially reduce the overall portfolio return's standard deviation. The drop, however, is heavily dependent on the percentage of managed futures in the alternatives portfolio. Surprisingly, for

allocations to alternatives between 0% and 20% the lowest standard deviations are obtained without hedge funds, i.e. when 100% is invested in managed futures. For higher alternatives allocations it pays to also include some hedge funds in the alternatives portfolio though. This makes sense as for the alternatives portfolio itself the lowest standard deviation is found when 40-45% is invested in managed futures. We saw that before in table 4.

<< Insert Figure 5-8 >>

Figure 5 and 6 show the skewness results for 50/50 and 33/66 investors respectively. From these graphs we see once more that without managed futures increasing the alternatives allocation will lead to a substantial reduction in skewness. The higher the managed futures allocation, however, the more this effect is neutralized. When more than 50% is invested in managed futures the skewness effect of hedge funds is (more than) fully eliminated and the skewness of the overall portfolio return actually rises when alternatives are introduced. Finally, figure 7 and 8 show the results on kurtosis. With 0% allocated to managed futures, kurtosis rises substantially when the alternatives allocation is increased. With a sizeable managed futures allocation, however, this is no longer the case and kurtosis actually drops when more weight is given to alternatives.

In sum, figure 1-8 show that *investing in managed futures can improve the overall risk profile of a portfolio far beyond what can be achieved with hedge funds alone.* Making an allocation to managed futures not only neutralizes the unwanted side effects of hedge funds but also leads to further risk reduction. Since managed futures offer an acceptable expected return, all of this comes at quite a low price in terms of expected return foregone.

To make sure that the above findings have general validity, i.e. are not simply due to the particular choice of index, we repeated the above procedure with a number of other CTA indices, including various indices calculated by The Barclay Group. In all cases the results were very similar to what we found above, meaning that our results are robust with respect to the choice of managed futures index.

7. SKEWNESS REDUCTION WITH MANAGED FUTURES

The above leads us to the question what the exact costs are of using managed futures to eliminate the negative skewness effects of introducing hedge funds in a traditional portfolio of stocks and bonds. To answer this question we follow the same procedure as in Kat (2002a). First, we determine the managed futures allocation required to bring the overall portfolio skewness back to its level before the addition of hedge funds (-0.33 for 50/50 investors and 0.03 for 33/66 investors). Subsequently, we leverage (assuming 4% interest) the resulting portfolio to restore the standard deviation. The resulting overall portfolio allocations and the accompanying changes in expected return (on a per annum basis) and kurtosis are shown in table 5 and 6. From the latter we see that the optimal portfolios are quite straightforward. In essence, the bulk of the managed futures holdings is financed by borrowing, without changing much about the stock, bond and hedge fund allocations. It is interesting to see that for smaller initial hedge fund allocations the optimal hedge fund and managed futures allocation are more or less equal. This is true for 50/50 as well as 33/66 investors.

<< Insert Table 5-6 >>

Looking at the change in expected return, we see that as a result of the addition of managed futures and the subsequent leverage the expected return actually increases instead of drops. From the last column we also see that this rise in expected return is accompanied by a significant drop in kurtosis. This compares very favourably with the results in Kat (2002a, 2002b) where it was shown that the costs of skewness reduction through stock index or hedge fund puts can be quite significant.

8. CONCLUSION

In this paper we have studied the possible role of managed futures in portfolios of stocks, bonds and hedge funds. We found that allocating to managed futures allows investors to achieve a very substantial degree of overall risk reduction at limited costs. Apart from their lower expected return, managed futures appear to be more effective diversifiers than hedge funds. Adding managed futures to a portfolio of stocks and bonds will reduce that portfolio's standard deviation more and quicker than hedge funds will, and without the undesirable side-effects on skewness and kurtosis. This does not mean that hedge funds are superfluous though. Overall portfolio standard deviation can be reduced further by combining both hedge funds and managed futures with stocks and bonds. As long as at least 45-50% of the alternatives allocation is allocated to managed futures, this again will not have any negative side-effects on skewness and kurtosis. Assuming that on average hedge funds will continue to provide higher returns than managed futures, the inclusion of hedge funds will also boost the portfolio's expected return somewhat.

REFERENCES

Kat, H (2002a), Taking the Sting Out of Hedge Funds, Working Paper ISMA Centre, University of Reading.

Kat, H (2002b), In Search of the Optimal Fund of Hedge Funds, Working Paper ISMA Centre, University of Reading.

FOOTNOTES

1. Note that contrary to the Mount Lucas Management (MLM) index, the Stark 300 is a true CTA index.

2. Over the sample period the MLM index has a mean of 0.89%, a standard deviation of 1.63%, a skewness of –0.81 and a kurtosis of 3.42. The Stark 300 index therefore has fundamentally different skewness and kurtosis properties than the MLM index as well.

Table 1: Basic statistics S&P 500, bonds, hedge funds and managed futures

	S&P 500	**Bonds**	**Hedge Funds**	**Managed Fut.**
Mean	1.00	0.45	0.99	0.70
Standard Deviation	4.39	1.77	2.44	2.89
Skewness	-0.82	0.58	-0.47	0.45
Excess Kurtosis	1.05	1.45	2.67	0.21
	Correlations			
	S&P 500	**Bonds**	**Hedge Fund**	**Managed Fut.**
S&P 500	1			
Bonds	0.15	1		
HF	0.63	-0.05	1	
MF	-0.07	0.20	-0.14	1

Table 2: Return statistics 50/50 portfolios of stocks, bonds and hedge funds or managed futures

	Hedge Funds					Managed Futures			
% HF	Mean	SD	Skew	Kurt	% MF	Mean	SD	Skew	Kurt
0	0.72	2.49	-0.33	-0.03	0	0.72	2.49	-0.33	-0.03
5	0.73	2.43	-0.40	0.02	5	0.71	2.37	-0.28	-0.18
10	0.74	2.38	-0.46	0.08	10	0.71	2.26	-0.21	-0.30
15	0.76	2.33	-0.53	0.17	15	0.71	2.16	-0.14	-0.39
20	0.77	2.29	-0.60	0.28	20	0.71	2.08	-0.06	-0.42
25	0.78	2.25	-0.66	0.42	25	0.71	2.00	0.02	-0.40
30	0.80	2.22	-0.72	0.58	30	0.71	1.95	0.10	-0.32
35	0.81	2.20	-0.78	0.77	35	0.71	1.91	0.18	-0.20
40	0.82	2.18	-0.82	0.97	40	0.71	1.89	0.24	-0.06
45	0.84	2.17	-0.85	1.19	45	0.71	1.89	0.30	0.08
50	0.85	2.16	-0.87	1.41	50	0.71	1.91	0.34	0.19
55	0.86	2.16	-0.88	1.63	55	0.71	1.95	0.37	0.25
60	0.88	2.17	-0.88	1.85	60	0.71	2.00	0.40	0.26
65	0.89	2.18	-0.86	2.04	65	0.71	2.07	0.41	0.25
70	0.91	2.20	-0.82	2.22	70	0.71	2.16	0.42	0.22
75	0.92	2.23	-0.78	2.36	75	0.71	2.26	0.42	0.19
80	0.93	2.26	-0.73	2.48	80	0.71	2.36	0.43	0.16
85	0.95	2.30	-0.67	2.57	85	0.71	2.48	0.43	0.15
90	0.96	2.34	-0.60	2.63	90	0.70	2.61	0.44	0.16
95	0.97	2.39	-0.54	2.66	95	0.70	2.75	0.44	0.18
100	0.99	2.44	-0.47	2.67	100	0.70	2.89	0.45	0.21

Table 3: Return statistics 33/66 portfolios of stocks, bonds and hedge funds or managed futures

	Hedge Funds					Managed Futures			
% HF	Mean	SD	Skew	Kurt	% MF	Mean	SD	Skew	Kurt
0	0.62	2.01	0.03	0.21	0	0.62	2.01	0.03	0.21
5	0.64	1.97	-0.05	0.13	5	0.62	1.93	0.09	0.17
10	0.66	1.93	-0.14	0.08	10	0.63	1.85	0.15	0.14
15	0.68	1.90	-0.24	0.04	15	0.63	1.79	0.22	0.15
20	0.69	1.87	-0.34	0.04	20	0.64	1.75	0.28	0.18
25	0.71	1.86	-0.43	0.09	25	0.64	1.71	0.34	0.24
30	0.73	1.85	-0.52	0.17	30	0.65	1.70	0.39	0.30
35	0.75	1.84	-0.60	0.31	35	0.65	1.70	0.42	0.36
40	0.77	1.85	-0.66	0.49	40	0.65	1.72	0.45	0.41
45	0.79	1.86	-0.71	0.70	45	0.66	1.76	0.47	0.43
50	0.80	1.89	-0.75	0.94	50	0.66	1.81	0.48	0.42
55	0.82	1.92	-0.76	1.20	55	0.67	1.88	0.48	0.40
60	0.84	1.95	-0.76	1.45	60	0.67	1.96	0.48	0.36
65	0.86	1.99	-0.75	1.69	65	0.67	2.05	0.47	0.33
70	0.88	2.04	-0.73	1.92	70	0.68	2.14	0.47	0.29
75	0.90	2.10	-0.69	2.11	75	0.68	2.25	0.46	0.26
80	0.91	2.16	-0.65	2.28	80	0.69	2.37	0.46	0.24
85	0.93	2.22	-0.61	2.42	85	0.69	2.49	0.45	0.22
90	0.95	2.29	-0.56	2.53	90	0.70	2.62	0.45	0.21
95	0.97	2.37	-0.51	2.61	95	0.70	2.75	0.45	0.21
100	0.99	2.44	-0.47	2.67	100	0.70	2.89	0.45	0.21

Table 4: Return statistics portfolios of hedge funds and managed futures

% MF	Mean	SD	Skew	Kurt
0	0.99	2.44	-0.47	2.67
5	0.97	2.31	-0.37	2.31
10	0.96	2.18	-0.27	1.91
15	0.94	2.06	-0.15	1.46
20	0.93	1.96	-0.03	1.01
25	0.92	1.88	0.09	0.59
30	0.90	1.81	0.20	0.23
35	0.89	1.76	0.29	-0.01
40	0.87	1.74	0.36	-0.14
45	0.86	1.74	0.39	-0.17
50	0.85	1.76	0.39	-0.15
55	0.83	1.80	0.38	-0.10
60	0.82	1.87	0.37	-0.07
65	0.80	1.95	0.36	-0.05
70	0.79	2.05	0.35	-0.04
75	0.77	2.17	0.35	-0.02
80	0.76	2.29	0.36	0.00
85	0.75	2.43	0.38	0.03
90	0.73	2.58	0.40	0.08
95	0.72	2.73	0.42	0.14
100	0.70	2.89	0.45	0.21

Table 5: Allocations and change in mean and kurtosis 50/50 portfolios of stocks, bonds, hedge funds, managed futures and cash with –0.33 skewness and standard deviations as in third column table 2

Initial % HF	% Stocks	% Bonds	% HF	% MF	% Cash	Gain Mean pa	Change Kurt
0	50.00	50.00	0.00	0.00	0.00	0.00	0.00
5	47.42	47.42	4.99	5.48	-5.30	0.66	-0.18
10	44.71	44.71	9.94	9.95	-9.30	1.15	-0.34
15	41.99	41.99	14.82	13.60	-12.40	1.53	-0.50
20	39.34	39.34	19.67	16.55	-14.90	1.83	-0.66
25	36.67	36.67	24.45	18.91	-16.70	2.05	-0.82
30	34.09	34.09	29.22	20.80	-18.20	2.23	-0.98
35	31.55	31.55	33.98	22.33	-19.40	2.37	-1.15
40	29.06	29.06	38.75	23.32	-20.20	2.46	-1.31
45	26.61	26.61	43.54	24.04	-20.80	2.53	-1.46
50	24.25	24.25	48.50	24.40	-21.40	2.60	-1.59
55	21.88	21.88	53.48	24.46	-21.70	2.64	-1.70
60	19.52	19.52	58.56	24.10	-21.70	2.64	-1.77
65	17.18	17.18	63.81	23.33	-21.50	2.62	-1.78
70	14.81	14.81	69.12	22.26	-21.00	2.57	-1.74
75	12.41	12.41	74.46	20.91	-20.20	2.49	-1.66
80	9.99	9.99	79.90	19.02	-18.90	2.34	-1.51
85	7.53	7.53	85.30	16.75	-17.10	2.13	-1.30
90	5.04	5.04	90.64	13.99	-14.70	1.84	-1.06
95	2.52	2.52	95.80	10.96	-11.80	1.49	-0.79
100	0.00	0.00	100.83	7.47	-8.30	1.06	-0.51

Table 6: Allocations and change in mean and kurtosis 33/66 portfolios of stocks, bonds, hedge funds, managed futures and cash with 0.03 skewness and standard deviations as in third column table 3

Initial % HF	% Stocks	% Bonds	% HF	% MF	% Cash	Gain Mean pa	Change Kurt
0	33.33	66.67	0.00	0.00	0.00	0.00	0.00
5	32.08	64.16	5.07	6.70	-8.00	0.98	-0.07
10	30.54	61.07	10.18	12.71	-14.50	1.79	-0.15
15	28.83	57.66	15.26	17.96	-19.70	2.44	-0.22
20	26.99	53.99	20.25	22.37	-23.60	2.93	-0.31
25	25.11	50.22	25.11	26.06	-26.50	3.29	-0.42
30	23.21	46.41	29.84	29.04	-28.50	3.53	-0.56
35	21.32	42.63	34.44	31.41	-29.80	3.69	-0.73
40	19.47	38.94	38.94	33.15	-30.50	3.76	-0.93
45	17.65	35.29	43.31	34.35	-30.60	3.76	-1.15
50	15.85	31.71	47.56	35.18	-30.30	3.70	-1.38
55	14.11	28.23	51.75	35.51	-29.60	3.59	-1.61
60	12.41	24.82	55.85	35.31	-28.40	3.41	-1.82
65	10.73	21.46	59.79	34.72	-26.70	3.16	-1.99
70	9.08	18.16	63.55	33.92	-24.70	2.87	-2.13
75	7.46	14.93	67.18	32.63	-22.20	2.51	-2.21
80	5.88	11.76	70.59	31.16	-19.40	2.11	-2.23
85	4.34	8.68	73.75	29.54	-16.30	1.66	-2.21
90	2.84	5.67	76.58	27.61	-12.70	1.13	-2.13
95	1.39	2.78	79.22	25.62	-9.00	0.59	-2.01
100	0.00	0.00	81.48	23.52	-5.00	-0.01	-1.87

Figure 1: Mean 50/50 portfolios of stocks, bonds, HF and MF

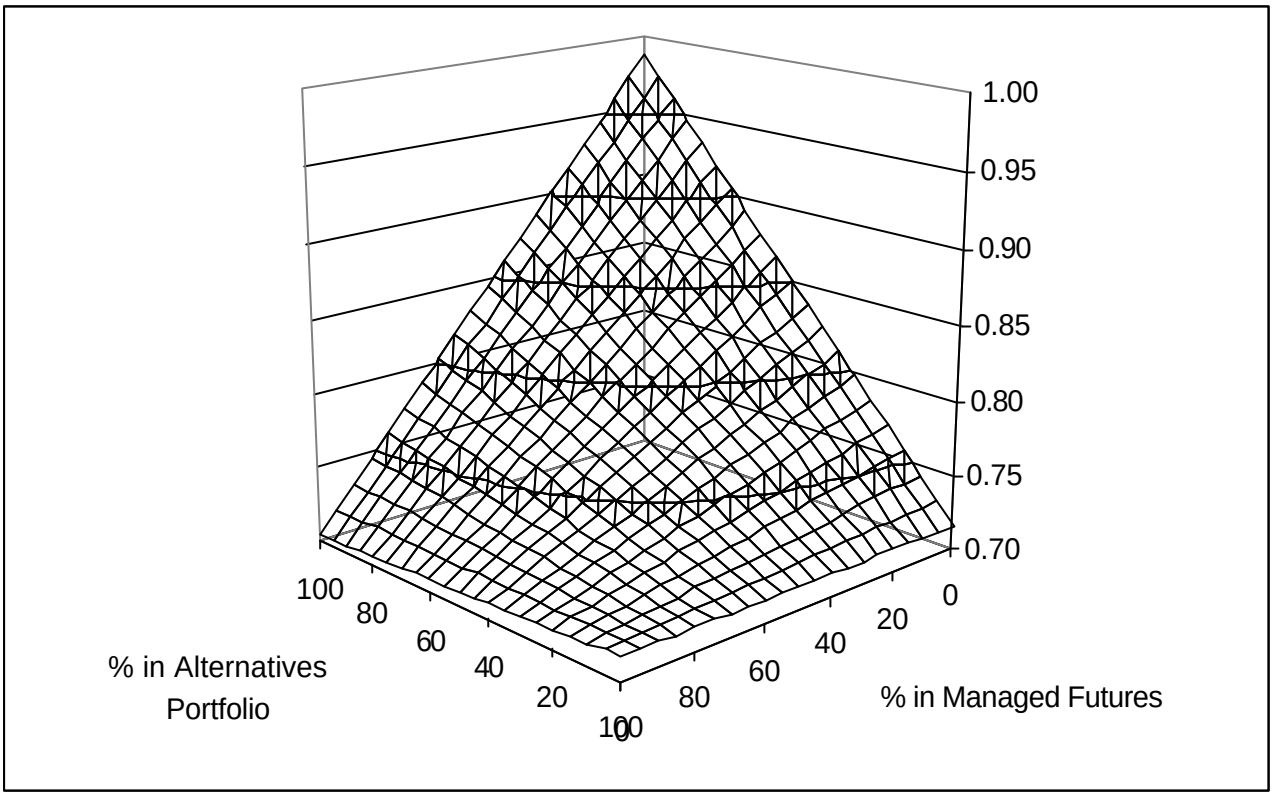


Figure 2: Mean 33/66 portfolios of stocks, bonds, HF and MF

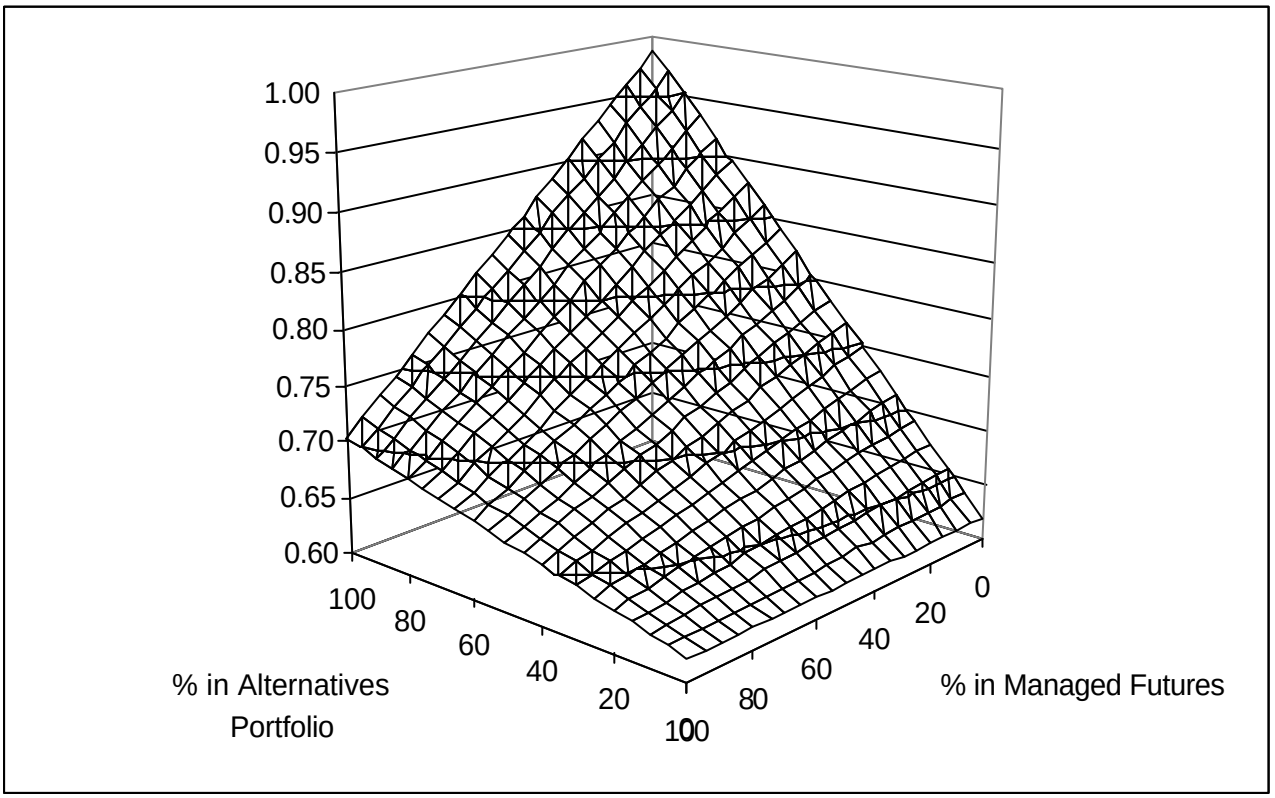


Figure 3: Std deviation 50/50 portfolios of stocks, bonds, HF and MF

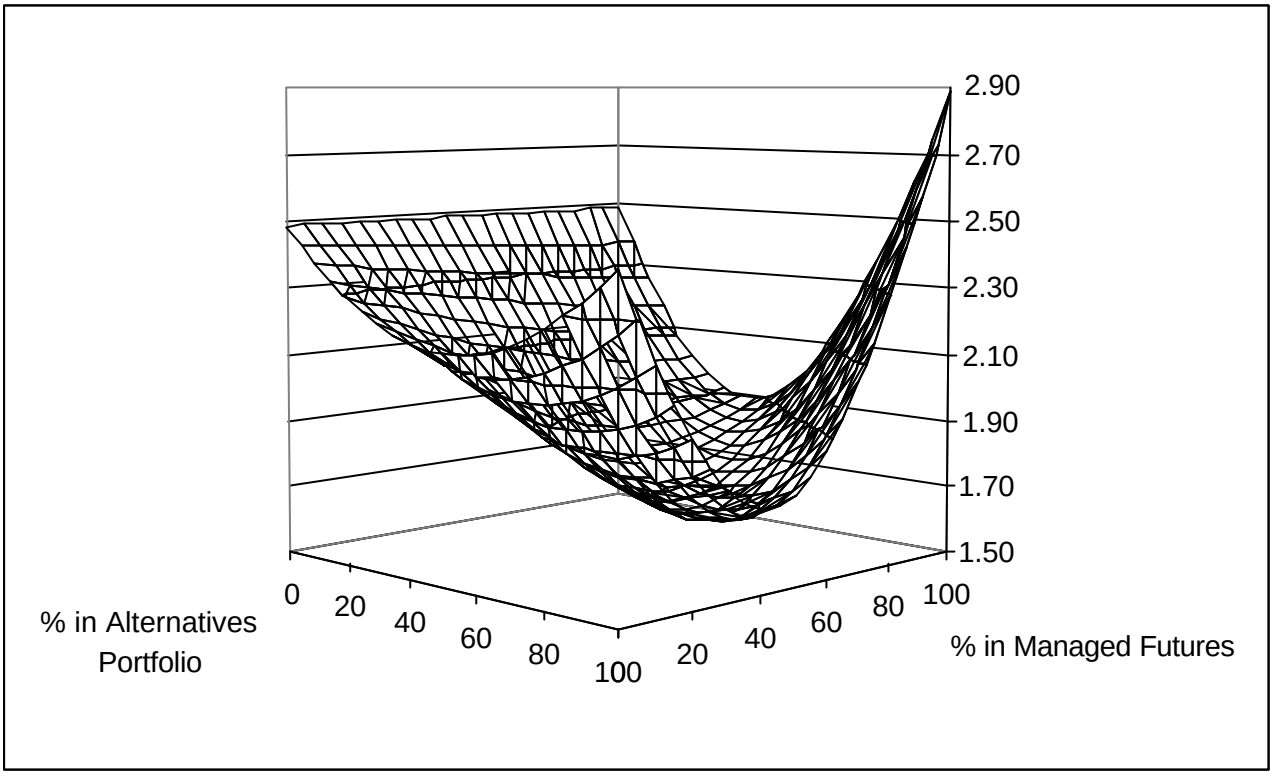


Figure 4: Std deviation 33/66 portfolios of stocks, bonds, HF and MF

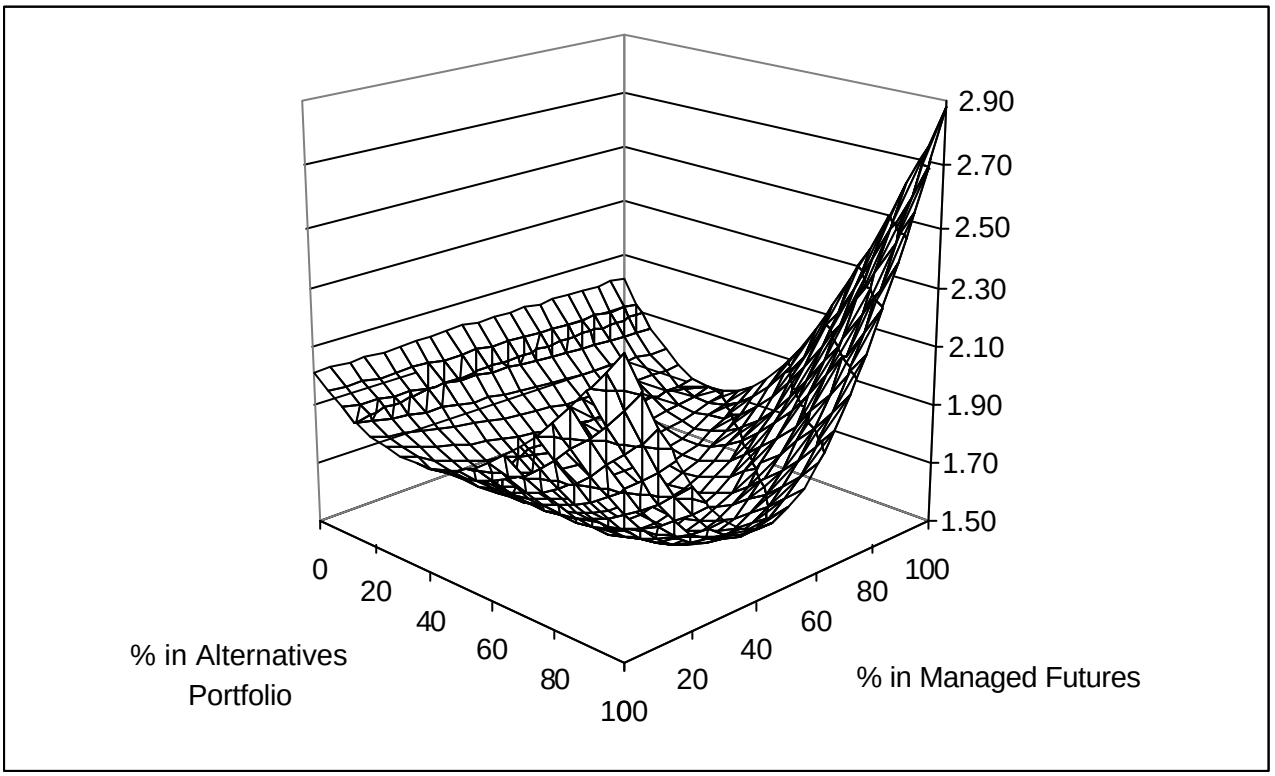


Figure 5: Skewness 50/50 portfolios of stocks, bonds, HF and MF

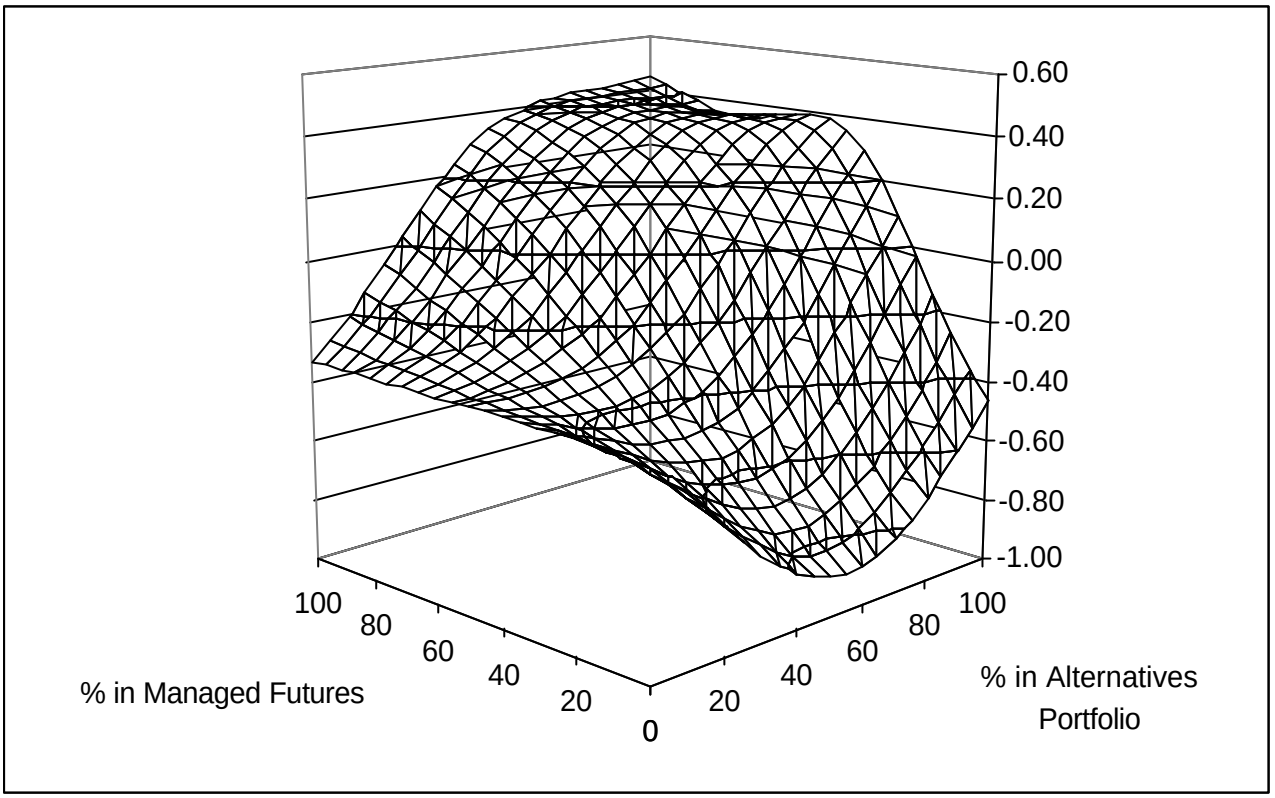


Figure 6: Skewness 33/66 portfolios of stocks, bonds, HF and MF

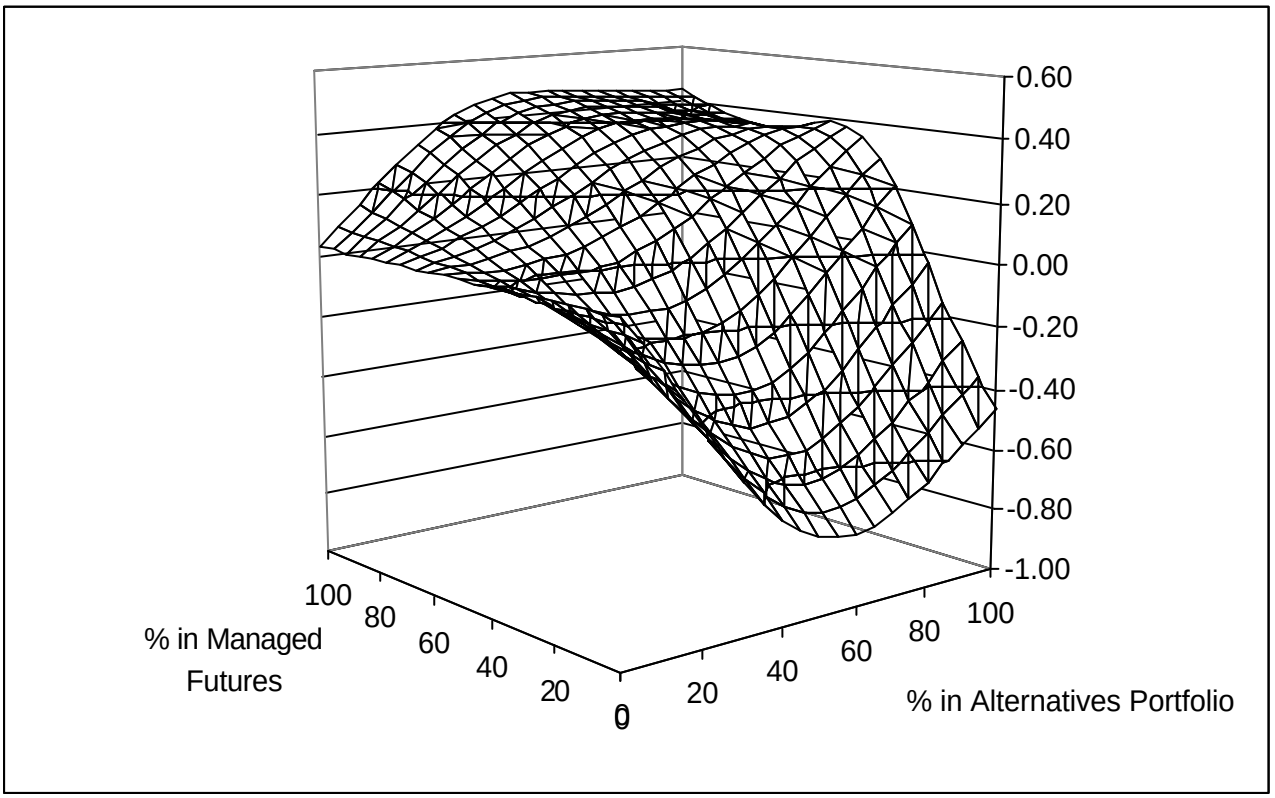


Figure7: Kurtosis 50/50 portfolios of stocks, bonds, HF and MF

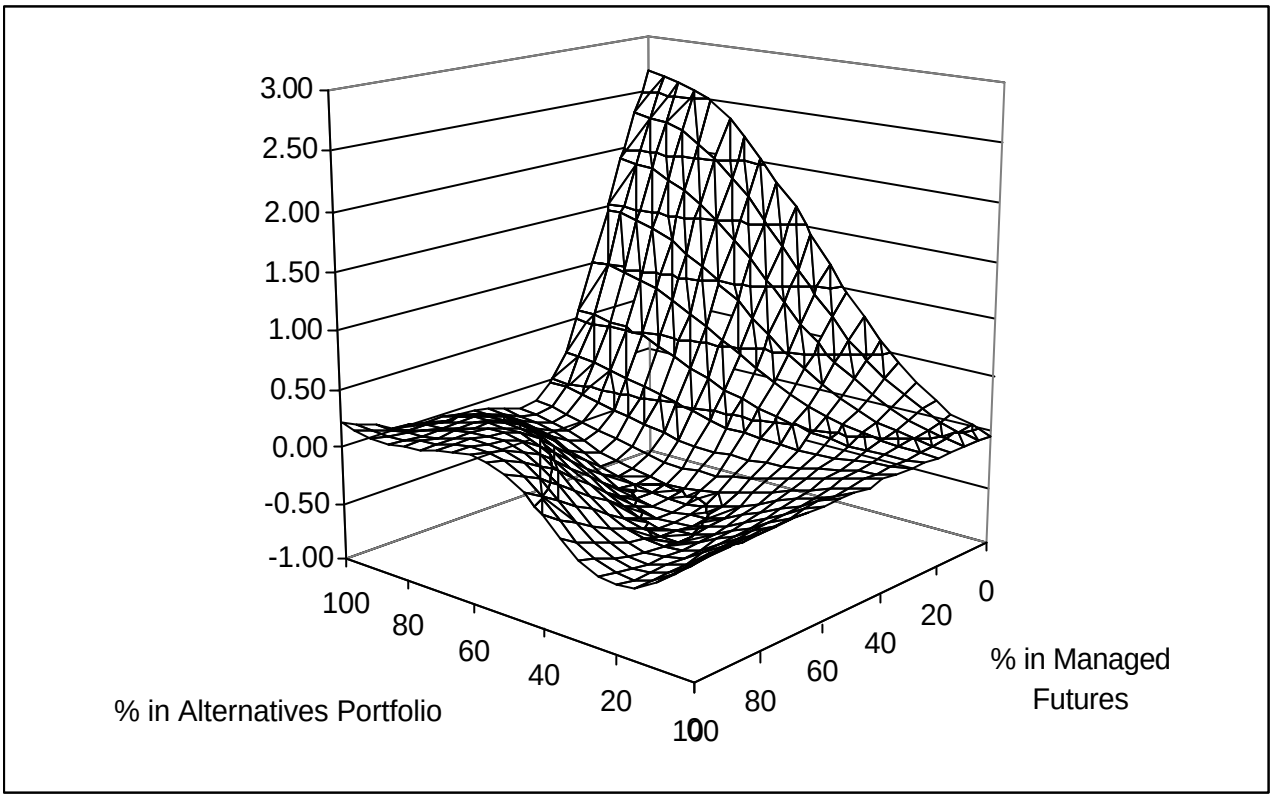
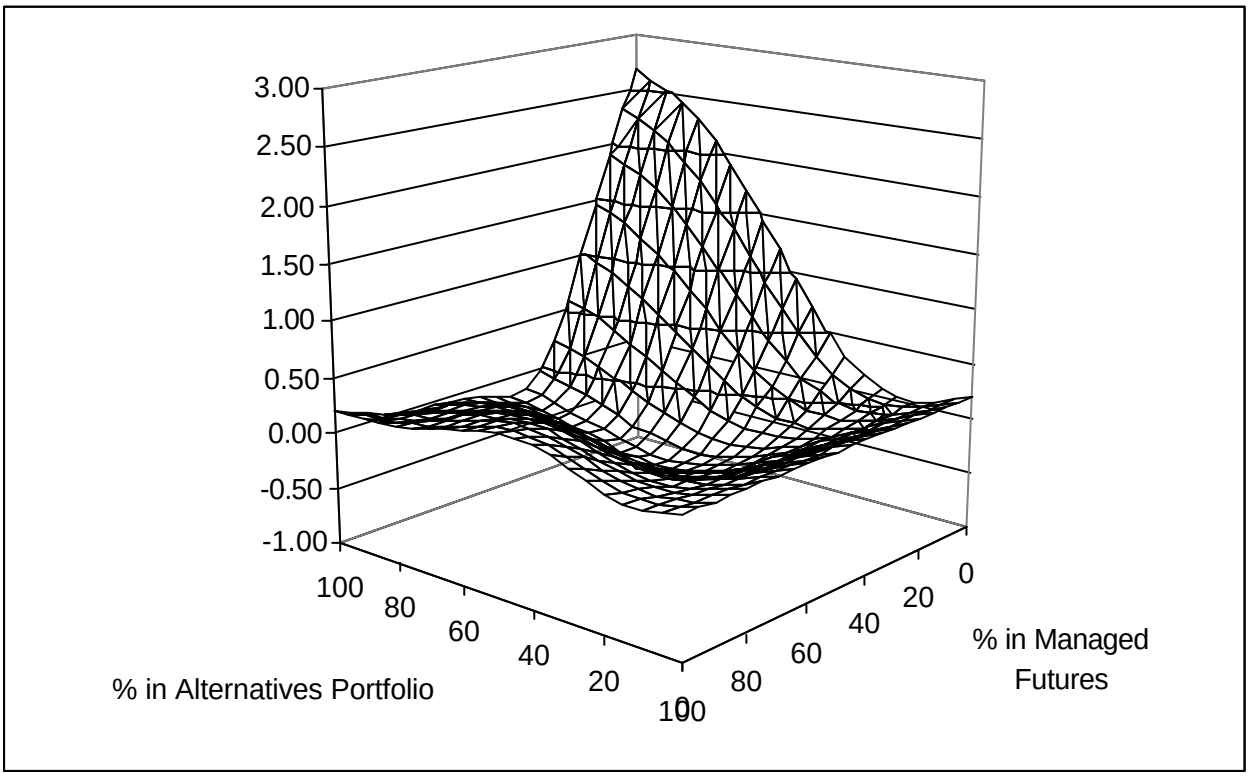
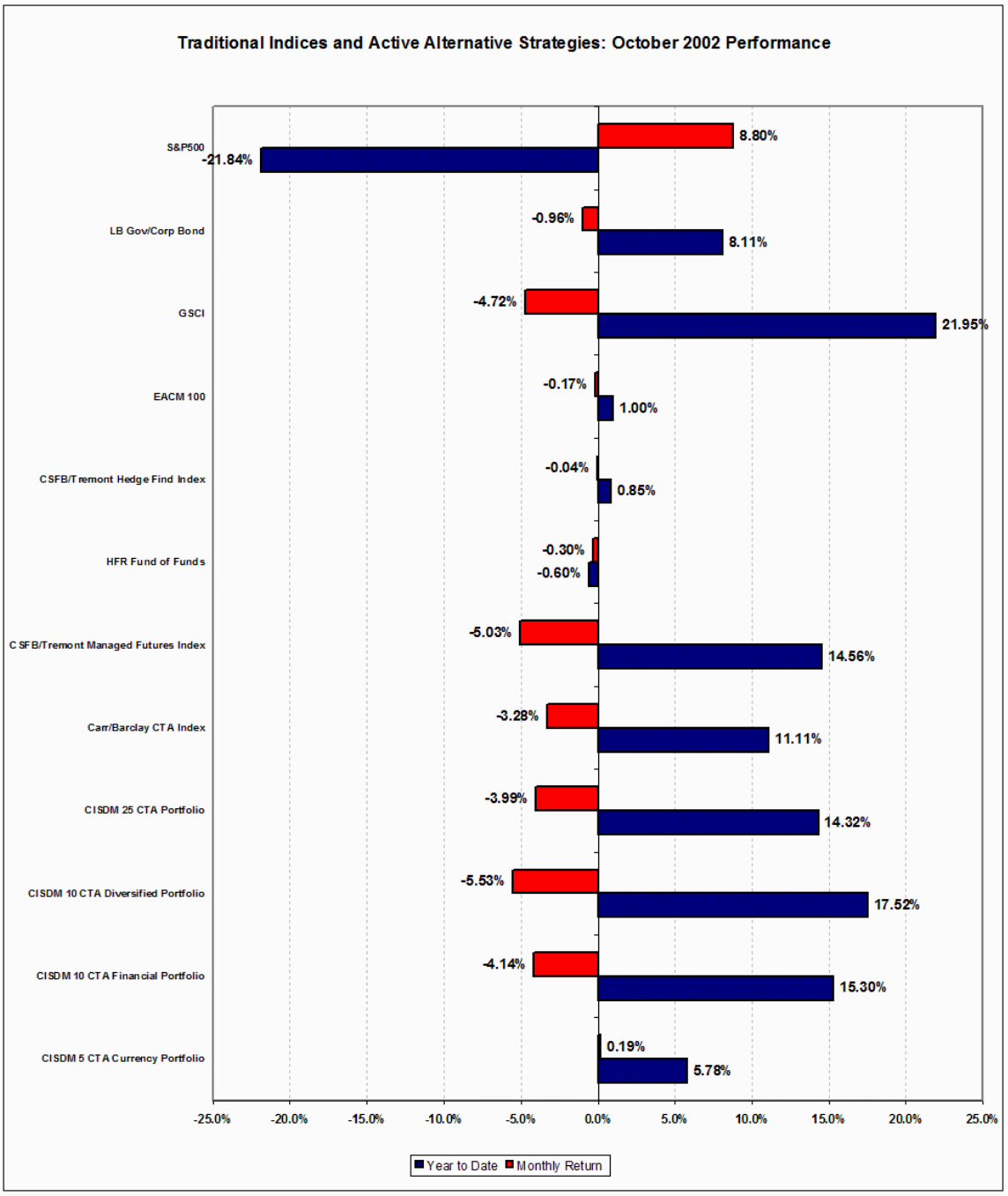


Figure 8: Kurtosis 33/66 portfolios of stocks, bonds, HF and MF




Traditional Indices and Active Alternative Strategies: October 2002 Performance
S&P500
-21.84%
8.80%
LB Gov/Corp Bond
-0.96%
8.11%
GSCI
-4.72%
21.95%
EACM 100
-0.17%
1.00%
CSFB/Tremont Hedge Find Index
-0.04%
0.85%
HFR Fund of Funds
-0.30%
-0.60%
CSFB/Tremont Managed Futures Index
-5.03%
14.56%
Carr/Barclay CTA Index
-3.28%
11.11%
CISDM 25 CTA Portfolio
-3.99%
14.32%
CISDM 10 CTA Diversified Portfolio
-5.53%
17.52%
CISDM 10 CTA Financial Portfolio
-4.14%
15.30%
CISDM 5 CTA Currency Portfolio
0.19%
5.78%
-25.0%
-20.0%
-15.0%
-10.0%
-5.0%
0.0%
5.0%
10.0%
15.0%
20.0%
25.0%
Year to Date
Monthly Return