

"Hedge That Puppy Capital"



Alexander Carley
Joseph Guglielmo
Stephanie LaBrie
Alex DeLuis

2. Investment Objectives and Adaptability:

Preface on how the hedge fund plans to adapt to current and future market conditions:

The objective of The Fund is to achieve better returns than the market through investing in stock market securities using hedges that capture both upside and downside profit potential. These positions are taken with instruments like options and futures to mitigate systematic risk. The valuation that each security will be given will be based on intrinsic value and market information. The valuations of each security will then give us a direction in terms of long and short hedges for each security to mitigate risk and have a greater profit potential of upticks and downticks.

Historical Views:

According to the graph given, most of the historical performance trends of hedge funds from 2003-2008 beat the S&P 500 returns. From October 2007-2008, the S&P was beaten by all strategies with the exception of emerging markets in Russia, and Asia (excluding Japan). This graph depicts that in the long and short run, hedge fund strategies tend to beat the S&P 500, mainly because they hedge the risk of downside potential. The macro-systematic approach to investing lets The Fund take advantage in stock volatility jumps.

Expected Returns:

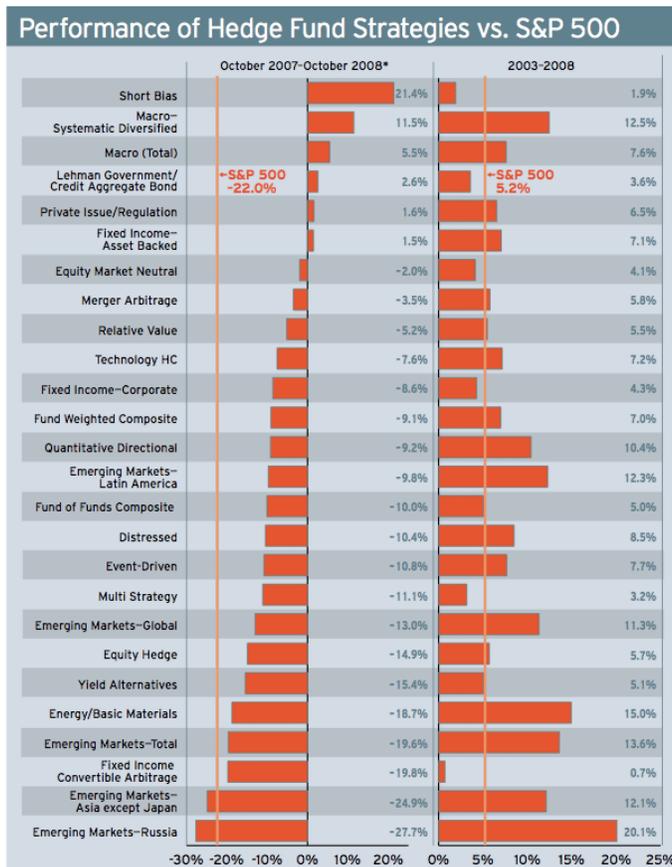
We expect that The Fund should outperform the unhedged portfolios. The short and long hedges on The Fund should help mitigate risk and overall should produce better returns than the S&P 500 and unhedged portfolios.

3. Principal Investment Strategies

The principal investment strategy of our Hedge Fund is to beat the annual S&P 500 return through long equity value driven analysis in primarily large cap companies as well as market ETFs. Our team of analyst work diligently to thoroughly know their respected sector. The fund's assets are allocated amongst the analyst based on sector.

- **Target broad-based market index**

We will be comparing our fund to the S&P 500. We have chosen the S&P 500 as our broad-based market index because it is the best representation of the overall market. Comparing our fund's returns with those of the S&P allow us to put our returns on a relative basis, one which our customers can easily understand.



4. Principal Risk factors

Relationship between HF size and risk:

- Hedge fund size is dictated by Assets Under Management (AUM).
- Larger hedge funds are riskier than smaller ones due to the added pressure of maintaining past performance, managers have incentives to take on additional risk in order to generate a return greater than a minimum value.
- Hedge funds cannot generate capital like investment banks and when concerning news hits the market investors in turn become concerned and pull their funds leading to lower AUM and an inability to properly manage the fund
- Due to the difficulty in generating capital, large hedge funds sometimes must liquidate large positions, this causes a dramatic price decrease and as a result a loss for the funds investors.

Market risk (beta and adjusted-beta analysis):

- Market risk is a result of movements in the market.
- Beta, VaR, and Vasicek beta are ways to measure market risk.
- Beta makes assertions regarding the correlation of the security or portfolio in question to the overall market. A beta of 1.0 means that the security is perfectly correlated with the market and its price will move with the market.
- Vasicek beta is an adjusted beta that is considered a better measure of systematic risk.
- Hedge funds are structured as partnerships. Managers are considered partners.
- Treated as a corporation for tax purposes. No double-taxation.

- More and more funds being created as off-shore funds to protect investors from taxation.

Tax Management Issues:

Hedge funds are taxed as partnerships. All profits and losses pass through the investors and thus there is no double taxation which is the case of corporations. In other words, the hedge fund files its taxes and the investors pay the taxes in the end. Because hedge fund managers buy and sell so frequently, investors incur high capital gains which are taxed at the ordinary income tax rate.

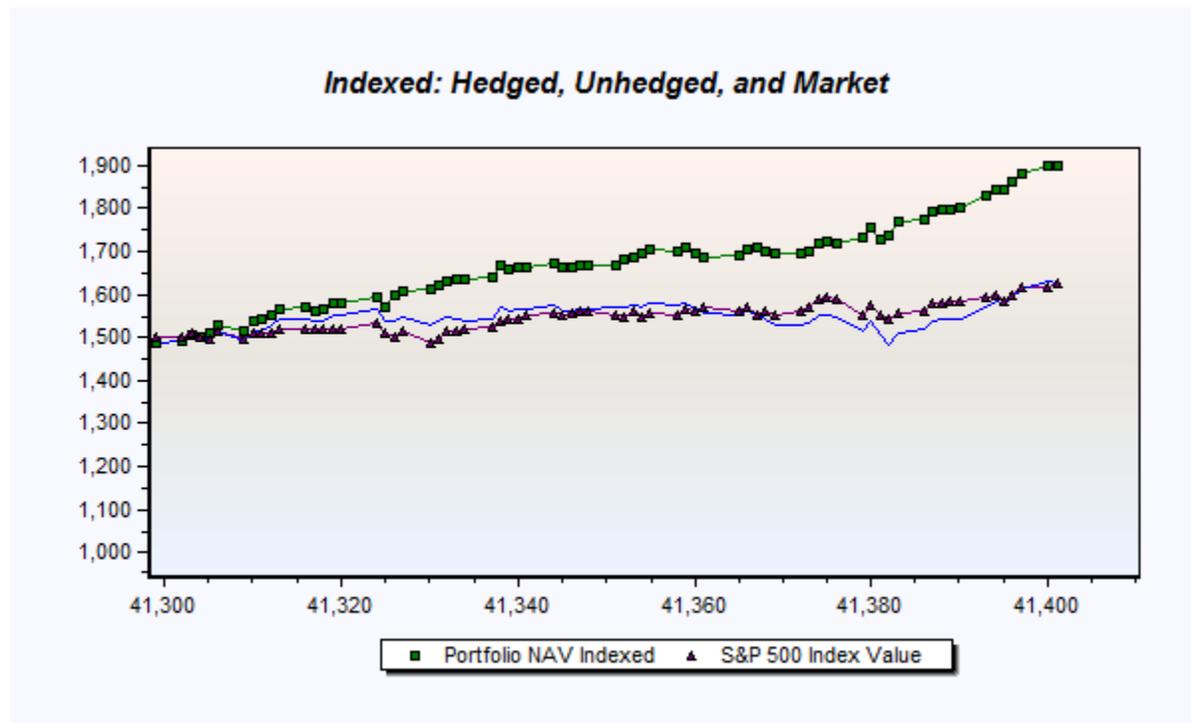
Capital Risk - Capital Risk (small-, mid-, large-cap risk):

Capital risk is determined by the strategy of the hedge fund. If the fund holds many small-cap stocks, capital risk will be higher than a fund comprised of mostly large-cap stocks. Because small-cap companies are usually in the early stages of development they tend to have higher potential for growth, and thus carry more risk. Mid-cap companies are not as susceptible to market swings as small-cap companies but do not have the same growth opportunities. Mid-caps are attractive because of their relatively low risk and moderate growth potential. Large-cap companies are established and can weather significant market movements. They have low risk compared to companies with lesser capital. Hedge funds primarily focused on small-cap companies have the possibility of generating high returns if market predictions are accurate.

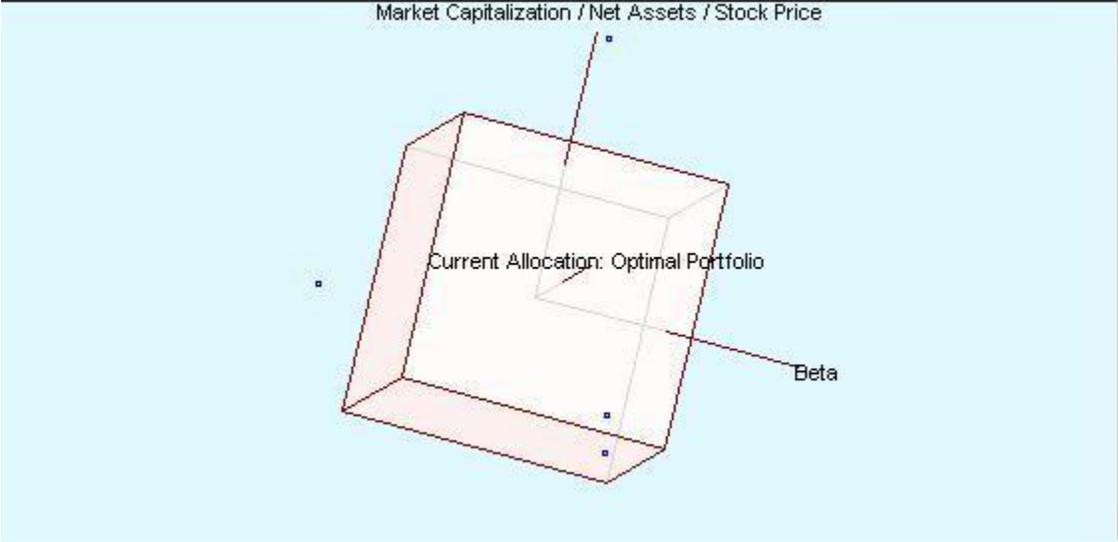
Foreign Investment and Foreign Exchange Risk:

Foreign investment risk and foreign exchange risk are relevant when a hedge fund invests in foreign companies. Managers can protect the fund from foreign exchange risk by implementing futures hedges, forward contracts, and appropriate option strategies.

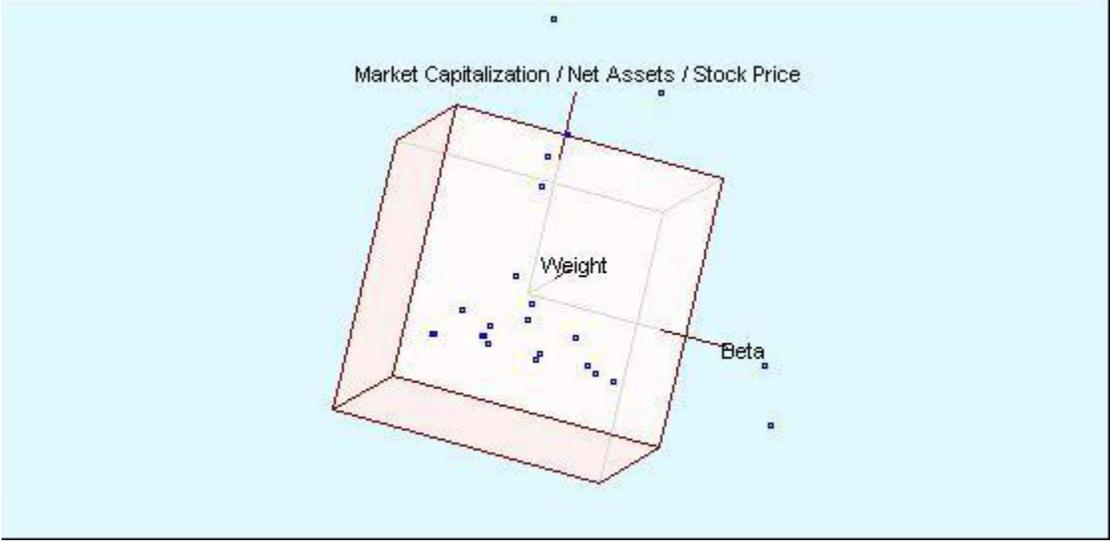
5. Create a quantitative view and Efficient Frontier to select an ‘Optimal’ benchmark



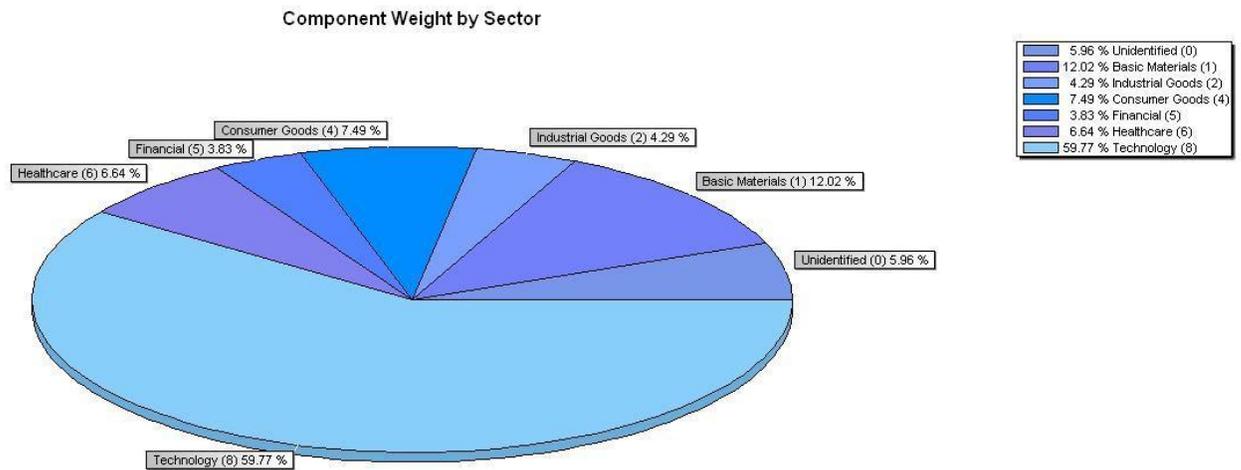
Optimal Portfolio Beta Depth versus Market Capitalization



Examine Beta Depth versus Market Capitalization



6. Investment Sector's



II. Convert Equity Fund to Hedge Fund

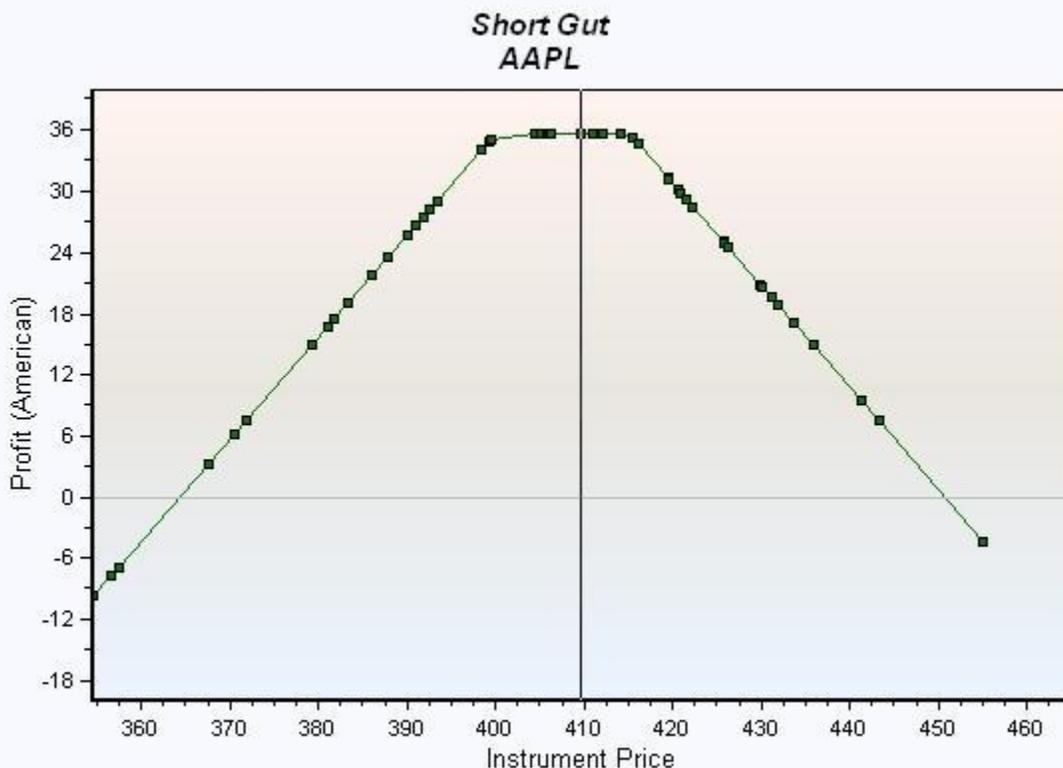
1. Hedge Fund Style:

Our fund strategy is based off of a Long/Short equity hedge fund model. Typically, Long/Short Equity market neutral funds typically take long and short positions in equities while seeking to reduce exposure to the systematic risk of the market. Our fund is comprised of a well diversified arrangement of equities. We do not particularly focus on setting strict guidelines for the number of securities we must hold in each sector. Although, our fund is comprised of:

Sector	Sector Weight of Portfolio
Unidentified	5.96%
Basic Marketetials	12.02%
Industrial Goods	4.29%
Consumer Goods	7.49%
Financial	3.83%
Healthcare	6.64%
Technology	59.77%

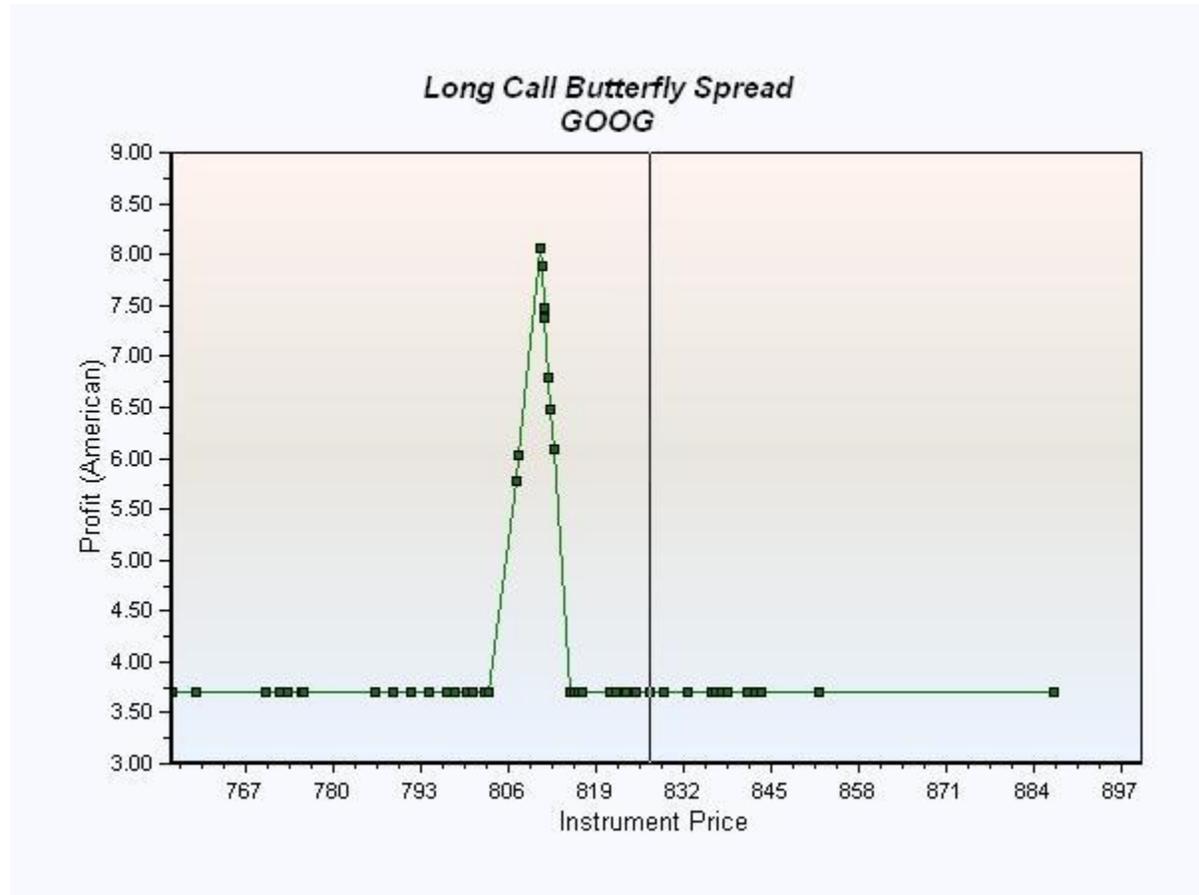
For securities undervalued (higher intrinsic value compared to market value) we take long positions in these companies. As long as our analyst team firmly believes that given the current market conditions and for whatever reason the security is undervalued, that there is a high probability of the security becoming desirable again in the market. For securities overvalued compared to their intrinsic value, we take short positions in these securities. We will take short position in securities that are countercyclical to our long positions to hedge our portfolios risk. We also take and hold growth securities. Although, we do not hold these for an extended period of time. To additionally mitigate the risk of our portfolio, we micro-hedge individual securities by implementing options strategies when appropriate. We also implement macro-hedge derivative instruments when appropriate to reduce the portfolio's overall risk. Ultimately, our goal is be profitable no matter what direction the market moves. We are profitable in bull markets as well as bear markets.

2. Micro-Hedge Portfolio Components:

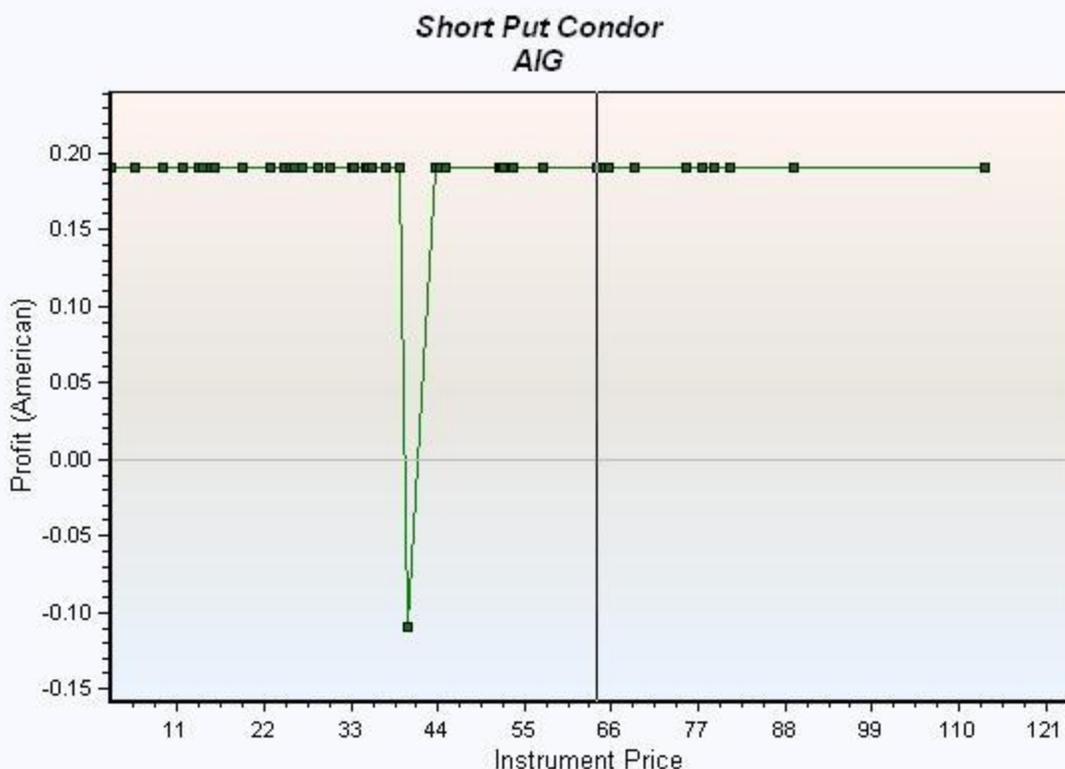


The Short Gut was implemented on Apple because it captures profitability from upticks and downticks in stock price. Since Apple's stock price has been extremely volatile in the last couple of months, it is a good idea to have an option spread that captures the upside and downside potential of future stock prices prior to the expiration date. Mid September/early October has

shown Apple stock's potential because the price rose above \$700 per share. We expect the price of the stock will go up when the Apple Watch comes out, and when the new iPhone is released within the next couple of months, but for right now this spread is an excellent way to make money off of Apple.



Google's stock price volatility over the past couple of months has been relatively high. The stock price is staying around \$800 but within a range of \$30 above and below. The Long Call Butterfly lets the investor realize a profit of at least \$3.75/share, and if the stock price rises to \$810, the investor will receive roughly \$8.00/share. This spread requires the investor to be long on 1 call option, and short on 2 call options.



AIG stock has had relatively low volatility over the past couple of months. For this reason, a Short Put Condor spread was implemented to capture any slight uptick or downtick in stock price. The profit potential is relatively low compared to the other two spreads. If the stock price rises above \$44 or if it falls below \$38, there will be a profit of \$.20/share.

Short Positions:

JC. Penney (JCP):

Over the past 16 month, JC. Penney has let go of more than 19,000 employees. Due to a 23% decline in sales in 4Q, 2012 the company is quickly falling apart. It is projected by JC. Penney’s management that the company will run out of cash by June of 2013. JCP’s stock has fallen more than 60% over the last year. Their CEO (Ron Johnson) just stepped down from his executive position. Mr. Johnson was brought into the department store chain with hopes of rebuilding the company. Expectations were that Mr. Johnson would be able to take JCP in the right direction due to his success developing and implementing Apple’s (AAPL) retail stores. Mr. Johnson attempted redirect the company from being a bargain department store to a boutique type retailer, offering high quality clothing at bargain prices. Although, this strategy has not worked for JCP whatsoever.

Hewlett-Packard (HPQ):

Hewlett-Packard has been through four CEO's over the past five years. The business operates in several dying technology segments whose future is not certain. These technology segments are: personal computers, printing systems, and hardware services. Past management left the company in ruins for current CEO, Meg Whitman. The company fully missed the smartphone boat as well as the tablet wave. In 2011, HPQ purchased English software giant, Autonomy for 11 billion dollars with intentions of discontinuing their computer business and redirecting to becoming a software company. Although, this past Fall, the company wrote down a 8 billion dollar loss on the company. The company's future is uncertain, and year over year revenues continue to fall. Furthermore, famous Hedge Fund manager Jim Chanos, who is known for profiting on short positions, currently has an extremely large short position in HPQ.

Best Buy (BBY):

Best Buy has been losing market share to online retailers, in particular Amazon for the past several years. Big Box retailers are expensive with nominal profit margins at best. Q1, 2013 net income of just \$82 million, was down sharply by 37-percent compared to the prior year. The future of the big box retailer is uncertain and we strongly believe that a short position in BBY is most appropriate.

Performance Measures

PERFORMANCE	MANAGED	PORTFOLIO		MARKET	INDEX	
Risk Free Rate		0.04%				
Average	\$1,103,867.51	0.35%		\$1,547.89	0.12%	
Geometric	\$1,101,758.83	0.35%		\$1,547.43	0.11%	
Deviation	\$66,287.44	0.67%		\$32.68	0.73%	
Skewness		-0.39			-0.98	
Kurtosis		0.55			0.96	
Ho:Normal / P-value		0.977	0.49511		0.954	0.03265
Sharpe Measure		192.30			57.47	
Treynor Measure		1.29			0.42	
Jensen's Alpha		0.00237				
Sortino Ratio		64.46			66.31	
VaR Indexed @5%		\$18.12	0.95%		\$21.42	1.32%
CVaR Indexed @1%		\$36.12	1.90%		\$29.56	1.82%
VaR @5%		\$11,940.68	0.95%		\$21.42	1.32%
CVaR @1%		\$23,802.48	1.90%		\$29.52	1.82%
STARR Ratio		18.44%			6.33%	
Omega		1.39			0.96	
Sharpe-Omega		0.74			0.18	
M2		0.000				
Corr(P,I) / P-value		0.916	0.00001			
Corr(I,O) / P-value		0.891	0.00001			
Corr(P,O) / P-value		0.939	0.00%			

Performance Measures

PERFORMANCE	OPTIMAL	PORTFOLIO		UNHEDGED	PORTFOLIO	
Risk Free Rate						
Average	\$906,220.72	0.20%		\$1,020,613.07	0.13%	
Geometric	\$905,176.30	0.19%		\$1,020,288.26	0.13%	
Deviation	\$40,791.00	0.89%		\$19,280.68	0.89%	
Skewness		-0.24			-0.33	
Kurtosis		-0.43			0.02	
Ho:Normal / P-value		0.966	0.15362		0.974	0.36797
Sharpe Measure		103.34			53.94	
Treynor Measure		2.10			0.49	
Jensen's Alpha		0.00156			0.00018	
Sortino Ratio		110.86			65.27	
VaR Indexed @5%		\$19.69	1.16%		\$26.38	1.62%
CVaR Indexed @1%		\$30.68	1.80%		\$36.07	2.22%
VaR @5%		\$11,103.85	1.16%		\$17,391.84	1.62%
CVaR @1%		\$17,303.35	1.80%		\$23,779.35	2.22%
STARR Ratio		10.83%			5.96%	
Omega		1.29			1.01	
Sharpe-Omega		0.37			0.18	
M2		0.00			-0.008	
Corr(P,I) / P-value				Corr(U,I) / P-Value	0.653	0.00001
Corr(I,O) / P-value				Corr(U,P) / P-Value	0.609	0.00001
Corr(P,O) / P-value				Corr(U,O) / P-Value	0.481	0.00001

Futures Hedge

Historical Date	Portfolio Value with Micro Hedge	E-mini S&P 500 Index Price	E-mini S&P 500 Market Value x (50)	Number of Contracts	Dynamic Hedge Open	Dynamic Hedge Close	Hedge Profit / Loss
25-Jan-13	\$980,422.00	\$1,490.00	\$74,500				
28-Jan-13	\$982,633.00	\$1,491.25	\$74,562				
29-Jan-13	\$990,574.00	\$1,499.25	\$74,962	13	\$974,512		
30-Jan-13	\$988,037.00	\$1,489.50	\$74,475				
31-Jan-13	\$986,070.00	\$1,487.50	\$74,375	13		\$966,875	\$7,637
01-Feb-13	\$999,316.00	\$1,501.00	\$75,050	13	\$975,650		
04-Feb-13	\$983,109.00	\$1,487.75	\$74,387	13		\$967,037	\$8,612
05-Feb-13	\$997,671.00	\$1,500.25	\$75,012				
06-Feb-13	\$999,360.00	\$1,501.00	\$75,050	13	\$975,650		
07-Feb-13	\$1,005,178.00	\$1,499.50	\$74,975	13		\$974,675	\$975

08-Feb-13	\$1,015,642.00	\$1,506.75	\$75,337				
11-Feb-13	\$1,016,012.00	\$1,507.25	\$75,362				
12-Feb-13	\$1,011,720.00	\$1,510.50	\$75,525				
13-Feb-13	\$1,013,559.00	\$1,511.50	\$75,575				
14-Feb-13	\$1,023,316.00	\$1,512.75	\$75,637	13	\$983,287		
15-Feb-13	\$1,023,849.00	\$1,511.25	\$75,562	13		\$982,312	\$975
19-Feb-13	\$1,031,896.00	\$1,522.25	\$76,112	13	\$989,462		
20-Feb-13	\$1,016,725.00	\$1,501.25	\$75,062				
21-Feb-13	\$1,016,224.00	\$1,495.25	\$74,762	13		\$971,912	\$17,550
22-Feb-13	\$1,023,079.00	\$1,508.75	\$75,437	13	\$980,687		
25-Feb-13	\$1,009,625.00	\$1,481.50	\$74,075	13		\$962,975	\$17,712
26-Feb-13	\$1,015,423.00	\$1,486.75	\$74,337				
27-Feb-13	\$1,021,973.00	\$1,510.00	\$75,500	13	\$981,500		
28-Feb-13	\$1,023,400.00	\$1,507.50	\$75,375	13		\$979,875	\$1,625
01-Mar-13	\$1,021,917.00	\$1,510.75	\$75,537				
04-Mar-13	\$1,026,500.00	\$1,520.00	\$76,000				
05-Mar-13	\$1,042,991.00	\$1,531.25	\$76,562				
06-Mar-13	\$1,037,534.00	\$1,533.25	\$76,662				
07-Mar-13	\$1,040,487.00	\$1,537.00	\$76,850				
08-Mar-13	\$1,041,658.00	\$1,543.75	\$77,187				
11-Mar-13	\$1,046,718.00	\$1,550.25	\$77,512	13	\$1,007,662		
12-Mar-13	\$1,039,077.00	\$1,546.75	\$77,337	13		\$1,005,387	\$2,275
13-Mar-13	\$1,038,710.00	\$1,550.00	\$77,500				
14-Mar-13	\$1,040,865.00	\$1,556.00	\$77,800	13	\$1,011,400		
15-Mar-13	\$1,040,709.00	\$1,553.50	\$77,675				
18-Mar-13	\$1,040,687.00	\$1,546.75	\$77,337				
19-Mar-13	\$1,041,889.00	\$1,542.25	\$77,112	13		\$1,002,462	\$8,937
20-Mar-13	\$1,044,356.00	\$1,549.00	\$77,450	13	\$1,006,850		
21-Mar-13	\$1,044,006.00	\$1,539.00	\$76,950	13		\$1,000,350	\$6,500
22-Mar-13	\$1,048,903.00	\$1,552.00	\$77,600	13	\$1,008,800		
25-Mar-13	\$1,045,051.00	\$1,547.00	\$77,350	13		\$1,005,550	\$3,250
26-Mar-13	\$1,050,154.00	\$1,557.25	\$77,862	13	\$1,012,212		
27-Mar-13	\$1,042,022.00	\$1,556.75	\$77,837	13		\$1,011,887	\$325
28-Mar-13	\$1,034,799.00	\$1,562.75	\$78,137	13	\$1,015,787		
01-Apr-13	\$1,033,689.00	\$1,556.00	\$77,800	13		\$1,011,400	\$4,387
02-Apr-13	\$1,042,422.00	\$1,564.50	\$78,225	13	\$1,016,925		
03-Apr-13	\$1,036,026.00	\$1,548.50	\$77,425	13		\$1,006,525	\$10,400
04-Apr-13	\$1,029,788.00	\$1,554.50	\$77,725	13	\$1,010,425		
05-Apr-13	\$1,021,610.00	\$1,546.00	\$77,300	13		\$1,004,900	\$5,525
08-Apr-13	\$1,019,979.00	\$1,559.25	\$77,962				
09-Apr-13	\$1,024,122.00	\$1,563.25	\$78,162				
10-Apr-13	\$1,036,851.00	\$1,582.75	\$79,137				

11-Apr-13	\$1,038,792.00	\$1,587.75	\$79,387	13	\$1,032,037		
12-Apr-13	\$1,034,400.00	\$1,582.00	\$79,100				
15-Apr-13	\$1,017,135.00	\$1,543.50	\$77,175	13		\$1,003,275	\$28,762
16-Apr-13	\$1,030,996.00	\$1,568.75	\$78,437	13	\$1,019,687		
17-Apr-13	\$1,011,800.00	\$1,546.00	\$77,300				
18-Apr-13	\$997,175.00	\$1,534.00	\$76,700	13		\$997,100	\$22,587
19-Apr-13	\$1,016,655.00	\$1,547.50	\$77,375				
22-Apr-13	\$1,021,765.00	\$1,556.00	\$77,800				
23-Apr-13	\$1,033,132.00	\$1,573.50	\$78,675				
24-Apr-13	\$1,037,104.00	\$1,574.00	\$78,700				
25-Apr-13	\$1,037,542.00	\$1,581.75	\$79,087	13	\$1,028,137		
26-Apr-13	\$1,036,020.00	\$1,576.50	\$78,825	13		\$1,024,725	\$3,412
29-Apr-13	\$1,053,113.00	\$1,588.25	\$79,412				
30-Apr-13	\$1,063,042.00	\$1,592.25	\$79,612	13	\$1,034,962		
01-May-13	\$1,055,016.00	\$1,577.25	\$78,862	13		\$1,025,212	\$9,750
02-May-13	\$1,066,458.00	\$1,592.25	\$79,612				
Net Position	\$86,036						\$161,200

We use index values so we are able to compare our portfolio to the market. The average return of the hedged portfolio is 0.35% compared to 0.13% for the unhedged portfolio, .20 % for the optimal portfolio, and .12% for the market. We gained three times the amount of our unhedged portfolio and twice as much as the market this is a signal of the strength of our portfolio. Our geometric returns are as expected. The gain on the E-mini SP 500 Futures contract is roughly \$143,000. A look at the standard deviations of our hedged, unhedged, optimal portfolios and the E-mini S&P 500 explains the overall performance of each instrument. Those values being .67%, .89%, .69%, and .73% The standard deviation shows we generated higher returns and less risk than the unhedged and optimal portfolio as well as the market. Our Sharpe ratios are 192.3, 53.94, 103.4 and 57.4 for the hedge, unhedged, optimal portfolios and the market. This shows our returns generated by taking on additional risk are better in our hedged portfolio in comparison to the optimal portfolio, unhedged portfolio, and the market by a milestone.

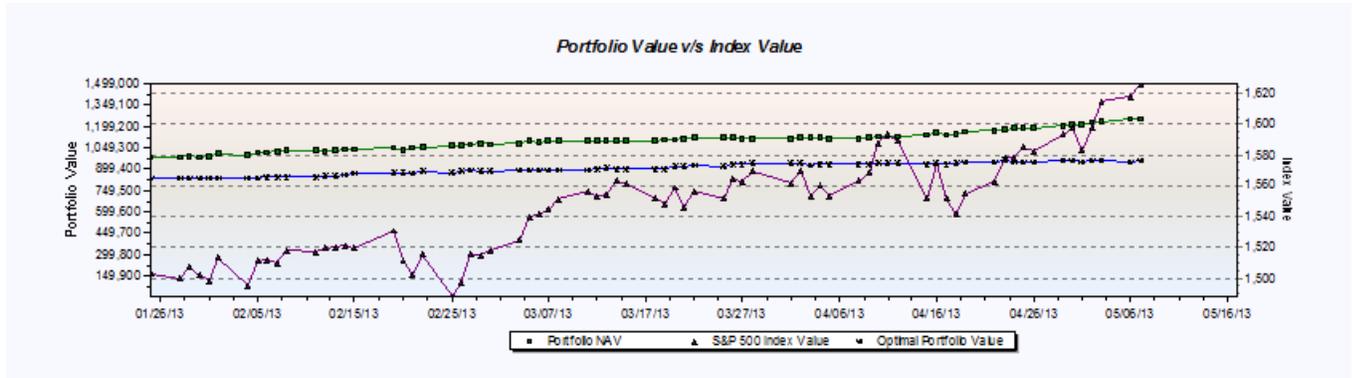
The Treynor ratios indicate risk-adjusted performance just as the Sharpe ratio does. However, the Treynor measure uses beta as a measure of risk instead of standard deviation. The ratios are 1.29, .49, 2.10, and .42. As expected the Un hedged portfolio has the worst risk-adjusted performance over the hedge period. Our VaR and CVaR measures are consistent with our standard deviation. They are less risky than the unhedged portfolio. Our VaR values of our hedged, unhedged, optimal portfolio, and the market are, \$11,940.68, \$17391.84, \$1103.85, \$11940.68, and \$21.42 respectively. Estimating at the 5% confidence level the expected

maximum loss given a time horizon of one day will equal these values. Directly comparing the returns measured in the dollar change using our VaR index values there is a 95% chance that the daily loss will not exceed \$18.12, \$26.38, \$19.69, and \$21.42 in our managed, unhedged, optimal portfolio and the market index. Quantifying the risk beyond VaR there is on average a 1% chance our hedged portfolio will incur a daily loss exceeding \$23802.48, \$23779.38, \$17303.35, and \$29.52 in our hedged, unhedged, optimal portfolio and the market index. Given a direct comparison of the change in dollar CVaR indexed shows there is a 1% chance our managed portfolio will not exceed a loss of \$36.12, \$ 36.07, \$30.68, and \$29.56. These numbers show that taking on risk does increase the chances of loss however expecting greater returns with our hedged portfolio a 1% chance of losing more is worth it. Our Sortino measures the rate of return per unit of downside risk measuring between good and bad volatility. Our values are 64.46 65.27, 110.86, and 66.31.

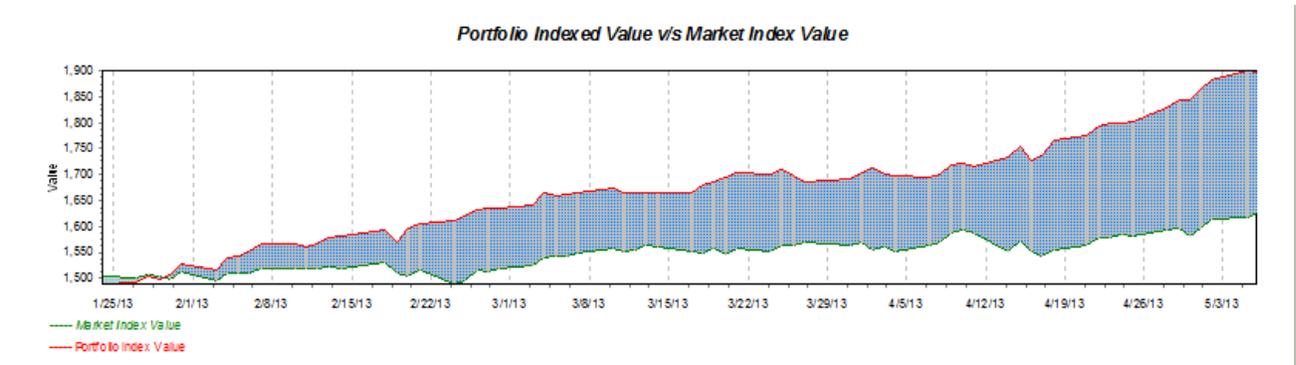
As desired, the higher value in our hedged portfolio shows our returns compensate for the potential risk even though the optimal portfolio has a higher value our average returns are greater. Our Omega values for our hedged portfolio, unhedged, optimal portfolio, and the E-mini S&P 500 are 1.39, 1.01, 1.29 and .96. These values consider the returns above and below the risk free rate. Realizing a threshold of .04 our portfolio both our portfolios and the S&P 500 have higher values than the given threshold. These values show the total probability of weighted gains and losses for not normal distributed returns. Even if normally disturbed, omega is a good indicator of the investors risk aversion. A compliment measure to the omega is the Sharpe omega it is used for more intuitive practices however, our values for our managed portfolio, unhedged, optimal portfolio, and the market index are .74, .18, .37 and .18. Like the Omega the higher value for a given lower value threshold is desired. The Sharpe- Omega produces the same rankings as the Sharpe Ratio; however, when calculating the Sharpe-Omega a put price on the instrument at the threshold rate is used in the denominator instead of standard deviation. M^2 allows for each asset to have the same volatility creating an even playing field giving them a standard risk level adjusting funds by leveraging and deleveraging using risk free assets. Our values for the hedged, unhedged, optimal portfolio and the market are 0.00, -.008, 0.00, and N/A.

4. Graphical Analysis: /CDFP

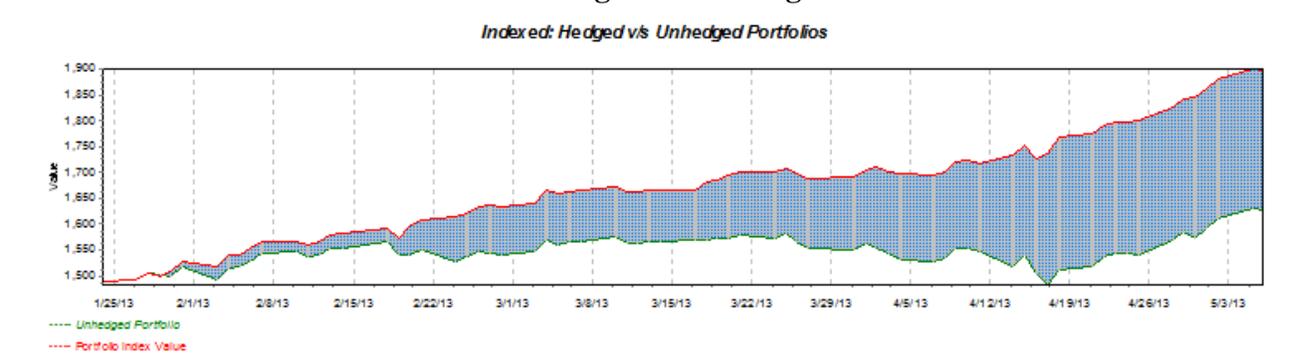
Indexed Portfolio v/s Market Index:



Portfolio Value v/s Index Value:

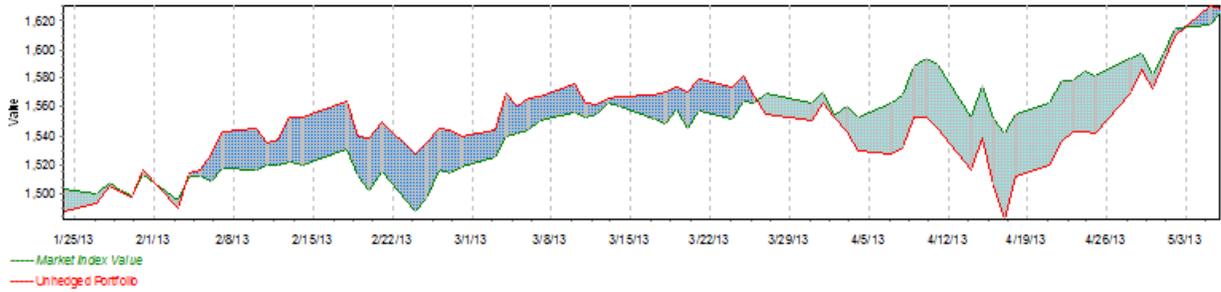


Indexed: Hedged v/s Unhedged:



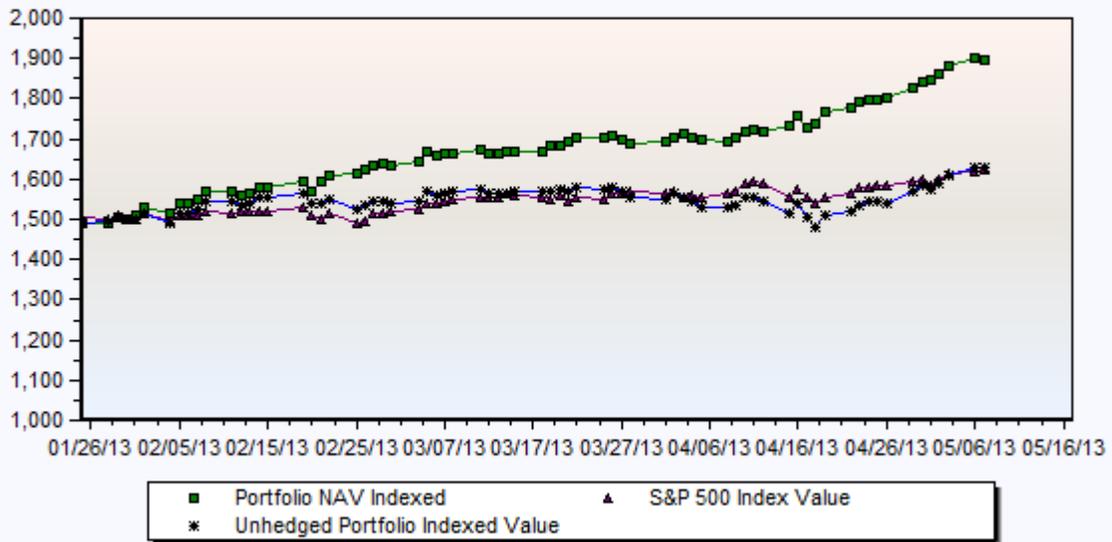
Indexed: Unhedged v/s Market Index:

Indexed: Unhedged v/s Market Portfolios



Indexed: Hedged, Unhedged, and Market :

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5. Summary and Conclusions:

Investment objectives:

Our hedged portfolio produced a Sharpe ratio of 192.30 compared to the Market Index's 57.47. Our portfolio generated greater returns adjusted for risk. Downside risk measures such as the Sortino ratio show that the hedged portfolio generated slightly less return than that of the market once adjusted for risk. Furthermore, the hedged portfolio is shown to have a VaR@5% less than that of the market index. Therefore, it can be said that our portfolio was susceptible to less downside risk than the market.