

Tactical Investing Basics: Absolute Return Strategies, Over a Full Market Cycle

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Disclaimers

- The studies for this presentation were created using CSI Data and Yahoo Finance for data sources and are believed to be accurate.
- Performance does not include reinvested dividends or trading costs.
- This presentation is for educational purposes only and not a solicitation to buy or sell securities.
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Laif E. Meidell

- Former U.S. Army aviation officer
- Joined the securities business in 1995
- President of American Wealth Management, Reno Nevada
- Chartered Market Technician (CMT)
- MBA, Finance and Accounting, Regis University, Denver Colorado
- Sub-Adviser to AdvisorShares Meidell Tactical Advantage ETF (NYSE: MATH)

What is Tactical Investing?

- **Strategic Asset Allocation:**
 - At the inception of the portfolio, a “base policy mix” is established based on expected returns. Because the value of assets can change given market conditions, the portfolio constantly needs to be re-adjusted to meet the policy. (Source: Investopedia.com)
- **Tactical Asset Allocation:**
 - Portfolio managers may create extra value by taking advantage of certain situations in the marketplace. It is a moderately active strategy since managers return to the portfolio’s original strategic asset mix when desired short-term profits are achieved.
 - **An active management portfolio strategy that rebalances the percentage of assets held in various categories in order to take advantage of market pricing anomalies or strong market sectors.** (Source: Investopedia.com)

Why a Quantitative Approach?

- Removes human emotion
- Quantifies risk and the implementation of risk management
- Assists in security selection
- Increases the statistical likelihood of repeatable outcomes by using a defined process

Typical Quantitative Tools

- Relative Strength – determines what to own
 - Ranks investments based on relative performance
 - Helps identify early outperformers within a group of investments
 - Calculated over a specific time period
- Moving Average – provides buy and sell signals
 - Simple and exponential are most common
 - Calculated over a specific time period

Four Step Quantitative Approach

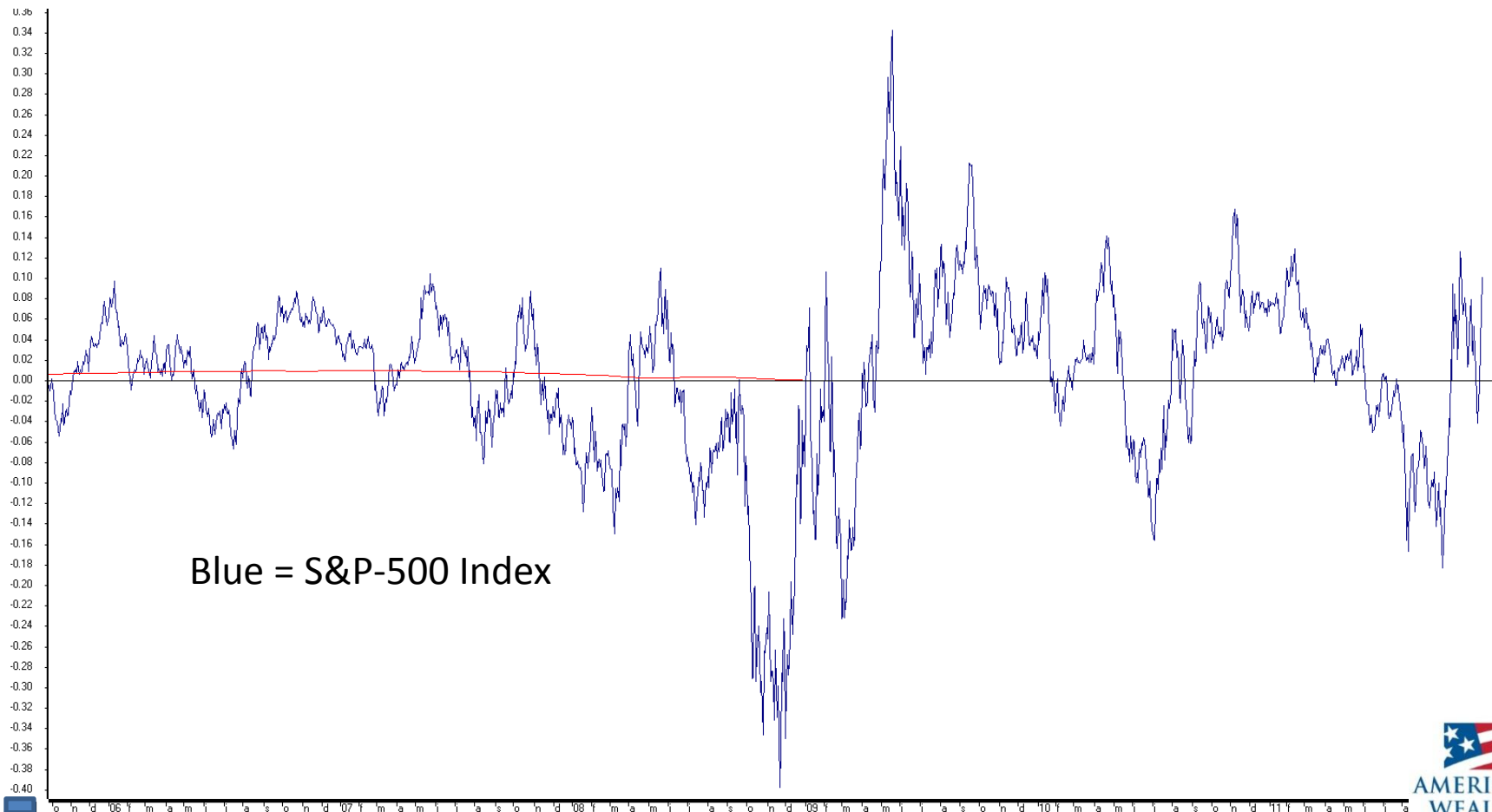
1. Smooth price to remove short term abnormalities using 200 day exponential moving average.
2. Calculate the 50 day rate of change of the smoothed price.
3. Rank investments from highest to lowest.
4. Invest in top performers.

Using *Slow Velocity* as an Investment Tool

- For this presentation, we will calculate the 200 day exponential moving average of price and then compute the 50 day rate of change of the exponential moving average daily
- Rate of Change: $(ROC) = (b-a)/a = \text{Velocity}$
- Since we are using a long term (200 day) exponential moving average, we describe this as calculating “Slow Velocity”

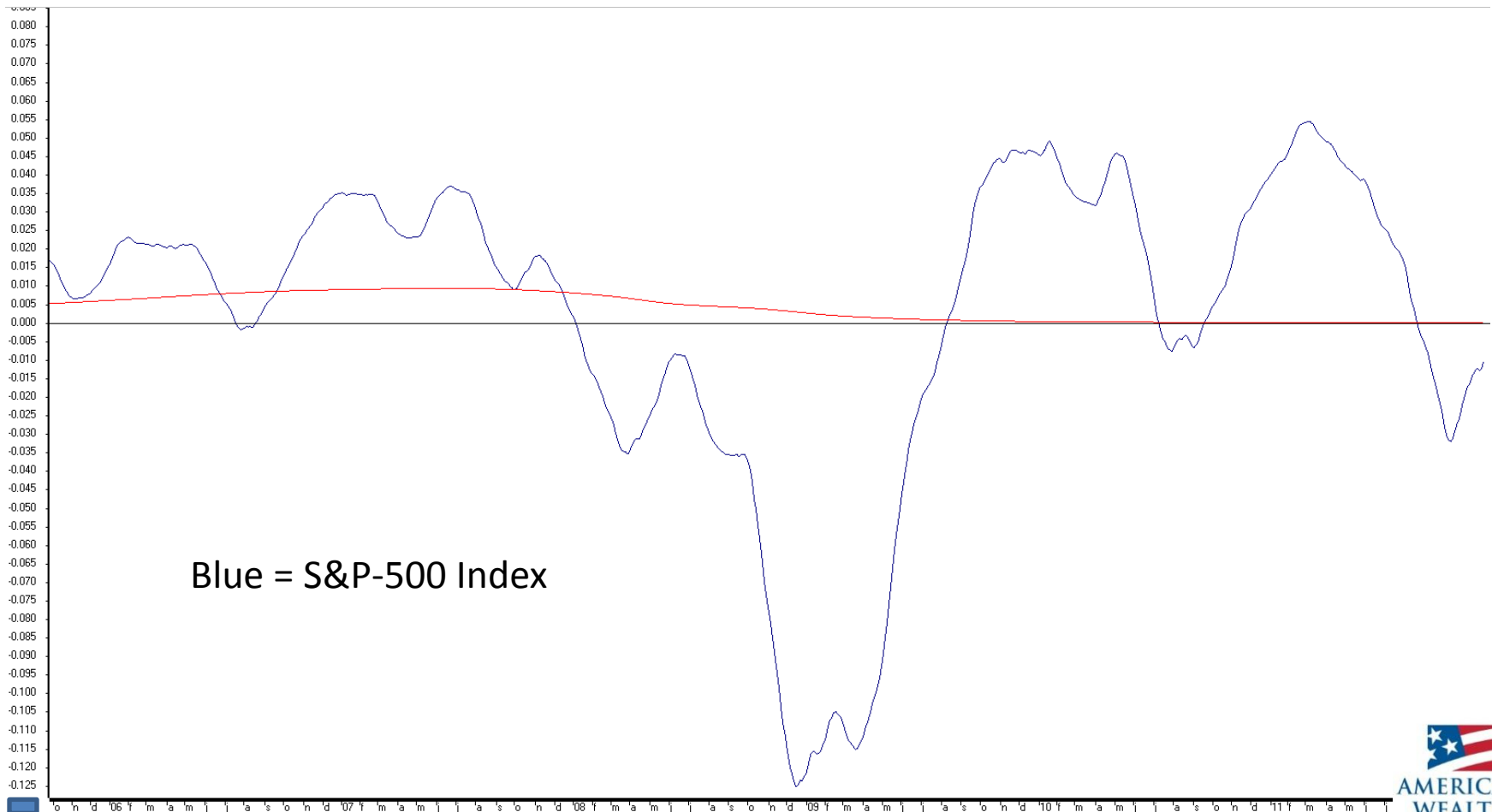
What does 50 Day ROC look like?

Chart illustrates the 50 day ROC of the S&P-500 Index



Smooth ROC Buy and Sell Signals

Chart illustrates the 50 day ROC of the 200 exponential moving average



Testing *Slow Velocity* as a Quantitative Tool

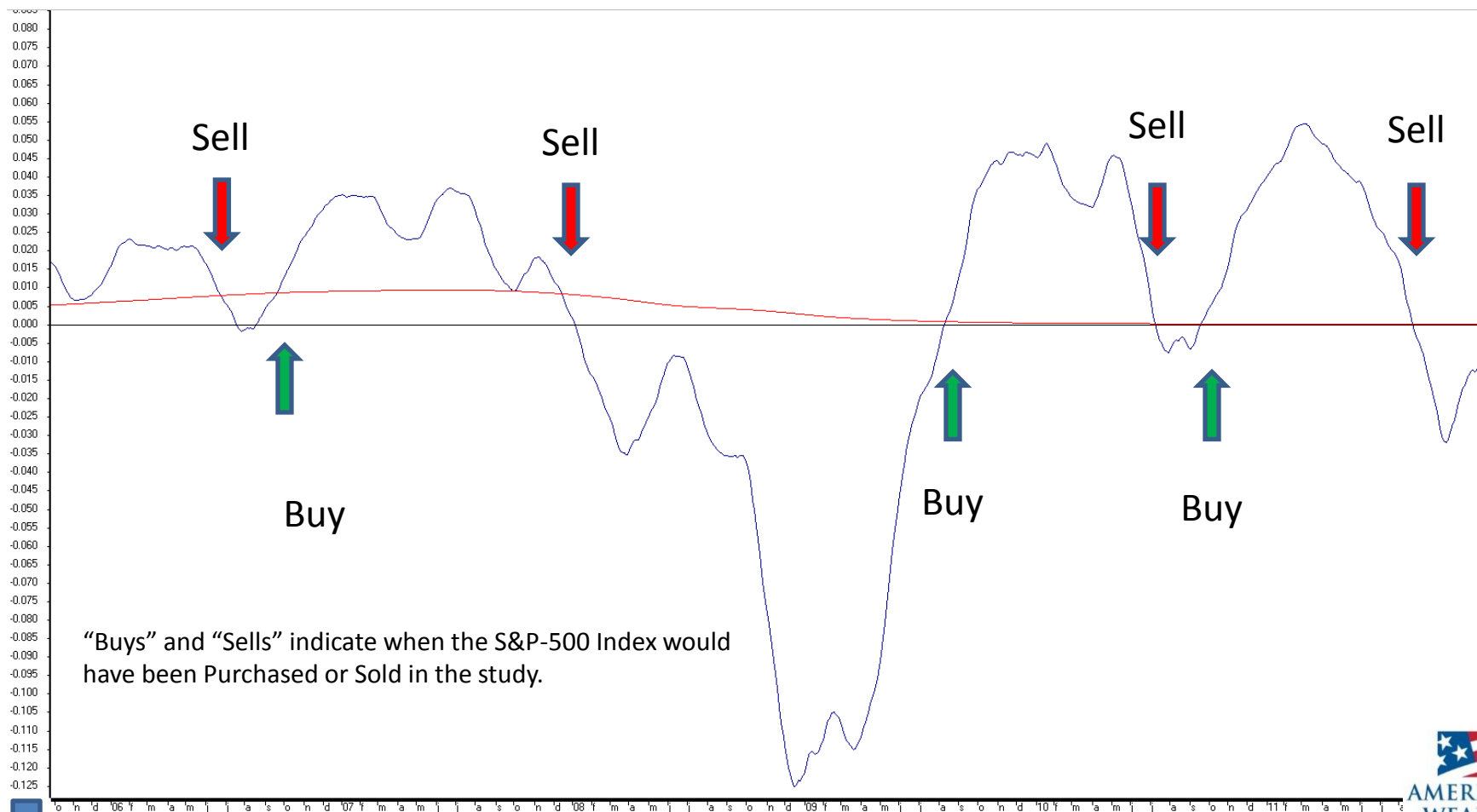
- Study #1 – Risk Management
- Study #2 – Security Selection
- Study #3 – Tactical Implementation

Study #1: Two Element Rotation

- Method: Invest in either the S&P-500 Index or money market
- Rotation List
 - S&P-500 Index
 - Compounded rate of return of the 13 week T-Bill rate (our surrogate for money market)

Study #1:

S&P 500 Index / Money Market Rotation



“Buys” and “Sells” indicate when the S&P-500 Index would have been Purchased or Sold in the study.

Study #1: Performance Table

Year	S&P500 / T-Bills Return %	Max Daily Drawdown %	S&P 500 Index Return %	Max Daily Drawdown %	Number of Trades
1961	19.15	6.23	23.13	6.23	1
1962	-5.29	8.28	-11.81	26.44	1
1963	16.41	6.54	18.89	6.54	1
1964	11.67	3.55	12.97	3.55	0
1965	5.37	9.60	9.06	9.60	2
1966	0.84	7.13	-13.09	22.18	1
1967	11.90	6.61	20.09	6.61	1
1968	2.58	7.91	7.66	-11.36	2
1969	-0.29	5.78	-11.36	15.98	1
1970	7.09	1.21	0.10	25.86	1
1971	2.49	11.43	10.79	13.94	1
1972	15.12	5.14	15.63	5.14	1
1973	-1.22	9.48	-17.37	23.35	1
1974	7.74	0.00	-29.72	37.60	0
1975	2.81	14.99	31.55	14.14	3
1976	13.17	8.37	19.15	8.37	1
1977	0.78	4.73	-11.50	15.22	2
1978	-3.52	13.55	1.06	13.55	2
1979	-0.92	10.25	12.31	10.25	3
1980	5.92	17.07	25.77	17.07	3
1981	8.26	8.36	-9.73	18.35	1
1982	10.17	7.05	14.76	16.56	1
1983	18.58	6.91	17.27	6.91	0
1984	10.86	3.00	1.40	12.68	5
1985	6.54	7.66	26.33	7.66	3
1986	7.59	9.42	14.62	9.42	0
1987	1.90	33.24	2.03	33.51	1
1988	6.62	0.00	12.40	7.64	0
1989	23.08	7.38	27.25	7.56	1

Study #1: Performance Table

Year	S&P500 / T-Bills Return %	Max Daily Drawdown %	S&P 500 Index Return %	Max Daily Drawdown %	Number of Trades
1990	-15.13	16.97	-6.56	19.92	2
1991	14.58	5.60	26.31	5.60	1
1992	4.34	6.24	4.46	6.24	0
1993	6.90	4.99	7.06	4.99	0
1994	-2.70	8.94	-1.54	8.94	5
1995	28.22	2.53	34.11	2.53	1
1996	18.73	7.64	20.26	7.64	0
1997	32.30	10.80	31.01	10.80	0
1998	11.41	19.34	26.67	19.34	2
1999	18.49	12.08	19.53	12.08	0
2000	-7.45	12.94	-10.14	17.20	1
2001	3.31	0.00	-13.04	29.70	0
2002	1.58	0.00	-23.37	33.75	0
2003	12.48	4.57	26.38	14.05	1
2004	8.44	8.16	8.99	8.16	0
2005	5.55	7.17	3.00	7.17	0
2006	7.45	7.70	13.62	7.70	2
2007	3.76	10.09	3.53	10.09	1
2008	1.32	0.00	-38.49	48.01	0
2009	12.77	5.62	23.45	27.62	1
Gross Return %	2,959.37		1,818.51		
Ave. Ann. ROR %	7.39		6.35		

S&P 500/T-Bill Study

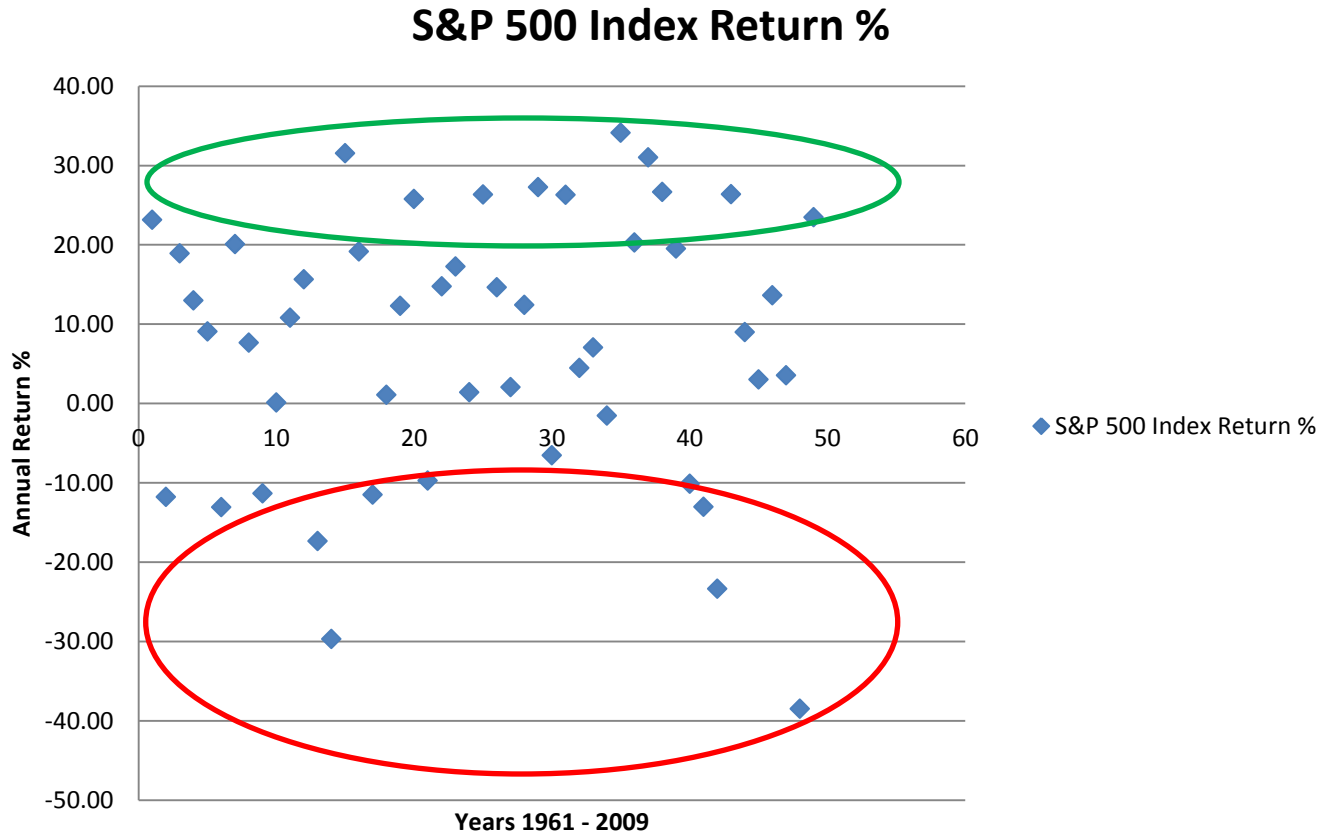
Beta: .40

Alpha: 4.63

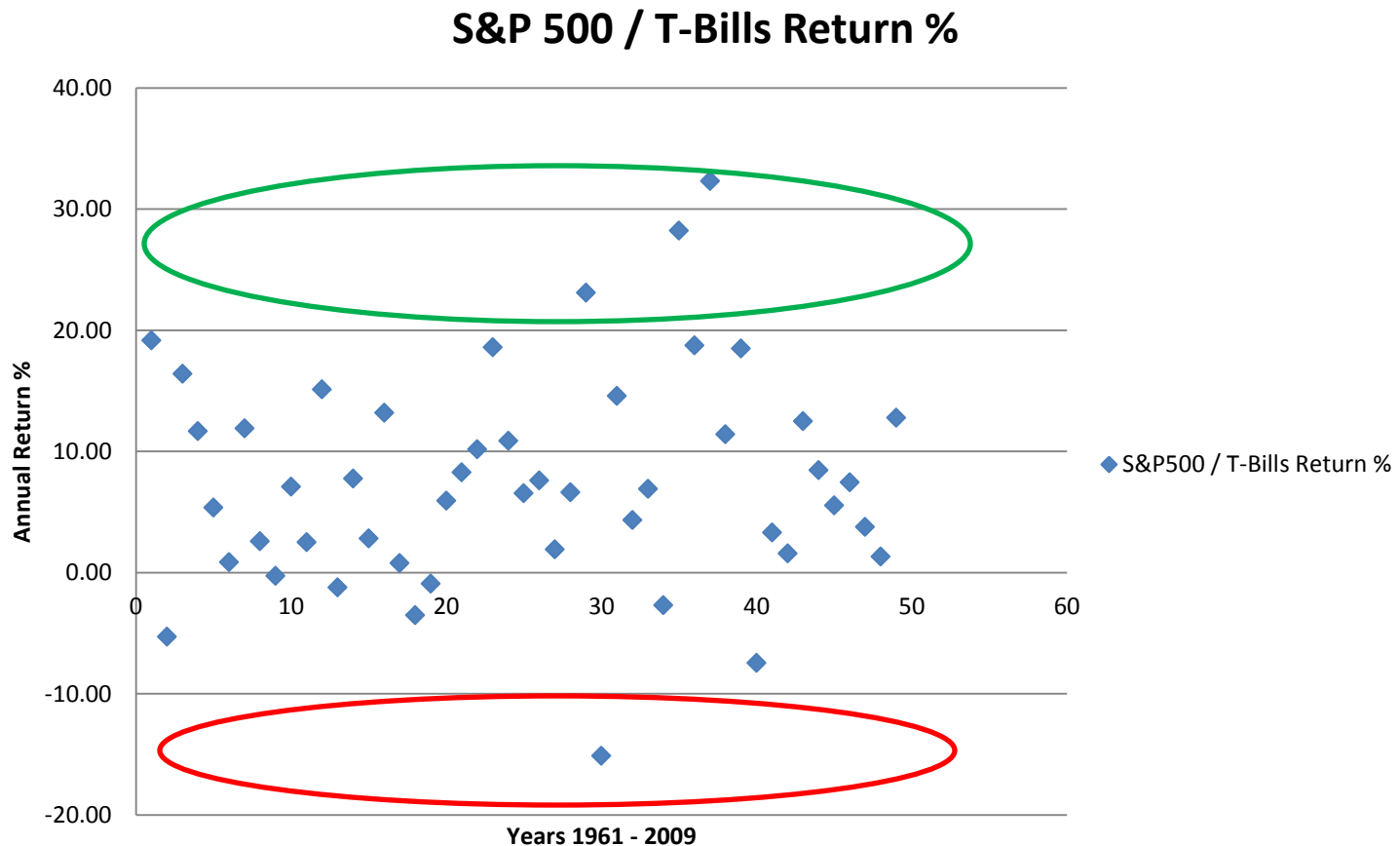
Ave. Monthly ROR%: .62

St. Dev. Monthly ROR%: 2.78%

Study #1: S&P 500 Index Performance



Study #1: Two Element Rotation Performance

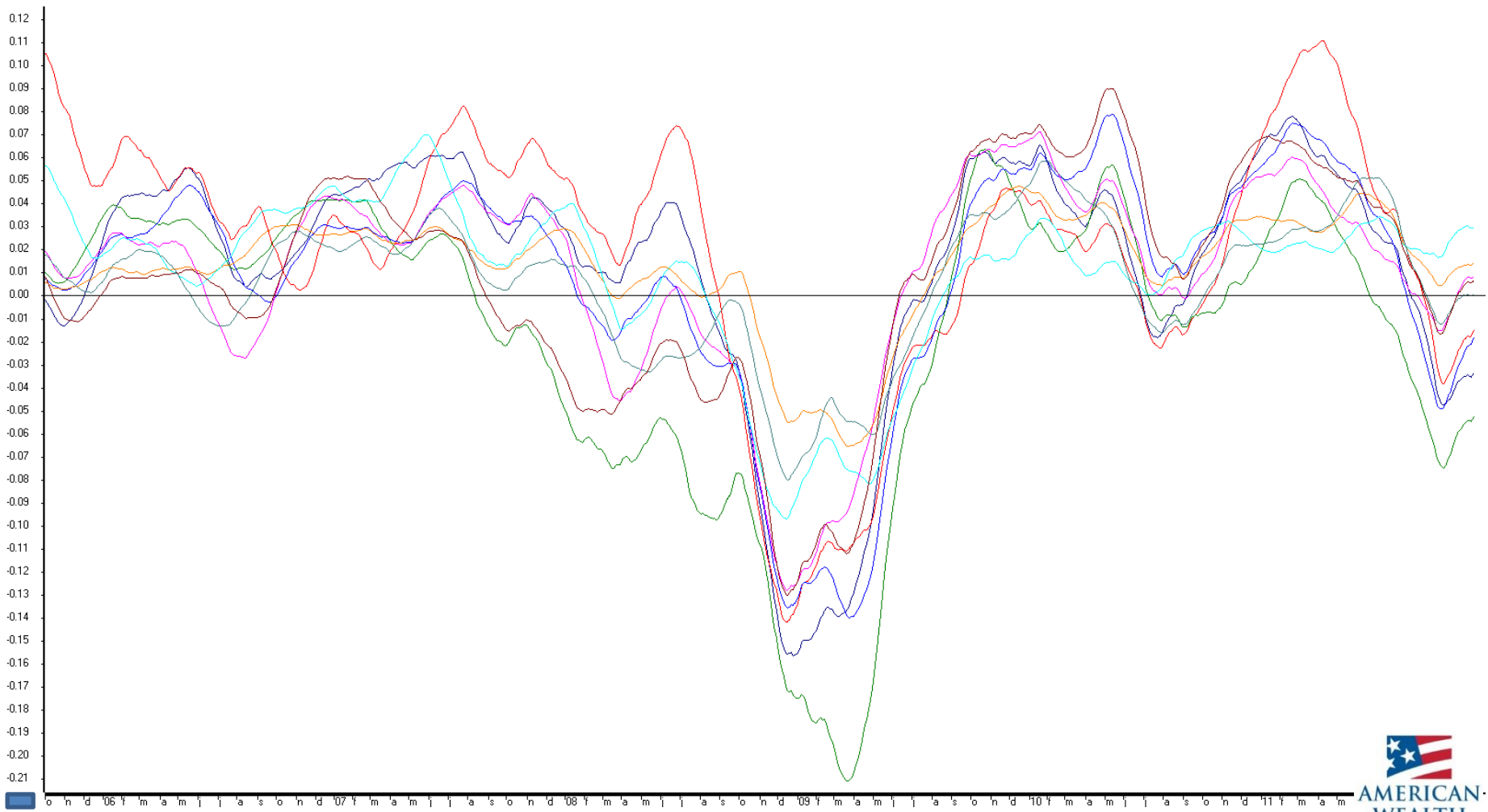


Study #2: Top Three Sectors

- Method: Own the top three ETF Sectors at all times.
- Rotation List:
 - XLB – Materials Select Sector SPDR
 - XLE – Energy Select Sector SPDR
 - XLF – Financial Select Sector SPDR
 - XLI – Industrial Select Sector SPDR
 - XLK – Technology Select Sector SPDR
 - XLP – Consumer Staples Select Sector SPDR
 - XLU – Utilities Select Sector SPDR
 - XLV – Health Care Select Sector SPDR
 - XLY – Consumer Discretionary Select Sector SPDR

Study #2: Top Three Sectors

50 Day ROC of 200 Day Exponential Moving Average



Study #2: Top Three ETF Sectors

Year	S&P 500 Index Return %	Max Drawdown %	Top 3 Sectors Return %	Max Drawdown %	Number of Trades
2000	-10.14	17.20	3.3	12.31	6
2001	-13.04	29.70	-16.71	27.39	8
2002	-23.37	33.75	-13.87	26.46	6
2003	26.38	14.05	20.33	13.39	8
2004	8.99	8.16	11.08	8.79	10
2005	3.00	7.17	20.18	11.16	7
2006	13.62	7.70	7.08	13.5	7
2007	3.53	10.09	15.41	11.96	8
2008	-38.49	48.01	-31.47	42.29	9
2009	23.45	27.62	12.21	23.02	7
2010	12.78	15.99	11.82	18.69	11
Gross ROR %	-14.42		26.49		
Comp. Ann. ROR %	-1.41		2.16		

Top 3 ETF Sectors Study

Beta: .75

Alpha: 2.06

Ave. Monthly ROR%: .34

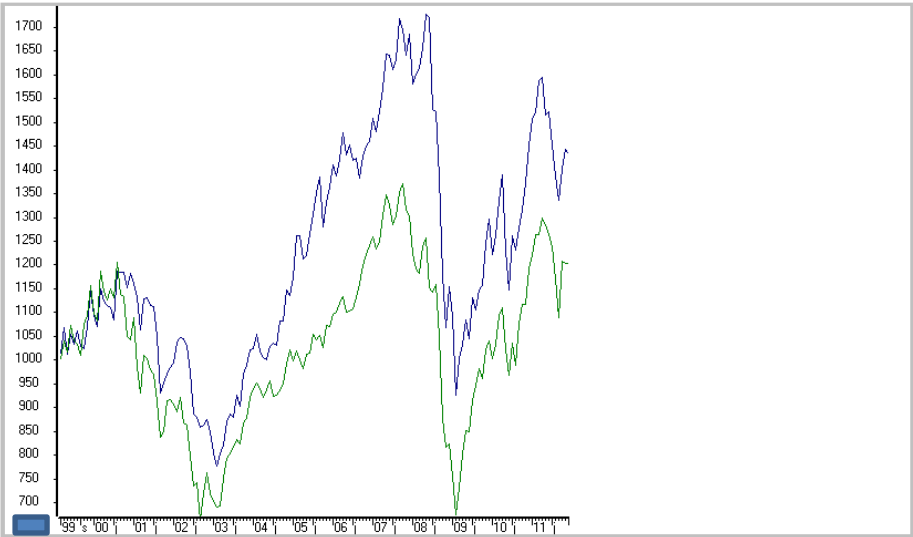
St. Dev. Monthly ROR%: 4.59

Study #2: Hypothetical Performance Graph

Tactical Asset Allocation Top Three Equity Sectors

19990308 - 20111201

Assets indexed at 1000 (Monthly close)



Top 3 Funds SPY SPY

Monthly Summary Quarterly Summary Yearly Summary

Monthly Performance (%)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
January	-4.42	-1.78	0.79	-5.12	0.15	3.41	3.37	3.24	-6.25	5.48	5.8	4.07
February	-2.18	-2.72	4.44	-3.42	3	7.55	-1.54	-1.81	1.35	-15.24	3.34	0.72
March	7.4	-5.83	1.03	3.3	-3.17	-0.1	2.53	2.82	0.72	8.4	5.84	4.56
April	-2.2	6.08	-0.35	2.17	-1.35	-3.82	3.82	3.22	2.54	2.93	4.09	0.37
May	-0.95	0.1	-1.46	6.08	-0.64	0.67	-3.14	4.67	4.49	5.12	-11.62	-4.97
June	-0.45	-1.32	-5.33	1.69	2.93	3.74	1.54	-0.17	-0.41	-3.76	-6.58	0.5
July	-2.31	-0.37	-8.91	-0.75	0.64	3.21	-2.37	-1.89	-11.24	8.37	9.94	-4.62
August	9.54	-5.61	-0.82	5.46	-0.47	3.52	0.46	1.38	-0.43	-2.36	-2.48	-4.46
September	0.27	-11.18	-2.38	-2.51	4.86	2.4	-2.94	5.27	9	3.86	3.87	-3.76
October	0.02	2.07	0.6	7.36	0.01	-7.64	3.33	-1.43	-14.75	0.73	2.97	4.92
November	-2.7	2.14	1.23	1.94	6.02	4.03	1.42	-3.09	-9.56	7.68	4.4	3.01
December	2.71	1.44	-2.98	3.28	-1.04	2.46	0.72	2.64	8.22	4.1	5.47	-0.59
Yrly / ytd Return (%)	3.3	-16.71	-13.87	20.33	11.08	20.18	7.08	15.41	31.47	12.21	11.82	-1.02
Max Drawdown (%)	12.31	27.39	26.46	13.39	8.79	11.16	13.5	11.96	42.29	23.02	18.69	20.91
Profitable Months #	4	5	5	8	7	9	8	7	5	8	8	7
Ave. Monthly Return	0.35	-1.42	-1.18	1.62	0.91	1.62	0.6	1.24	-2.86	1.2	1.12	-0.02
Monthly Return Stdev (%)	4.21	4.54	3.46	3.9	2.72	3.99	2.54	2.82	7.1	6.95	6.3	3.72

Overall Performance	
Comp. Ann. ROR (%)	2.88
Ave 12Mo ROR (%)	4.54
Ave. Monthly ROR (%)	0.34
Stdev Monthly ROR (%)	4.59
Max Drawdown (%)	49.64
Profitable Months (%)	56

Overall Performance	
Reward/risk	0.06
Sharpe Ratio	0.1
Sortino Ratio	0.47
Alpha (Ann. %)	2.06
Beta	0.75
Information Ratio	0.13
T-Statistic	0.45

Study #3: Stock and Bond Mutual Fund Rotation

- Method: Own the top 5 funds in the list.
- The eleven Vanguard funds chosen were for their length of data and style consistency.
- The primary purpose of the bond funds are for risk management and creating a sell signal for the stock funds.

Study #3: Bond and Stock Mutual Fund Rotation

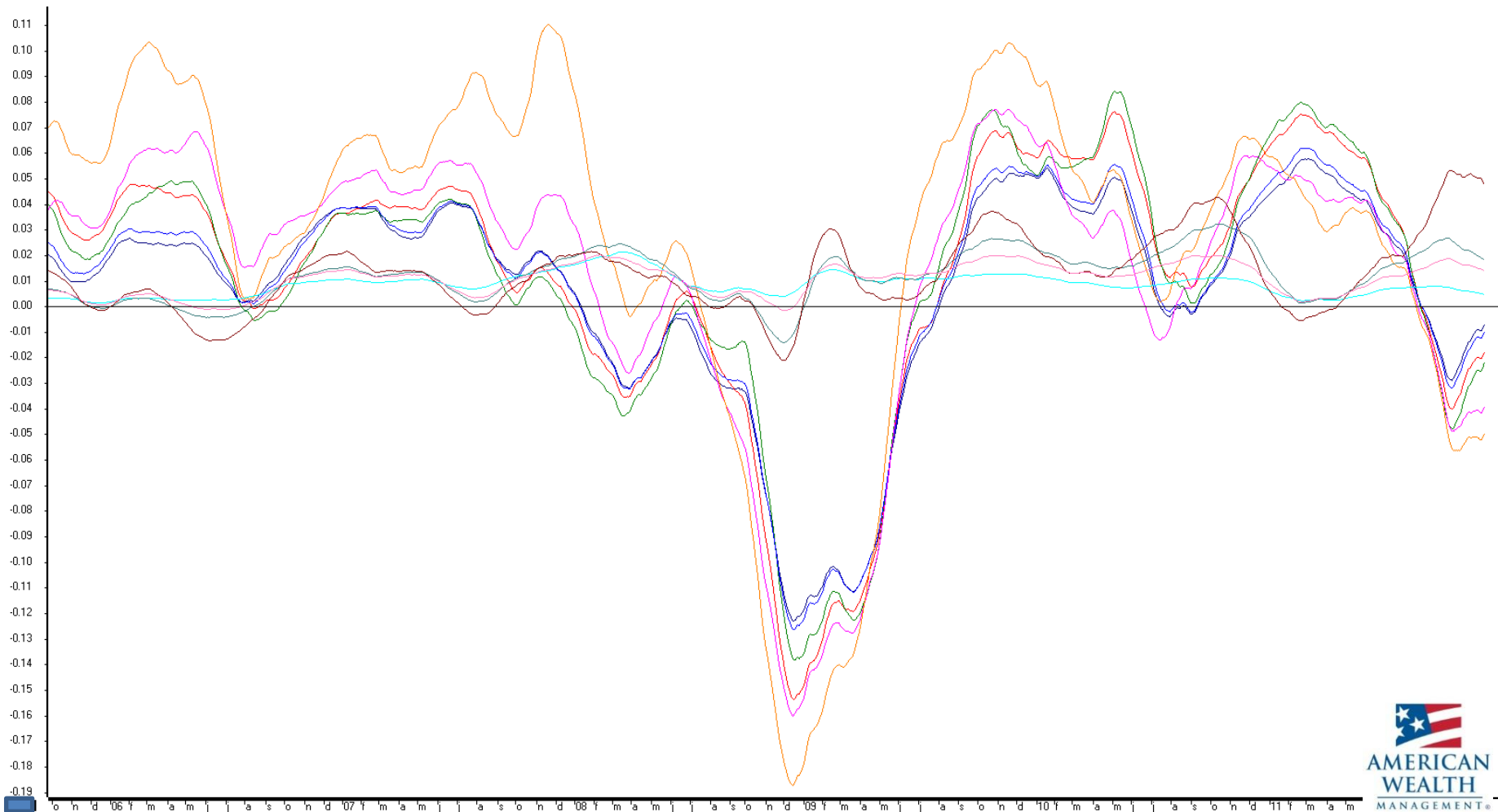
Fund List

Equity Funds	
Vanguard 500 Index	VFINX
Vanguard Mid-Cap Index	VIMSX
Vanguard Small-Cap Index	NAESX
Vanguard Total Stock Market	VTSMX
Vanguard Intl Growth	VWIGX
Vanguard Emerg Mkt Index	VEIEX
Fixed Income Funds	
Vanguard Short-Bond Index	VBISX
Vanguard Interm-Term Bond Index	VBIIS
Vanguard Long-Term Bond Index	VBLTX
Vanguard Total Bond Market Index	VBMFX
Vanguard GNMA	VFIIX

These are the funds that were used in the back test due to the need for historical data.

Study #3: Stock and Bond Mutual Fund Rotation

50 Day ROC of 200 Day Exponential Moving Average



Study #3: Bond and Stock Mutual Fund Rotation

Year	S&P 500 Index Return %	Max Drawdown %	Tactical Portfolio Return %	Max Drawdown %	Number of Trades
1999	19.53	12.08	22.89	10.88	11
2000	-10.14	17.20	-0.21	14.89	9
2001	-13.04	29.70	7.02	4.17	0
2002	-23.37	33.75	2.93	7.87	12
2003	26.38	14.05	29.00	3.91	6
2004	8.99	8.16	12.02	12.04	11
2005	3.00	7.17	16.63	8.47	4
2006	13.62	7.70	15.97	16.20	11
2007	3.53	10.09	15.96	13.23	11
2008	-38.49	48.01	-6.14	13.56	8
2009	23.45	27.62	23.66	7.66	6
2010	12.78	15.99	9.02	14.94	10
Gross ROR %	2.29		285.38		
Comp. Ann. ROR %	0.19		11.99		

Year	60% Stock/ 40% Bond
1999	13.12
2000	-0.46
2001	-3.67
2002	-9.52
2003	20.02
2004	8.50
2005	4.54
2006	11.27
2007	5.76
2008	-20.71
2009	19.27
2010	12.32
Gross ROR %	68.21
Comp. Ann. ROR %	3.36

Study #3

Beta: .32

Alpha: 9.63

Ave. Monthly ROR%: .88

St. Dev. Monthly ROR%: 3.26

60% Stock / 40% Bond Composition:

60% - Russell 3000 Index

35% - BC Int. Aggregate Bond

5% - T-Bills

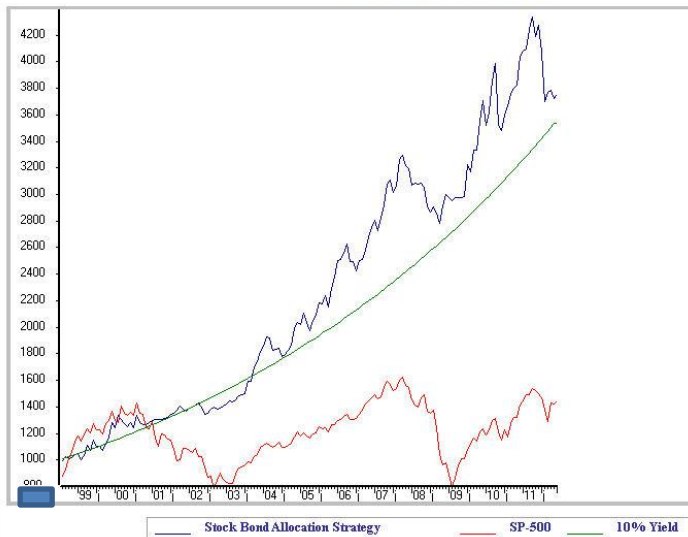


Study #3: Hypothetical Performance Graph

Top 5 Vanguard Funds Hypothetical Tactical Allocation Strategy

19980807 - 20111207

Assets indexed at 1000 (Monthly close)



Monthly Summary
 Quarterly Summary
 Yearly Summary

Monthly Performance (%)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
January	-2.8	1.25	1.36	0.71	2.13	-0.83	5.38	1.79	-3.92	-0.73	-5.08	1.05
February	7.49	0.78	0.85	1.62	3.75	4.37	0.35	-2.71	0.68	-0.77	2.85	0.29
March	-2.57	0.12	0.89	-0.26	-0.26	-3.48	1.96	3.39	-0.41	0.93	6.53	3.65
April	-2.12	-0.3	1.27	1.09	-5.08	-2.85	2.68	3.67	0.23	-0.17	3.5	2.27
May	-2.16	0.76	-2.36	2.2	0.47	3.79	-5.06	5.31	-0.95	0.11	-11.54	-3.46
June	2.52	0.6	-3.59	0.42	0.46	2.06	0.07	1.11	-4.79	0.29	-1.27	1.95
July	2.65	2.01	0.34	0.29	-3.12	4.28	-2.91	-3.14	-1.27	7.88	3.25	-4.61
August	7.02	0.47	2.47	6.28	0.7	-0.36	3.06	1.65	1.18	-1.68	1.95	-9.18
September	-4.17	1.84	0.98	0.21	1.93	2.8	0.41	6.59	-1.65	5.24	2.38	1.91
October	-0.79	2.3	-0.75	6.74	1.79	-3.63	2.89	0.83	-2.58	0	1.21	0.31
November	-0.14	-1.74	0.05	2.45	6.74	6.26	3.74	-2.27	4.84	6.49	0.58	-1.57
December	0.94	-1.2	1.55	4.28	2.41	3.74	2.81	-0.79	2.74	4.39	5.7	0.89
Yrly / ytd Return (%)	-0.21	7.02	2.93	29	12.02	16.63	15.97	15.96	-6.14	23.66	9.02	-7.01
Max Drawdown (%)	14.89	4.17	7.87	3.91	12.04	8.47	16.2	13.23	13.56	7.66	14.94	17.55
Profitable Months #	4	9	9	11	9	7	10	8	5	7	9	8
Ave. Monthly Return	0.05	0.57	0.25	2.17	0.99	1.35	1.28	1.29	-0.49	1.83	0.84	-0.54
Monthly Return Stdev	3.83	1.23	1.73	2.38	3.04	3.43	2.93	3.13	2.7	3.24	4.95	3.62

Overall Performance	
Comp. Ann. ROR (%)	10.49
Ave 12Mo ROR (%)	11.74
Ave. Monthly ROR (%)	0.88
Stdev Monthly ROR (%)	3.26
Max Drawdown (%)	18.63
Profitable Months (%)	66

Overall Performance	
Reward/risk	0.56
Sharpe Ratio	0.81
Sortino Ratio	4.69
Alpha (Ann. %)	9.62
Beta	0.32
Information Ratio	0.51
T-Statistic	1.77

Conclusion

- A quantitative metric like we have used in this presentation may provide the following solutions:
 - Risk Management by minimizing portfolio draw down.
 - Security Selection by providing additional returns over full market cycles.
 - Tactical Solution by ranking a list of bond (conservative) and stock (aggressive) funds together we combine risk management and security selection into one process.
 - Removal of human emotion and an increase in the likelihood of repeatable outcomes.

Vocabulary

Beta:

1. A measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns.

Alpha:

1. A measure of performance on a risk-adjusted basis. Alpha takes the volatility (price risk) of a mutual fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark index is a fund's alpha.
2. The abnormal rate of return on a security or portfolio in excess of what would be predicted by an equilibrium model like the capital asset pricing model (CAPM).

Exponential Moving Average:

1. A type of moving average that is similar to a simple moving average, except that more weight is given to the latest data. The exponential moving average is also known as “exponentially weighted moving average”.

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