

# **Historical Performance of Passive and Tactical Investments**

A White Paper  
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## **Abstract**

Buy-and-hold investing suffered several very large losses between 1998 and 2013. This white paper evaluates the size of those losses for a range of various buy-and-hold investments and typical investment portfolio combinations. Some of these losses are well over 50%. There are a number of tactical fund or tactical manager categories that claim capabilities of being able to avoid or mitigate much of these losses by changing asset allocations on a timely basis. This white paper evaluates the historical performance of tactical mutual funds, commodity trading advisors, global macro hedge funds and tactical separately managed accounts. The question is whether these tactical investment categories were able to deliver actual performance with acceptable returns and risk from 1998 to 2013 and specifically during the most serious equity market loss intervals.

The date was October 10<sup>th</sup>, 2008. The Wall Street Journal headline screamed “Market's 7-Day Rout Leaves U.S. Reeling.” Indeed, the S&P500 price index had lost 20% of its value in the previous 7 days. That was bad enough, but since exactly one year before, from October 10<sup>th</sup>, 2007, the S&P500 was down over 42%. Any investor who thought the market could not go any lower would have to wait until March 9<sup>th</sup>, 2009 to see the true bottom, with the S&P500 price index down a total of 57%. This represented the worst loss in the stock market since the 1929-1932 market crash that obliterated 89% of the value of stocks.

Buy-and-hold investors fully committed to stocks from October 10<sup>th</sup>, 2007 to March 9<sup>th</sup>, 2009 must have asked themselves what they could have done to avoid this disaster. Pity the poor broker fielding calls from clients questioning the wisdom of the buy-and-hold philosophy. The theory was that such losses would ultimately be recouped if the investors simply held on for the long run. This time the recovery for the S&P500 price index would have to wait until March 14, 2013, requiring 64 months, and that only put the investor back to even.

So, what could the investor fully committed to stocks have done to reduce or eliminate this buy-and-hold loss of 57%? The most obvious response is that he could have been diversified by having a portion of his buy-and-hold portfolio in bonds or gold or oil or a host of equity sector or country indices. Alternatively, he could abandon the buy-and-hold philosophy for some portion of his portfolio. We shall investigate all of these possibilities

### **What is Passive Investing.**

Passive investing and buy-and-hold investing are the same thing. An investor decides on a portfolio to hold that provides an opportunity to meet his goals. Once the portfolio is established, no changes are made as time goes by. Of course, no one will lock-in a portfolio forever. Something will change that induces an investor to revise the portfolio. If changes are made every year or longer, then the process is sometimes referred to as strategic investing. Technically an investor who rebalances his portfolio annually is not truly passive, but he is far less tactical than the investor who shifts positions every week or month. It's a matter of degree. The point is that a passive investor is not chasing the latest hot investment and is not employing short-term trading strategies.

Passive investing has advantages regarding no or low transaction costs and no management fees. The passive investor also has less of a burden of conducting time-consuming research to look for better investment opportunities.

On the other hand, passive investing can still come with anxieties. If the stock market were down 15% in two months' time, is this a signal of worse things to come or just a blip on the radar screen? A true buy-and-hold investor should not worry about such events since the theory is that the market will eventually come back, no matter the size of interim losses. Yet, even the most committed passive investors tend to stew about losses. After all, it took over twenty years for the stock market to recover from the 1929-1932 crash.

## **What is Tactical Investing?**

Tactical investing and tactical asset allocation are the same thing. Tactical investing involves changing asset allocation among a diverse set of investment holdings every week, month or quarter. The investment holdings include stock categories, bond categories, cash and even certain financially-based commodity holding such as gold and oil. Tactical investing should not be confused with *active investing* which typically involves the time-varying selection of stocks for an all-stocks portfolio for the purpose of out-performing some benchmark. Nor should tactical investing be confused with market timing, a trading procedure for deciding to be 100% invested in the stock market or 100% in cash for intervals of time. The problem with tactical investing is wrestling with the procedure for changing holdings. Determining this procedure is done by personal research or by hiring an outside advisor. To accomplish this, the tactical investor can do any of the following:

- Employ technical trading systems
- React to market fundamentals
- Implement broker recommendations
- Subscribe to newsletters
- Invest in tactical mutual funds
- Invest in certain types of global-macro hedge funds
- Hire a tactical registered investment advisor

One major advantage of tactical investing is the possibility of avoiding large market losses. It is even possible to outperform the stock market average by seeking the best combination of market sectors to be in at any point in time.

Of course, these advantages would only accrue to *successful* tactical investors. It is possible to get on the wrong side of market sectors and make things worse than the passive approach. In addition, there are transaction costs and fees that need to be paid. Whether you subscribe to a newsletter or hire a registered investment advisor, there are certain costs of conducting an tactical investment program. Paying 1-2% to an investment advisor may or may not be recouped by increased performance. Only analysis of the actual performance of tactical investments will provide us the answer.

## **Which is Better – Passive or Tactical Investing?**

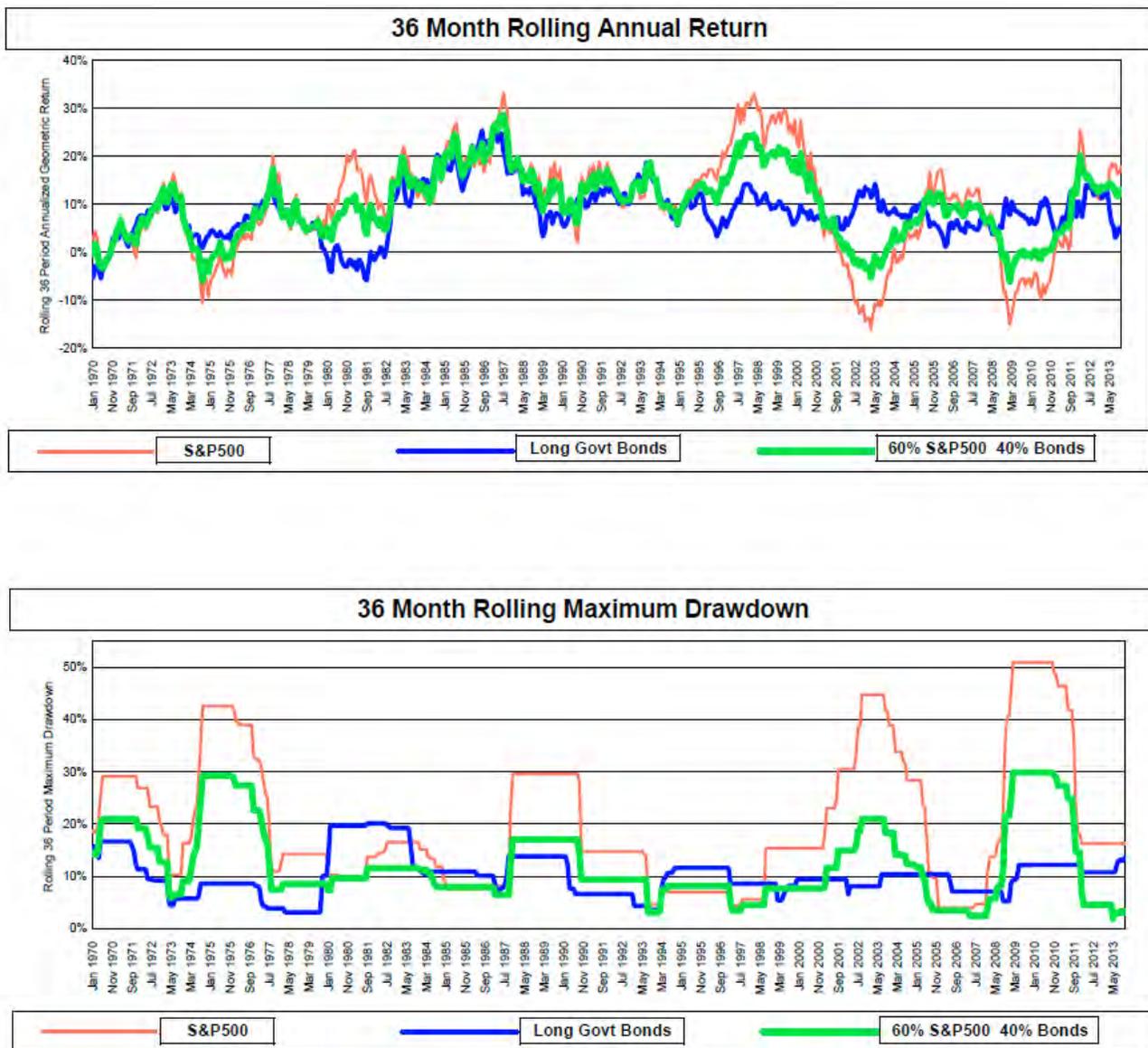
We shall attempt to answer this question by looking at the actual performance of passive and tactical investment classes for the 16 years between 1998 and 2013. It would be desirable to go back even further but the number of tactical investment offerings is very limited prior to 1998. Evaluating the performance of investments always boils down to assessing both investment return and investment risk. That principle will be applied in our analysis. In addition, there is the confusion of different answers applying for different time intervals. We shall address this as well. Finally, there is a decision of the objective measure to be used to select the best answer. Do we want the highest return, the lowest risk or some trade-off between the two? Or is there some other measure we care about the most, such as the return the investment achieved during the November, 2007 to February, 2009 interval when stocks took such a drubbing?

## **Performance of Buy-and-Hold Investing in Indices Back to 1972.**

Before we evaluate tactical investments, we will evaluate the history of passive investment opportunities. If an investor has no problem with the historical performance of passive investments, then why should he bother evaluating tactical investments. Since most passive

investment indices eventually recover from losses, no matter how large the losses are, then perhaps, there is no problem for the buy-and-hold investor.

The historical performance of three buy-and-hold investment indices can be seen in Figure 1. The investment labeled S&P500 is the 36-month rolling return for the S&P500 total return index with dividends reinvested. The investment labeled Long Govt Bonds is the 36-month rolling return for US Government Bonds with terms over 10 years. The investment labeled 60% S&P500, 40% Bonds is a 60/40 mix of the first two investments rebalanced on a monthly basis. From 1970 to 2013, the S&P500 shows three 36-month instances during which the rate of return was lower than  $-10\%$ . On their own, these three low-return excursions would probably not be enough to concern a determined buy-and-hold investor. They may be offset by the instances of 36-month return intervals above  $+20\%$ , especially in the late 1990's. The maximum drawdowns displayed in Figure 2 are another matter. The five drawdowns greater than  $25\%$  for the S&P500 should be a significant cause for concern.



Not only is the depth of these S&P500 total return drawdowns a concern but the length of time for each drawdown to return to its beginning index level is also worrisome. Investors who have made a commitment to a buy-and-hold process could easily lose heart while waiting out the 6 years just to get back to even. A recap of these five drawdowns is shown in Table 1.

<b>Dates for Drawdown and Return to Even</b>	<b>Depth of Drawdown</b>	<b>Months to Return to Even</b>
December 1968 – March 1971	29.09%	28
January 1973 – May 1975	42.57%	29
September 1987- February 1989	29.58%	18
September 2000 – October 2006	44.73%	74
November 2007 - March 2012	50.94%	53

Table 1

Note that the depth of drawdown and the months to return to even are based on a total return index with dividends reinvested. The 64 months return to even for 2007-2013 mentioned earlier is based on a price return index without the benefit of dividends.

Many buy-and-hold investors must have found these recovery times an unbearable wait to recoup their losses. Because of these extraordinarily long recovery times, it is assumed that a significant percentage of long term investors fully invested in the stock market would not have stayed with a buy-and-hold philosophy. If they liquidated their equity position somewhere near the bottom and then waited until a recovery was fully underway, they could have given up a significant part of the recovery return. This, of course, would have made their long term performance even worse.

### **Performance of Buy-and-Hold Investing in Two Broad ETFs Back to 1998.**

Using monthly data from January 1998 to December 2013, Table 2 evaluates the performance of portfolios containing varying allocations to an Equity and a Fixed Income ETF. This provides some insight into the impact that the simplest type of diversification can have on a portfolio. The SPY ETF represents the performance of the S&P500 and the TLT ETF represents the performance of long-dated U.S. government bonds with maturities over 20 years. Portfolios are shown with the following allocations: 100% to the SPY ETF down to 0% to SPY, with the balance allocated to the TLT ETF. Portfolios are rebalanced monthly. For simplicity, no transaction costs or commissions are included for the portfolio rebalancing. This tends to overstate the returns of the portfolios. The portfolios are not really buy-and-hold. They are buy and rebalance monthly. The performance statistics are followed by the annual returns achieved. The highlighted years are the years during which the S&P 500 suffered significant drawdowns within the interval. The 50/50 mix has the lowest annual standard deviation and the highest Sharpe ratio. All portfolio returns are on the modest side. Even the 50/50 mix still shows a 21.75% loss in the 2007-2009 maximum drawdown period for the S&P500.

## Simple Equity and Fixed Income Portfolios - Buy and Hold

	ETF SPY 100%	ETF SPY 70% ETF TLT 30%	ETF SPY 60% ETF TLT 40%	ETF SPY 50% ETF TLT 50%	ETF TLT 100%
<b>Statistics for Jan 1998-Dec 2013</b>					
Average Annual Return	5.89	6.63	6.76	6.85	6.41
Annual Standard Deviation	15.87	10.60	9.33	8.49	12.43
Percent of Months > 0	59.90	61.46	65.10	65.63	56.25
Maximum Drawdown	50.79	34.70	28.46	22.32	21.80
Sharpe Ratio (2.52% Risk Free)	0.21	0.39	0.45	0.51	0.31
Correlation vs S&P500	1.00	0.94	0.86	0.71	-0.30
Up Capture Ratio versus S&P500	98.59	64.38	53.67	43.33	-3.78
Down Capture Ratio versus S&P500	99.38	62.04	48.05	33.26	-54.78
Cumulative Return Nov 2007 - Feb 2009	-50.79	-34.70	-28.46	-21.75	20.04
<b>Annual Returns</b>					
1998	28.65	25.02	23.66	22.24	14.17
1999	20.35	10.10	6.86	3.68	-11.16
2000	-9.77	-0.94	2.11	5.25	21.87
2001	-12.07	-7.16	-5.58	-4.06	2.84
2002	-21.59	-10.58	-6.78	-2.90	17.45
2003	28.17	20.00	17.31	14.62	1.59
2004	10.69	10.22	10.05	9.88	8.73
2005	4.84	6.17	6.56	6.98	8.60
2006	15.83	11.18	9.65	8.16	0.70
2007	5.16	6.94	7.47	8.02	10.32
2008	-36.81	-19.78	-13.37	-6.57	33.94
2009	26.36	10.16	5.10	0.22	-21.80
2010	14.59	13.99	13.58	13.08	9.00
2011	1.89	11.71	14.97	18.21	34.00
2012	16.00	12.30	10.99	9.64	2.43
2013	32.29	16.88	12.10	7.47	-13.38

Table 2

### **Performance of Buy-and-Hold Investing in 9 ETFs Back to 1998.**

Broad Equity and Fixed Income indices are only one possibility when it comes to portfolio diversification. There are a host of equity industrial sectors that could be employed. There are also a number of fixed income classes available. In addition, there are a number of commodities such as gold and oil that could be utilized. To this end, a list of 10 investments including 9 ETFs plus Treasury Bills is evaluated back to January 1998. Some of these ETFs were not trading on January 1998. For example, the ETF for Gold, GLD, began trading in December 2004. In this case, performance estimates for GLD from January 1998 to November 2004 were created based on a regression analysis using the London bullion market PM Fix for gold. The regression analysis for the relationship between the London PM gold fix and the GLD ETF was found to have an R-squared for the fit of over 0.96, a very strong relationship. Other ETFs missing data back to January 1998 had data back-filled using similar processes. Using data back to 1998 allows us to evaluate the performance of investment sectors though economic conditions covering two U.S. economic cycles. These two cycles suffered recessions in 2001 and 2007-9, as determined by the National Bureau of Economic Research. The performance histories of these nine ETFs plus Treasury Bills are displayed in Tables 3 and 4.

## Various Investment Sector ETFs – Buy and Hold

	ETF SPY S&P500	ETF EFA EAFE Stocks	ETF EEM Emerg Mkt	ETF DBO Crude Oil	ETF GLD Gold
<b>Statistics for Jan 1998-Dec 2013</b>					
Average Annual Return	5.89	5.44	7.71	16.34	9.21
Annual Standard Deviation	15.87	17.60	25.55	28.46	17.38
Percent of Months > 0	59.90	59.90	56.25	56.77	55.21
Maximum Drawdown	50.79	56.56	60.88	65.78	34.65
Sharpe Ratio (2.56% Risk Free)	0.21	0.17	0.20	0.49	0.39
Correlation vs S&P500	1.00	0.86	0.78	0.27	0.04
Up Capture Ratio versus S&P500	98.59	94.06	141.92	70.88	22.07
Down Capture Ratio versus S&P500	99.38	97.25	124.27	21.31	-17.15
Cumulative Return Nov 2007 - Feb 2009	-50.79	-56.56	-60.88	-44.38	17.83
<b>Annual Returns</b>					
1998	28.65	20.17	-25.68	-37.83	-0.23
1999	20.35	27.04	65.46	100.42	1.44
2000	-9.77	-13.91	-30.94	42.25	-4.66
2001	-12.07	-20.96	-2.87	0.95	1.28
2002	-21.59	-15.59	-6.48	47.53	24.90
2003	28.17	38.46	59.88	44.38	19.54
2004	10.69	19.76	24.66	70.81	5.87
2005	4.84	13.38	32.61	51.30	17.76
2006	15.83	25.99	31.22	3.93	22.54
2007	5.16	10.97	33.32	37.88	30.47
2008	-36.81	-43.15	-49.46	-44.42	4.92
2009	26.36	31.39	68.98	42.89	24.04
2010	14.59	7.41	15.68	2.36	29.27
2011	1.89	-12.20	-18.78	1.24	9.57
2012	16.00	17.22	19.06	-9.21	6.60
2013	32.29	22.62	-3.65	6.80	-28.33

Table 3

	ETF IYR Real Est	ETF IHF Health Provid	ETF TLT 20 Yr Govt	ETF LQD Corp Bond	T-Bills 90 Day
<b>Statistics for Jan 1998-Dec 2013</b>					
Average Annual Return	6.30	16.81	6.41	8.48	2.52
Annual Standard Deviation	21.96	23.16	12.43	7.81	0.64
Percent of Months > 0	63.02	67.71	56.25	65.10	98.96
Maximum Drawdown	70.65	52.35	21.80	15.11	0.01
Sharpe Ratio (2.56% Risk Free)	0.17	0.62	0.31	0.76	0.00
Correlation vs S&P500	0.62	0.55	-0.30	0.12	-0.07
Up Capture Ratio versus S&P500	92.30	102.30	-3.78	23.65	4.85
Down Capture Ratio versus S&P500	92.27	57.14	-54.78	-9.35	-7.09
Cumulative Return Nov 2007 - Feb 2009	-65.77	-49.27	20.04	-4.47	2.85
<b>Annual Returns</b>					
1998	-20.40	12.46	14.17	12.77	5.23
1999	-7.88	-9.53	-11.16	-5.25	4.82
2000	24.66	73.11	21.87	15.50	6.19
2001	10.58	6.56	2.84	14.10	4.43
2002	3.44	19.58	17.45	17.45	1.78
2003	35.34	43.36	1.59	33.70	1.16
2004	30.12	53.03	8.73	5.71	1.33
2005	9.03	45.21	8.60	1.14	3.06
2006	33.14	-4.16	0.70	4.22	4.85
2007	-19.84	17.10	10.32	3.71	5.00
2008	-40.56	-43.47	33.94	2.41	2.07
2009	30.61	35.45	-21.80	8.45	0.21
2010	26.56	11.46	9.00	9.34	0.15
2011	5.53	9.41	34.00	9.75	0.15
2012	18.20	17.40	2.43	10.25	0.13
2013	1.17	36.58	-13.38	-1.99	0.13

Table 4

Three of the ETFs, Crude Oil (DBO), Gold (GLD), and Healthcare Providers (IHF), had annual returns over 9% but these returns came with high levels of risk. All equity-based ETFs suffered drawdowns over 50%. Even Gold had a drawdown over 30%. All equity-based ETFs had losses greater than 49% in the 2007-2009 maximum drawdown period for the S&P500. On the other hand, both Gold and Government Bonds delivered positive returns during this 2007-2009 interval.

### **Performance of a Buy-and-Hold Portfolio of 9 ETFs Plus T-Bills Back to 1998.**

An equal-weighted portfolio of the 9 ETFs plus 90-Day Treasury Bills was constructed from 1998 to 2013. This portfolio was rebalanced to the same equal weights at the beginning of each month. The question is whether this portfolio could have generated acceptable returns during the 2007-2009 interval. The average return of this portfolio is exceptionally high, but so are the resulting risks. As shown in Table 5, the maximum drawdown is over 34%. Disappointingly, the portfolio also suffered more than a 33% loss in the 2007-2009 maximum drawdown period for the S&P500. This would not be very encouraging to a buy-and-hold investor.

### **Equal Allocation to 10 Market Sectors**

	<b>Index Equal Allocation</b>
<b>Statistics for Jan 1998-Dec 2013</b>	
Average Annual Return	9.78
Annual Standard Deviation	10.50
Percent of Months > 0	66.67
Maximum Drawdown	34.27
Sharpe Ratio (2.52% Risk Free)	0.69
Correlation vs S&P500	0.79
Up Capture Ratio versus S&P500	63.08
Down Capture Ratio versus S&P500	44.93
Cumulative Return Nov 2007 - Feb 2009	-33.63
<b>Annual Returns</b>	
1998	0.70
1999	16.06
2000	10.34
2001	1.15
2002	8.19
2003	30.34
2004	22.51
2005	18.37
2006	13.95
2007	12.99
2008	-23.47
2009	24.54
2010	13.36
2011	4.55
2012	10.19
2013	4.05

Table 5

## **Selection of Tactical Funds and Managers Back to 1998.**

None of the buy-and-hold investments or portfolios evaluated back to 1998 demonstrated encouraging performance, when considering both return and risk. While there were several examples generating interesting rates of return, no one of the examples had both a good rate of return and acceptable risk measures. This was especially true of the losses observed during the November 2007 through February 2009 interval. Since buy-and-hold portfolios did not fare so well, the next question is whether there are categories of tactical investment funds or managers that generated acceptable performance. We shall require that the funds invest in both equities and fixed income, not limiting themselves to one investment class. Tactical fixed income funds are specifically eliminated from consideration. We shall require that each type of investment be represented by at least 13 funds or managers in order to evaluate the performance of the category. Each of these investment types changes allocations to a set of underlying investments as time goes by. The techniques for controlling these allocation changes runs the gamut from technical trading models to macroeconomic models to discretionary determinations. Performance data from each of these investments is used back to 1998 if it goes back that far.

Hedge fund databases are particularly subject to survivor bias (removing from the database previously-reporting tactical funds no longer in operation or no longer wishing to report their numbers publicly). To include the effect of these inactive hedge funds, special efforts were made to include no-longer-reporting hedge funds that were in operation for at least 10 years during the 1998-2103 interval. For each of the categories evaluated only actual track records were employed. No hypothetical performance data resulting from historical simulations was utilized. To keep performance data comparable across categories, all investment returns are net of fees and transaction costs. Each of the investment types evaluated is described below in terms of the allocation methods employed and the source of the data employed.

### **Tactical Mutual Funds**

The Morningstar database of mutual funds classifies certain funds as tactical funds. We employ two of their sub-categories called Tactical Allocation and World Allocation. Funds on the Morningstar database self-classify. Unfortunately, some funds classifying themselves as tactical do not seem to behave as true tactical funds. Of the 22 funds classified as tactical with data back to 2004, 9 of these funds have very strong correlation coefficients with the S&P500 total return index. A true and effective tactical fund should not have a strong relationship with a broad market index. All tactical funds with a correlation with the S&P500 over 0.90 were eliminated from the funds considered. The remaining 13 funds were used for analysis. Of the 13 funds employed, 9 funds had a correlation with the S&P500 between 0.80 and 0.90. These funds were left in the analysis, but their inclusion probably explains the resulting risk levels observed.

### **Commodity Trading Advisors – Diversified**

Barclay Hedge maintains a database of Commodity Trading Advisors including CTAs classified as Diversified. Diversified CTAs typically allocate to multiple futures contracts at one time. This investment refers to an individual managed account program and not to a commodity pool. A total of 55 Diversified CTAs had performance data back to 1998 on the Barclay Hedge database.

### **Macro Hedge Funds – Mixed Methods**

The Hedge Fund Research database classifies certain funds as Macro Multi-Strategy hedge funds. These funds employ discretionary and systematic strategies to allocate to underlying investments on a time-changing basis. This implies that a mixture of techniques is being employed. Due to the low correlation observed between these funds and the S&P500, none of the 23 qualifying funds were removed from consideration.

### Macro Hedge Funds – Fundamental Methods

The Hedge Fund Research database classifies certain funds as Macro Discretionary-Thematic hedge funds. These funds employ discretionary strategies to allocate to underlying investments on a time-changing basis. These funds are heavily influenced by top-down fundamental analysis of macroeconomic variables. Due to the low correlation observed between these funds and the S&P500, none of the 29 qualifying funds were removed from consideration

### Macro Hedge Funds – Technical Methods

The Hedge Fund Research database classifies certain funds as Macro Systematic-Diversified hedge funds. These funds employ mathematical, algorithmic and technical models to allocate to underlying investments on a time-changing basis. Many of these funds rely on trend-following techniques. Due to the low correlation observed between these funds and the S&P500, none of the 58 qualifying funds were removed from consideration.

### Tactical Separately Managed Accounts

Morningstar maintains a database of the performance of Registered Investment Advisors offering separately managed accounts (SMAs). Morningstar classifies a number of these offerings as Tactical programs. The sub-categories involved include Tactical, Strategic and Hybrid programs. To make the selected programs similar to the other tactical investments evaluated, pure fixed-income programs were not included. Investment advisors with SMAs on the Morningstar database self-classify their offerings. Unfortunately, some funds classifying themselves as tactical do not seem to behave as true tactical funds. As we did for the Morningstar tactical mutual funds, any SMA offering having a correlation with the S&P500 over 0.90 was eliminated from analysis. A total of 29 tactical SMAs qualified for evaluation. Morningstar tracks the performance of SMAs on a gross-of-fees basis. This performance was adjusted to include management fees using the program's declared fee level for a \$100,000 account or for the smallest account size if the minimum account was over \$100,000.

### **Performance of Tactical Funds and Managers Back to 1998.**

Each of the tactical fund and manager categories was evaluated back to 1998. These results are dramatically different from the buy-and-hold evaluations previously made. With the exception of Tactical Mutual Funds, the return levels are higher and the risk levels are lower than buy-and-hold across the board. The performance statistics for the tactical funds and managers is given in Table 6.

### Tactical Mutual Fund Performance Analysis

The performance of the tactical mutual funds is somewhat disappointing. The average return for tactical mutual funds is only about 90 basis points higher than the 60/40 Stocks/Bonds benchmark. Relative to this same benchmark the tactical mutual funds have a higher standard deviation and a higher maximum drawdown. The Sharpe ratios are nearly identical indicating that they have virtually the same return/risk tradeoff.

### Diversified Commodity Trading Advisors Analysis

While the average return for Diversified CTAs was not as high as the other Tactical investments, there were times when the performance is very attractive such as 2008. Overall, the correlation and the up capture and down capture ratios show that the performance of Diversified CTAs is independent of the S&P500, a very useful indication for including CTAs in an investment portfolio.

### Macro Hedge Fund Category Analysis

As a group, the hedge fund categories performed extremely well. Their average annual returns were 2-3% better than the 60/40 benchmark. The standard deviation of the hedge fund categories was somewhat higher than the 60/40 benchmark, but inspection shows that the risk-adjusted returns, as indicated by the Sharpe ratios, are on a par with the benchmark Sharpe ratio. This indicates that the hedge funds deliver higher performance at a similar return per unit of risk. The maximum drawdowns of the hedge funds are on a par with the 60/40 benchmark maximum drawdown. The hedge fund category returns during the 2008-2009 time interval are substantially better than the return for the benchmark using this same interval. Because the maximum drawdowns are similar, this means that the hedge funds have suffered similar losses to the benchmark but at substantially different times than 2007-2009.

### Tactical Separately Managed Account Analysis

The performance of the tactical SMAs was better than the 60/40 benchmark in every regard except for standard deviation. The average return for 1998-2013 was 3% better than the benchmark. The maximum drawdown was substantially lower and the Sharpe ratio was considerably higher. The cumulative return for the 2007-2009 time interval of -14.16% was only half the -28.46 suffered by the 60/40 benchmark for the same interval.

### **Tactical Funds, CTAs and Separately Managed Accounts**

Statistics for Jan 1998-Dec 2013	Tactical Mutual Funds	Diversified Commodity Trading Advisors	Macro Hedge Funds Mixed Methods	Macro Hedge Funds Fundamental Methods	Macro Hedge Funds Technical Methods	Tactical Separately Managed Accounts
Number of Funds or Managers	13	55	22	27	58	29
Average Annual Return	7.66	4.80	9.33	9.16	9.41	9.60
Annual Standard Deviation	11.80	22.58	13.37	14.44	16.81	9.92
Percent of Months > 0	62.64	54.65	59.20	61.46	56.36	63.15
Maximum Drawdown	35.87	37.30	27.61	27.90	26.91	18.27
Sharpe Ratio (2.56% Risk Free)	0.48	0.30	0.45	0.58	0.40	0.67
Correlation vs S&P500	0.79	-0.10	0.12	0.25	-0.05	0.60
Up Capture Ratio vs S&P500	67.87	20.73	32.50	48.12	23.56	55.58
Down Capture Ratio vs S&P500	59.22	-23.44	1.33	9.38	-19.37	38.32
Return Nov 2007 - Feb 2009	-34.72	28.87	-1.21	-9.35	23.91	-14.16
<b>Annual Returns</b>						
1998	11.40	7.79	11.62	1.10	16.97	12.04
1999	15.00	-2.91	6.00	32.37	7.99	28.93
2000	3.60	10.87	16.67	16.73	15.94	8.80
2001	-4.74	2.34	11.73	8.95	8.10	2.42
2002	-4.51	14.17	19.35	6.09	14.59	-1.28
2003	24.06	11.43	27.53	26.22	17.83	26.17
2004	13.27	1.10	6.29	11.33	4.20	10.28
2005	11.23	0.62	2.06	15.23	3.09	8.85
2006	16.19	5.28	8.91	11.07	5.80	12.52
2007	14.33	11.41	10.29	20.73	16.41	9.64
2008	-26.64	26.55	-0.37	-10.08	21.30	-7.76
2009	25.55	-3.61	13.87	32.62	4.30	19.18
2010	10.69	9.80	8.43	12.69	15.40	9.99
2011	-3.22	-5.72	1.59	-5.81	-1.83	-2.39
2012	12.35	-4.06	2.38	1.10	0.77	6.98
2013	16.78	-2.99	6.59	0.58	-4.24	14.64

Table 6

## Conclusions

The tactical funds and managers appear to have something positive to offer in terms of both increased returns and reduced risk. This is most notable regarding the performance offered by the tactical fund and manager categories during the November 2007-February 2009 time interval during which the S&P500 suffered a 50.79% loss. The Tactical Separately Managed Account category only suffered a 14.16% loss during this same interval. For the full time interval evaluated from January 1998 to December 2013, the Tactical Separately Managed Account category delivered a 9.60% average annual return versus a 5.89% return for the ETF SPY S&P500.

A summary of the relative performance all benchmarks, ETFs and tactical funds and managers is provided in Table 7. Acceptable values are highlighted for each statistic.

### Summary of Statistics for All Benchmarks, ETFs, and Tactical Funds and Managers

	Annual Average Return Jan 1998 to Dec 2013	Annual Standard Deviation Jan 1998 to Dec 2013	Maximum Drawdown From Jan 1998 to Dec 2013	Down Capture Ratio Versus S&P500 Jan 1998 to Dec 2013	Cumulative Return From Nov 2007 to Feb 2009
<b>Benchmarks</b>					
70% SPY 30% TLT	6.63	10.60	34.70	62.04	-34.70
60% SPY 40% TLT	6.76	9.33	28.46	48.05	-28.46
50% SPY 50% TLT	6.85	8.49	22.32	33.26	-21.75
<b>ETFs</b>					
ETF SPY - S&P 500	5.89	15.87	50.79	99.38	-50.79
ETF EFA - Foreign Stocks	5.44	17.60	56.56	97.25	-56.56
ETF EEM - Emerging Market Stocks	7.71	25.55	60.88	124.27	-60.88
ETF DBO - Crude Oil	16.34	28.46	65.78	21.31	-44.38
ETF GLD - Gold	9.21	17.38	34.65	-17.15	17.83
ETF IYR - Real Estate	6.30	21.96	70.65	92.27	-65.77
ETF IHF - Healthcare Providers	16.81	23.16	52.35	57.14	-49.27
ETF TLT - 20 Year Govt Bonds	6.41	12.43	21.80	-54.78	20.04
ETF LQD - High Qual Corp Bonds	8.48	7.81	15.11	-9.35	-4.47
U.S. Treasury Bills, 3-Month	2.52	0.64	0.01	-7.09	2.85
Equal Weighted Portfolio of ETFs	9.78	10.50	34.27	44.93	-33.63
<b>Tactical Funds and Managers</b>					
Tactical Mutual Funds	7.66	11.80	35.87	59.22	-34.72
Diversified Commodity Trading Advisors	4.80	22.58	37.30	-23.44	28.87
Macro Hedge Funds - Mixed Methods	9.33	13.37	27.61	1.33	-1.21
Macro Hedge Funds - Fundamental Methods	9.16	14.44	27.90	9.38	-9.35
Macro Hedge Funds - Technical Methods	9.41	16.81	26.91	-19.37	23.91
Tactical Separately Managed Accounts	9.60	9.92	18.27	38.32	-14.16
Highlighted if Value is	Greater than 9	Less Than 10	Less Than 20	Less Than 40	Greater Than -15

Table 7

### **Operational Features and Expenses of Tactical Investment Offerings**

The operational features and expenses associated with the tactical investment offerings are provided in Table 8 for those considering investing in these products. These are just the most common values for the items described. Many funds or managers may have significantly different values. For example, while many hedge funds accept minimum investments of \$500,000, some funds may require \$10 million or more.

### **Comparison of Features and Typical Expenses Associated with Tactical Funds and Managers**

Typical Investment Features	Tactical Mutual Funds	Diversified Commodity Trading Advisor Managed Acct.	Macro Hedge Funds Mixed Methods	Macro Hedge Funds Fundamental Methods	Macro Hedge Funds Technical Methods	Tactical Separately Managed Accounts
Typical Minimum Investment	\$1,000-\$3,000	\$500,000	\$500,000	\$500,000	\$500,000	\$100,000
Accredited Investors Only	No	Yes	Yes	Yes	Yes	No
Holdings Reporting Delay	3-6 Months	Daily	Never Given	Never Given	Never Given	Tic-by-Tic
Performance Observability	Daily	Daily	Monthly	Monthly	Monthly	Tic-by-Tic
Lockup Period	Daily	Daily	1-12 Months	1-12 Months	1-12 Months	None
Notification Period to Redeem	End of Day	End of Day	1-3 Month	1-3 Month	1-3 Month	None
Management Fee	1.5%	1% - 2%	1% - 2%	1% - 2%	1% - 2%	1% - 2%
Performance Fee	0%	10% - 20%	10% - 20%	10% - 20%	10% - 20%	0%

Table 8

### **Investments and Methods Employed by Tactical Separately Managed Account Managers**

Managers of Tactical Separately Managed Accounts may employ a wide range of investment types. The great majority of Tactical SMAs employ ETFs for investments. The main reasons for using ETFs include liquidity, the ability to purchase a basket of investments efficiently, tax efficiency and low commissions. Other reasons to employ ETFs include the wide range of investment types available as ETFs and the availability of leveraged and inverse ETFs. The very heart of a Tactical SMA program is the desire to change asset allocations quickly and on a cost effective basis. ETFs are ideally suited for making efficient allocation changes.

ETFs on equities and fixed income are not the only instruments employed. Many SMAs utilize currency, precious metals, base metals, agricultural commodities and energy ETFs as well. ETFs on multiple countries are frequently considered. This can add greatly to the number of investment possibilities evaluated by the SMA manager.

This is not to say that only ETFs are employed by Tactical SMAs. There may be good reasons to purchase individual equities when a specific stock is desired or there is no ETF to cover a specialized sector. Additionally, some Tactical SMAs employ mutual funds for investments.

A number of methods are employed for the determination of the allocations to be given to the tactical investment portfolio. These include the following methods:

- Technical trend-following techniques including point-and-figure and relative strength
- Determination of investment volatility
- Analysis of the bond yield curve
- Evaluation of fundamental market or macroeconomic factors
- Interpretation of business or market cycles
- Assessment of the Federal Reserve's monetary policy
- Tracking of investor sentiment regarding markets or the economy

Some SMA programs use completely computerized models. Others employ a decision committee to determine allocations. The most common approach employs a mathematical determination of recent returns looking at a universe of a large number of ETFs. The top ten or twelve ETFs are selected to be used in a portfolio for a following period such as a month. In a month's time, the process is repeated.

### **Disclosures**

The data for investments and investment categories reported come from sources believed to be reliable.

The accuracy of the past performance of these investments and investment categories cannot be verified or guaranteed.

No future performance of these investments or categories is suggested or should be inferred.

The performance numbers shown for the Tactical investment categories represents the performance of the average investment. Some managers or funds within each category will have performance far worse than the averages shown.

Certain calculations regarding the determination of net-of-fees performance for the Separately Managed Accounts are provided on a best-efforts basis. These determinations may not reflect the true performance of any actual account provided by the manager.

Certain calculations to extend the performance of ETFs back to 1998 based on regression analyses to underlying indices are also provided on a best-efforts basis.

The selection of the funds and managers to include in each tactical category is subject to considerable interpretation of the basic categorizations defined by the data providers. No guarantee is made concerning the suitability for inclusion of specific investments in each category

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