Successful Portfolios LLC

Select Directional ETF Model

-31.9%	-1.8%	16.8%	20.4%
-24.5%	-10.7%	13.8%	12.7%
-36.1%	-28.9%	36.3%	25.4%
-24.0%	-20.6%	20.0%	20.5%

The Select Directional ETF Model:

Performance Driven Asset Allocation

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Summary

As investors grow fearful, they sell riskier assets, like stocks, and buy safe haven assets such as U.S. Treasuries and gold. As investors become greedy for the allure of higher returns, they move their money back into stocks. This cycle of fear and greed creates exploitable momentum in asset prices. We designed the Select Directional ETF Model with a simple premise, buy the best performing assets and sell the losers. The Select Directional Model consists of an unemotional, objective ranking system coupled with disciplined rebalancing rules. In the pages that follow, we fully disclose the ranking system, rules, as well as the results of a twelve year back test ended August 31, 2012.

Introduction

Efficient Market Hypothesis (EMH) postulates that the stock market reacts rationally to every bit of information instantly.[1] EMH outright dismisses momentum strategies. Under EMH, historical prices should not predict future returns. However, an unexplained phenomenon should not deny its existence. For example, bees have been flying long before the mechanics of their flight were fully understood in 2006 by scientific models.[2] In an often quoted research paper, *Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency*, the authors discovered that a strategy of buying stocks with the best 6 month performance and shorting the stocks with the worst 6 month performance earned a 12% compounded excess return on average.[3] Our paper will provide evidence that the Select Directional Model may exploit asset price momentum to produce satisfactory risk adjusted returns for investors.

Other than you and me, everybody is irrational. And I'm not so sure about you.

EMH assumes market participants act rationally on average. However, anyone who has been around markets long enough knows that individuals often make uninformed, irrational, and emotional investment decisions. Investing biases, in one form or another, are hard wired into each and everybody's brain ([for more information on behavioral biases, visit the Psy-Fi Blog](#)).[4]

Momentum is possibly the result of behavioral biases. Individually, we are slow to evaluate new information, we sell our winning stocks too soon, and we hold onto our losers too long. These behaviors create momentum for asset prices to shoot above, or dive below fair market value. In short, The Select Directional Model seeks to profit from the irrational behavior of other investors.

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[1] According to strong-form EMH, even those who trade on illegal inside information cannot earn excess returns.

[2] California Institute of Technology (2006, January 12). Deciphering the Mystery of Bee Flight. ScienceDaily.

[3] Jegadeesh, N. and S. Titman. 1993. "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency." *Journal of Finance*, vol. 48:65-91.

[4] Visit the Psy-Fi blog at http://www.psyfitec.com/2011/10/one-long-argument-big-list-of.html for an informative list of behavioral biases.
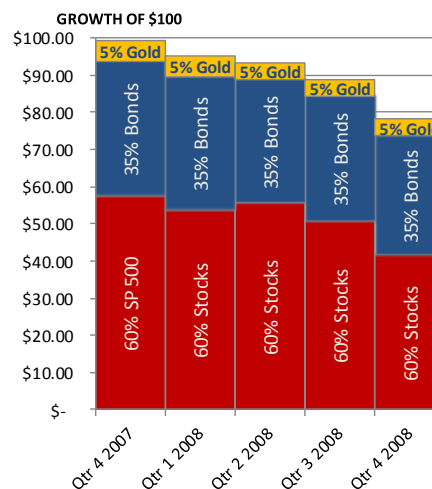
Performance Driven Asset Allocation

Investors are most familiar with the conventional, constant mix asset allocation. A portfolio might use a constant mix asset allocation as in our example in figure 1. Say you have $100 invested in a 60/35/5 (60% stocks, 35% bonds, 5% gold) constant mix portfolio beginning 4th quarter 2007. We can see in figure 1 how each of these assets performed in that quarter. Treasuries and gold were up in price, while the S&P 500 was down. At the end of the quarter, the portfolio contained 58% stocks, 36% bonds, and 6% gold, and required rebalancing back to its original mix. To do this, some amount of the stronger performing assets were sold (bonds and gold), and more of the weaker performing assets (stocks) were bought.

Buying shares of an asset as it declines in value can be very rewarding when you expect the downward trend to eventually reverse. Nevertheless, be honest with yourself. Were you willing to buy more stocks at the end of 4th quarter 2008 when the S&P 500 was down nearly 22%? Few investors can say that they had the discipline and emotional fortitude to stick to a plan of buying stocks in periods of extreme financial distress.

Figure – Periodic Table of Price Returns and a 60/35/5 Constant Mix Portfolio (4th Qtr. 2007 – 4th Qtr. 2008)

|		Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008
Barclays 1-3 Year Treasury Bond Fund	SHY	2.6%	2.9%	-0.9%	1.7%	2.8%
SPDR Gold Trust	GLD	12.2%	9.6%	1.1%	-6.9%	1.7%
SPDR S&P 500 ETF	SPY	-3.7%	-9.3%	-2.5%	-8.8%	-21.6%

GROWTH OF $100

Performance driven asset allocation, like constant mix, rebalances to fixed weights of assets in the portfolio. What distinguishes performance driven asset allocation is that it rebalances to the strongest performing assets. Those are the assets with the greatest upward momentum.

High Quality Strategic Assets

Conceptually, we divided our investable universe into three broad asset classes: S&P 500 stocks, one to three year U.S. Treasury notes, and gold bullion. Through a performance driven selection process, the Select Directional Model invests in these strategic assets classes using Exchange Traded Funds (ETFs). ETFs, like traditional mutual funds, are diversified portfolios of stocks, bonds or other assets. ETFs are generally passively managed, low cost, and disclose their holdings on a daily basis.

Figure 2 – Select Directional Model Asset Class Decisions
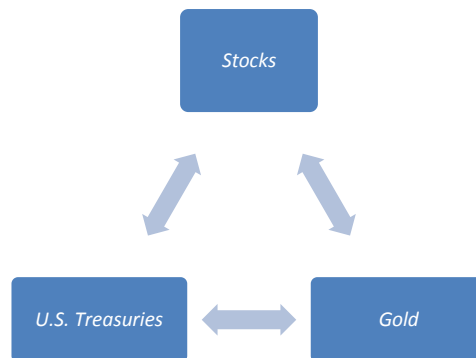
Money rotates among asset classes as investors' appetite for risk ebbs and flows.

The Stock Asset Class is composed of the companies in the S&P 500 Index. The S&P 500 is a widely followed barometer for U.S. large cap stocks. "The index includes 500 leading companies in leading industries of the U.S. economy, capturing 75% coverage of U.S. equities."[5] We further divided the S&P 500 into nine separate sectors using Select Sector SPDR ETFs. Select Sector SPDR ETFs are constructed to passively track their respective sector of the economy. Each Select Sector SPDR ETF holds a subset of large cap, high quality stocks of companies included in the S&P 500 Index.

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[5] For more information regarding the S&P 500 Index and its constituents, visit http://us.spindices.com/indices/equity/sp-500.

The Gold Asset Class is represented by the SPDR Gold Shares ETF. For thousands of years, investors around the world have considered gold to be a safe haven store of wealth. SPDR Gold Shares are a liquid, low cost, and secure alternative to holding physical gold.

Short term U.S. Treasuries are among the safest and most liquid assets in the world. They have little interest rate risk and little risk of default. The iShares 1 to 3 Year Treasury Bond Fund ETF represents the Bond Asset Class.

Looking at figure 3, next page, we can get an idea of the quarterly performance for these assets over the past 5 years. The most volatile securities have dark red and dark green cells. The safer, less volatile, securities have cells that are mostly yellow in color. The Select Directional Model navigates this landscape by rebalancing to the top three ETFs every 4 weeks according to the ranking formula shown in figure 4.

Figure 3 – Periodic Table of Price Returns for the Select Directional Model Strategic Assets (3rd Qtr. 2007 – 2nd Qtr. 2012)

		Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012
Barclays 1-3 Year Treasury Bond Fund	SHY	2.5%	2.6%	2.9%	-0.9%	1.7%	2.8%	-0.1%	-0.2%	0.8%	-0.1%	0.7%	1.2%	0.5%	-0.1%	-0.1%	0.9%	0.5%	0.1%	-0.1%	0.2%
SPDR Gold Trust	GLD	14.4%	12.2%	9.6%	1.1%	-6.9%	1.7%	4.3%	1.0%	8.4%	8.6%	1.5%	11.7%	5.1%	8.5%	0.8%	4.4%	8.3%	-3.8%	6.7%	-4.3%
Materials Select Sector SPDR	XLB	4.4%	0.0%	-3.4%	4.4%	-19.5%	-31.9%	-1.8%	16.8%	20.4%	7.2%	2.8%	-16.0%	17.9%	18.1%	4.5%	-1.1%	-25.0%	14.9%	10.8%	-4.0%
Energy Select Sector SPDR	XLE	8.7%	6.3%	-6.4%	19.8%	-28.2%	-24.5%	-10.7%	13.8%	12.7%	6.3%	0.9%	-13.2%	13.4%	22.3%	17.2%	-5.2%	-22.0%	18.6%	4.2%	-7.1%
Financial Select Sector SPDR	XLF	-4.5%	-14.9%	-13.3%	-17.8%	-0.9%	-36.1%	-28.9%	36.3%	25.4%	-3.3%	10.8%	-13.2%	4.1%	11.5%	3.1%	-6.0%	-22.8%	10.8%	21.9%	-6.9%
Industrlial Select Sector SPDR	XLI	5.8%	-4.2%	-4.1%	-8.6%	-8.9%	-24.0%	-20.6%	20.0%	20.5%	6.2%	12.4%	-11.8%	14.6%	12.1%	8.5%	-0.7%	-21.1%	16.3%	11.4%	-4.2%
Technology SPDR	XLK	5.6%	-0.7%	-16.0%	2.6%	-13.0%	-22.4%	1.8%	17.1%	15.0%	10.3%	0.7%	-11.4%	13.2%	9.9%	3.8%	-1.0%	-7.8%	8.3%	18.9%	-4.4%
Consumer Staples Select Sector SPDR	XLP	4.0%	3.4%	-2.8%	-3.5%	3.9%	-13.5%	-11.1%	9.8%	11.6%	4.9%	5.5%	-8.1%	10.1%	6.0%	2.7%	5.1%	-4.3%	10.5%	5.5%	2.7%
Utilities SPDR	XLU	1.3%	7.2%	-9.7%	8.1%	-17.6%	-11.5%	-11.0%	10.4%	6.3%	7.0%	-4.4%	-3.7%	12.2%	1.1%	2.7%	6.1%	1.4%	8.2%	-2.6%	6.5%
Health Care SPDR	XLV	0.5%	0.2%	-11.3%	-1.5%	-1.3%	-11.6%	-8.2%	9.2%	9.4%	9.0%	3.4%	-11.8%	8.7%	3.8%	5.6%	7.8%	-10.2%	9.9%	9.0%	1.6%
Consumer Discretionary SPDR	XLY	-6.2%	-10.6%	-5.9%	-7.0%	-1.7%	-22.7%	-8.4%	17.9%	19.4%	9.0%	10.3%	-11.0%	15.1%	12.6%	4.7%	3.3%	-13.0%	12.6%	15.9%	-2.6%
SPDR S&P 500 ETF	SPY	1.9%	-3.7%	-9.3%	-2.5%	-8.8%	-21.6%	-11.2%	16.3%	15.4%	6.1%	5.0%	-11.4%	11.2%	10.8%	5.9%	0.0%	-13.8%	11.6%	12.7%	-2.8%

In any quarter there can be large performance differences among the asset classes. We can also see that there is relative safety within the Stock Asset Class. For example, the Consumer Staples sector, consisting of companies that produce things we generally must buy (soap and macaroni and cheese), is a less volatile sector of the economy than the Consumer Discretionary sector (cruises and enormous TVs).

List of Select Directional Model Strategic Assets

Asset Class	ETF Symbol	Sector	Descriptions from the Respective ETF Fact Sheets
Stock	XLY	Consumer Discretionary Link to XLY Select Sector SPDR	Industries such as automobiles and components, consumer durables, apparel, hotels, restaurants, leisure, media, and retailing are primarily represented in this group. The Index includes McDonald's, Walt Disney Co., and Comcast.
Stock	XLP	Consumer Staples Link to XLP Select Sector SPDR	The companies in this sector are primarily involved in the development and production of consumer products that cover food and drug retailing, beverages, food products, tobacco, household products, and personal products. Component stocks include Wal-Mart, Proctor & Gamble, Philip Morris International, and Coca-Cola.
Stock	XLE	Energy Link to XLE Select Sector SPDR	Energy companies in this Index primarily develop and produce crude oil and natural gas, and provide drilling and other energy-related services. Leaders in the group include ExxonMobil Corp., Chevron Corp, and ConocoPhillips.
Stock	XLF	Financials Link to XLF Select Sector SPDR	A wide array of diversified financial service firms are featured in this sector with business lines ranging from investment management to commercial and investment banking. Among the companies included in the Index are JPMorgan Chase, Wells Fargo, and BankAmerica Corp.
Stock	XLV	Health Care Link to XLV Select Sector SPDR	Companies in this sector primarily include health care equipment and supplies, health care providers and services, biotechnology, and pharmaceuticals industries. Pfizer Inc., Johnson & Johnson, and Abbott Labs are included in this sector's mix.
Stock	XLI	Industrials Link to XLI Select Sector SPDR	General Electric Co., Minnesota Mining & Manufacturing Co., and United Parcel are among the largest components by market capitalization in this sector. Industries in the Index include aerospace and defense, building products, construction and engineering, electrical equipment, conglomerates, machinery, commercial services and supplies, air freight and logistics, airlines, marine, road and rail, and transportation infrastructure companies.
Stock	XLB	Materials Link to XLB Select Sector SPDR	This Index is primarily composed of companies involved in such industries as chemicals, construction materials, containers and packaging, metals and mining, and paper and forest products. Among its largest components are Monsanto, E.I. DuPont de Nemours & Co., and Dow Chemical Co.
Stock	XLK	Technology Link to XLK Select Sector SPDR	Stocks primarily covering products developed by internet software and service companies, IT consulting services, semiconductor equipment and products, computers and peripherals, diversified telecommunication services and wireless telecommunication services are included in this Index. Components include Microsoft Corp., AT&T, International Business Machines Corp., and Cisco.
Stock	XLU	Utilities Link to XLU Select Sector SPDR[6]	The Utilities Index primarily provides companies that produce, generate, transmit or distribute electricity or natural gas. The component companies include Exelon Corp., Southern Co., and Dominion Resources Inc.
Gold	GLD	Gold Link to GLD SPDR Gold Shares[7]	SPDR® Gold Shares (GLD) offer investors an innovative, relatively cost efficient and secure way to access the gold market. Originally listed on the New York Stock Exchange in November of 2004, and traded on NYSE Arca since December 13, 2007, SPDR® Gold Shares is the largest physically backed gold exchange traded fund (ETF) in the world.
Bonds	SHY	Short Term Treasuries Link to SHY Barclays 1-3 Year Treasury Bond Fund[8]	The iShares Barclays 1-3 Year Treasury Bond Fund (SHY) seeks to approximate the total rate of return that correspond generally to the price and yield performance, before fees and expenses, of the short-term sector of the United States Treasury market as defined by the Barclays U.S. 1-3 Year Treasury Bond Index.

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[6] For more information and the risks associated with Select Spider ETFs, visit http://www.sectorspdr.com/

[7] For more information and the risks associated with SPDR Gold Shares, visit http://www.spdrgoldshares.com/

[8] For more information and the risks associated with the Barclays 1-3 Year Treasury Bond ETF, visit http://us.ishares.com/product_info/fund/overview/SHY.htm

Risk

The Select Directional Model seeks excess returns by taking active risks. Like any stock market related investment, the Select Directional Model will lose money from time to time (there is no Holy Grail of investing). Like any active investment strategy, the Select Directional Model will at times underperform passive buy and hold strategies. If the Select Directional Model makes money, it is unlikely to be as tax-efficient as a buy and hold strategy. Active investment strategies incur added costs above that of buying and holding. The Select Directional Model is not suitable for everyone and is not meant to be a complete investment program.

Past returns do not necessarily predict future returns

The performance of the Select Directional Model, presented further on, is the result of a simulation, or back test, based on historical prices we believe to be accurate. The returns we present in this paper are hypothetical. While back testing and simulations are very useful tools to test ideas, investors need to beware of the potential for misleading results.   When you see back tests or simulations of investment models ask yourself, "Does the underlying theory make economic sense?" The *Super Bowl Indicator* as a model for investing makes no economic sense. It is an example of spurious correlation. Just because the NFC won the Super Bowl, you should not expect the stock market to go up that year.   The lesson is by sorting through lots of data (data mining) or fiddling too much with your variables (curve fitting) that you can create a model that appears to predict the future. It will look awesome, but it will not work in reality.

Methodology

We used a web-based stock screener and back-tester called Portfolio123 to test our ideas and to run our simulations. Once we selected the eleven strategic assets that we wanted to trade, we needed to specify the momentum factors. We settled on 300 and 150 day rate of change, weighting the longer price series more.

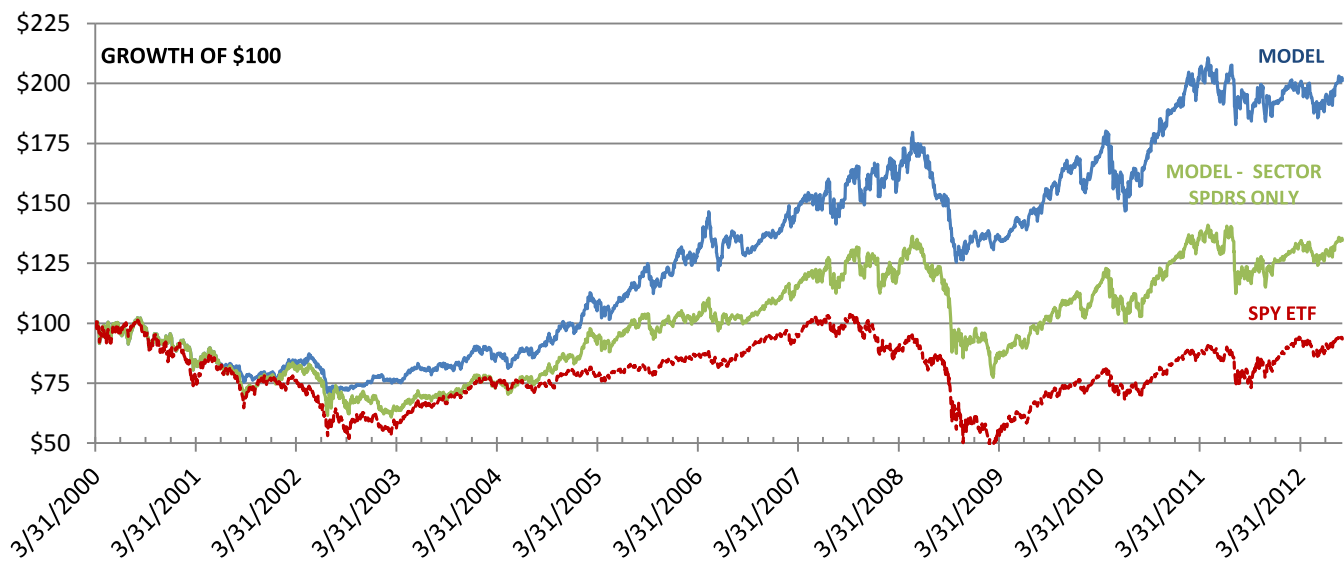**Figure 4 – The Select Directional Model's Ranking Formula**

$$\left(.70 \times \frac{Close_t}{Close_{t-300\ days}}\right) + \left(.30 \times \frac{Close_t}{Close_{t-150\ days}}\right)$$

To guard against curve fitting, we did not optimize these factors for profitability. Optimizing means that you plug many combinations of variables into your model until you get the best possible hypothetical result.

Survival of the Fittest Assets

The Select Directional Model buys the strong and sells the weak. Every four weeks, the Select Directional Model invests in the three highest ranked ETFs in equal weights. If the portfolio already holds one of these assets, it is rebalanced to its equal weight in the portfolio. If an ETF falls from a top three ranking, it is sold and replaced by another ETF ranked in the top three. Note that an equally weighted portfolio of thee ETFs ensures the portfolio will have at minimum one third of its value invested in stocks at each rebalancing date.

Figure 5 –Select Directional Model Simulated Total Returns (03/31/2000 through 8/31/2012)

In figure 5, we present the hypothetical performance simulation for the Select Directional Model using the 11 strategic assets compared to the S&P 500 ETF (SPY). We also plot, in green, the Select Directional Model using only the nine stock ETFs without the safe haven alternatives (Treasuries and gold). From this added simulation, we can see the risk and return benefits added by the flight-to-quality assets. The Barclays 1-3 Year Treasury Bond Fund ETF (SHY) was created July 22, 2002. The SPDR Gold Shares ETF (GLD) was created November 11, 2004. Portfolio123 extended the prices prior to inception of SHY and GLD using the underlying index for SHY and the spot price of gold for GLD. All of the simulations assume .10% for commissions and trade

slippage. Investment management fees are not deducted. Successful Portfolios LLC fee schedule is available at http://bit.ly/ONjmjD.[9] Trades were recorded using closing prices for the day after the assets were ranked.

4/1/2000 through 8/31/2012	Select Directional Model	Model – Select Sector SPDRS Only	S&P 500 ETF (SPY) Buy and Hold
Total Return	101.88%	35.07%	17.21%
Avg. Annualized Return	5.82%	2.45%	1.29%
Risk (Standard Deviation)	19.05%	23.38%	26.01%
Sharpe Ratio	0.09	-0.07	-0.11
Correlation with S&P 500 ETF (SPY)	0.65	0.85	-
R-Squared	0.42	0.73	-
Beta	0.47	0.77	-
Alpha (annualized)	3.02%	0.55%	-
Trailing 3 Years			
3 Year Total Return	38.47%	38.54%	49.57%
Avg. Annualized Return	11.45%	11.47%	14.35%
Risk (Standard Deviation)	20.05%	22.83%	22.41%
Sharpe Ratio	0.43	0.38	0.52
Correlation with S&P 500 ETF (SPY)	0.87	0.94	-
R-Squared	0.75	0.89	-
Beta	0.78	0.96	-
Alpha (annualized)	-0.77%	-2.39%	-

Portfolio123 calculates Alpha as: Alpha = (Return - 13 wk Treasury)-[(Beta * (Benchmark – 13 wk Treasury)][10]

Tail risk is the risk that in rare circumstances, a portfolio will take a large loss. We can see, far left of figure 6, the S&P 500 ETF had a loss of 16% to 20% in a single month. The Select Directional Model did not suffer a similar large hit in the simulation.

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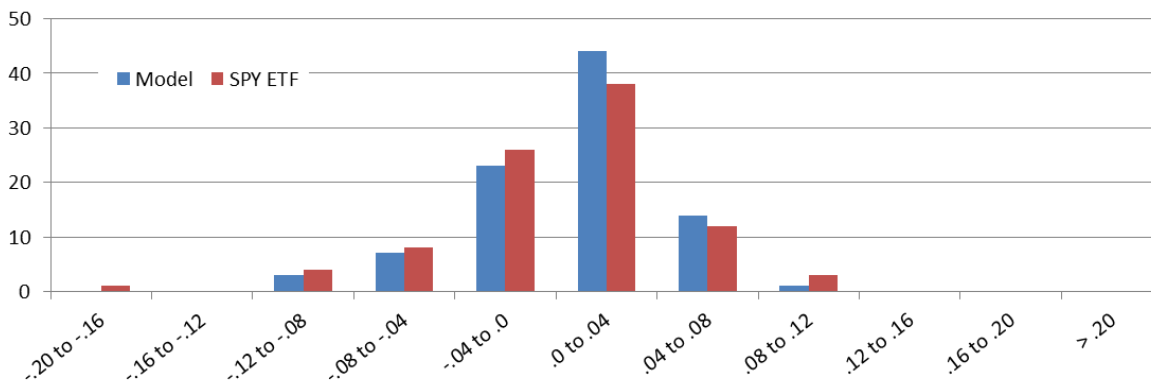
[9] Successful Portfolios LLC fee schedule can be found at http://successfulportfolios.com/compensation-schedule/
[10] For a glossary of terms and calculations, visit http://www.portfolio123.com/doc/doc_risk_glossary.jsp?popUp=1

We were enthusiastic about the simulation results. We tested the Model using four different time series (two bear markets and two bull markets) to make sure we were not just getting lucky. We can see in figure 7 that the Select Directional Model outperformed the S&P 500 ETF (SPY) in three out of the four selected periods.

Figure 7 – Exploring the Total Returns in Different Market Regimes
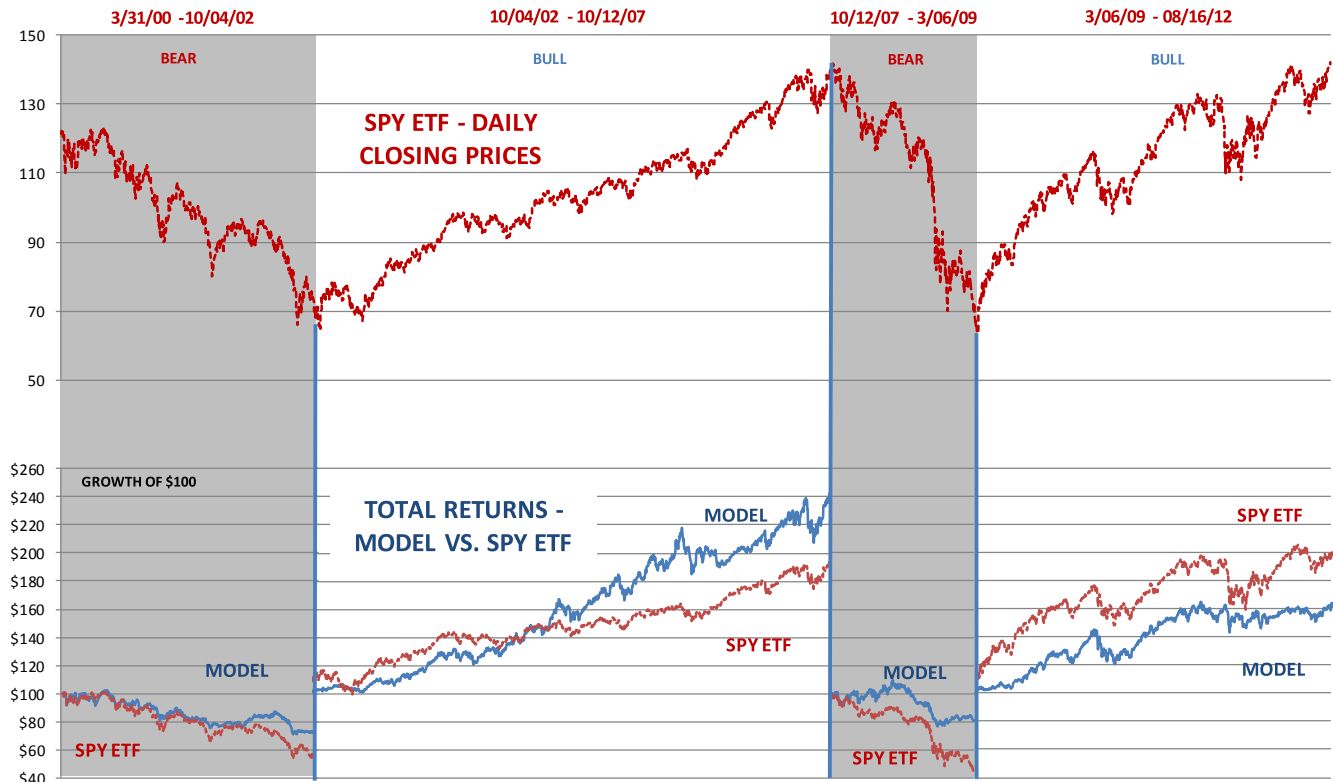
Hypothetical performance in four separate periods, two bear markets and two bull markets: Select Directional Model vs. S&P 500 ETF (SPY)

Table 3 – Period by Period Performance Summary (March 31, 2000 through August 16, 2012)

	Total Return	Risk (Standard Deviation)
Bear Market (Mar. 2000-Oct. 2002)		
Select Directional Model	-27.88%	18.34%
SPY ETF	-44.55%	28.26%
Excess Return	16.67%	
Bull Market (Oct. 2002-Oct. 2007)		
Select Directional Model	142.71%	16.94%
SPY ETF	111.45%	16.38%
Excess Return	31.26%	
Bear Market (Oct. 2007-Mar. 2009)		
Select Directional Model	-19.11%	25.73%
SPY ETF	-54.61%	46.16%
Excess Return	35.50%	
Bull Market (Mar. 2009-Aug. 2012)		
Select Directional Model	64.37%	18.75%
SPY ETF	121.55%	24.34%
Excess Return	-57.18%	

Although the Select Directional Model showed a hypothetical profit for the Bull Market period of March 2009 through August 2012, it underperformed the S&P 500 ETF (15.5% vs. 25.96% on an annualized basis). We will look into that underperformance shortly. First, though, we will explore what the Select Directional Model would have done correctly going into the Financial Crisis of 2008.

Joy begets sorrow (unless you are a model, devoid of human emotion)

As prices rise, the herd grows. As the herd grows, prices rise. The herd is happy until the cycle is interrupted. Then the herd stampedes, it's every bovine for *themselves*. Now you get momentum down. In our experience, prices fall faster than they rise. The Select Directional Model rebalances every 4 weeks: it will not be the first to sell, but, it will not be the last to sell either. The Select Directional Model coldly rotates to the newest leaders and feels neither joy nor sorrow.

Rotation to relative safety

Money flows to the relative safety of U.S. Treasuries and gold in times of market stress. Treasuries and gold will then outperform, causing them to be added to the Select Directional Model portfolio. We can see that this happened in figure 8, next page. In August of 2008, the Select Directional Model held a third of its value in short term Treasuries and another third in gold, because these assets were outperforming. The simulated portfolio was well positioned (with only a third of its value in low beta[11] stocks via the Consumer Staples ETF) as the S&P 500 swooned beginning September 2008.

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[11] Beta is the degree to which an asset reacts to moves in the stock market. It is a measure of a risk that cannot be diversified away. An asset with a beta of .5, on average, would have half the magnitude of price fluctuations compared to the stock market. A beta greater than 1 means the asset is more volatile than the stock market. The caveats are asset betas change over time, and betas are a backward-looking measure of risk. In a prolonged bull market, the Select Directional Model will likely hold high beta assets that are more sensitive to sharp pull backs in the stock market.

	Apr 2008	May 2008	Jun 2008	Jul 2008	Aug 2008	Sep 2008	Oct 2008	Nov 2008	Dec 2008	Jan 2009	Feb 2009
SHY	-0.8%	-0.3%	0.2%	0.4%	0.5%	0.8%	1.1%	1.1%	0.6%	-0.4%	-0.1%
GLD	-4.2%	0.9%	4.5%	-1.4%	-9.3%	4.1%	-16.1%	12.6%	7.7%	5.5%	1.4%
XLB	5.3%	5.2%	-5.8%	-3.2%	-1.6%	-15.5%	-22.4%	-10.7%	-1.7%	-7.4%	-8.0%
XLE	10.4%	5.2%	3.2%	-15.9%	0.3%	-14.9%	-18.8%	-2.2%	-5.0%	-1.8%	-12.3%
XLF	7.0%	-6.9%	-17.5%	6.7%	-1.0%	-6.3%	-21.9%	-18.5%	0.4%	-26.2%	-17.7%
XLI	2.9%	0.9%	-12.0%	0.8%	2.7%	-12.1%	-18.3%	-8.2%	1.4%	-12.0%	-17.0%
XLK	6.2%	6.5%	-9.4%	-2.4%	1.8%	-12.4%	-16.1%	-8.5%	1.1%	-4.8%	-3.8%
XLP	-0.8%	3.1%	-5.7%	2.4%	2.7%	-1.2%	-12.6%	-0.2%	-0.8%	-7.2%	-8.1%
XLU	5.1%	3.6%	-0.8%	-6.4%	-1.1%	-11.0%	-13.0%	4.2%	-2.4%	-0.2%	-12.5%
XLV	1.0%	1.9%	-4.2%	4.5%	2.1%	-7.4%	-11.5%	-6.3%	6.5%	-1.2%	-12.4%
XLY	2.4%	2.7%	-11.5%	0.1%	6.9%	-8.2%	-17.6%	-10.8%	5.2%	-10.6%	-9.1%
Total Return MODEL	3.9%	3.8%	0.4%	-6.9%	-5.0%	-3.8%	-12.6%	4.5%	2.7%	-0.7%	-2.0%
Total Return SPY	4.8%	1.5%	-8.8%	-0.9%	1.6%	-9.9%	-16.5%	-7.0%	0.2%	-8.2%	-10.7%
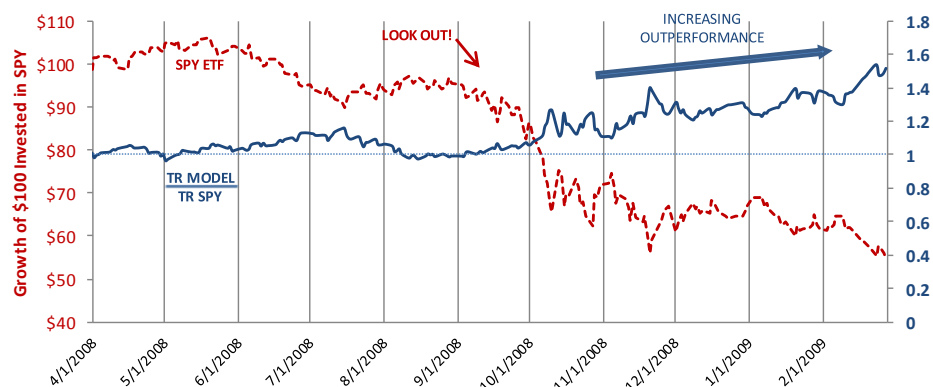
The monthly price returns of the Select Directional Model's ETF universe are displayed in the topmost section of the periodic table. At the beginning of each month, the hypothetical portfolio held the securities highlighted by the boldly outlined squares. On September 1, 2008, the hypothetical portfolio owned equal weights of Treasuries, gold, and Consumer Staples. The middle section compares the monthly hypothetical total returns of the Select Directional Model vs. the S&P 500 ETF (SPY). In the bottom section, the total return for SPY

is graphed against the Select Directional Model's hypothetical total return divided by SPY's total return (right axis in blue). Greater than 1 represents Select Directional Model hypothetical total return performance above that of SPY. Less than 1 indicates underperformance. Geometrically linking the monthly returns September 2008 through November 2008, the Select Directional Model lost 12.2% compared to losses of 30.1% for the S&P 500 ETF. During the horror show that was October 2008, the best performing S&P sector, Health Care, still lost 11.5%.
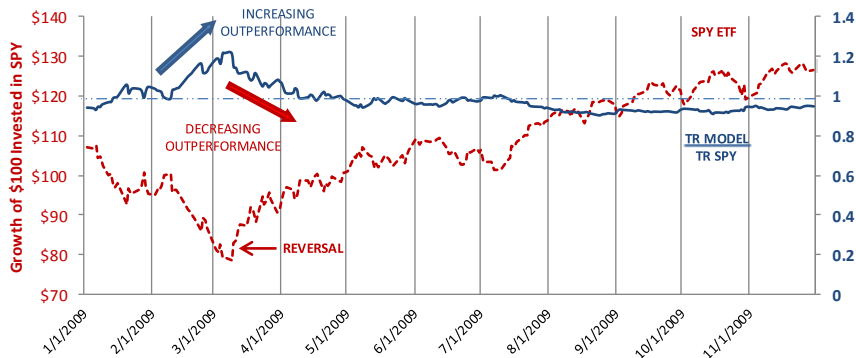
Expect the Select Directional Model to underperform as major trends reverse

Recall that the Select Directional Model rebalances the portfolio every four weeks based on price trends over the last 300 and 150 days. These longer periods filter out a lot of noise caused by rapid, trendless price swings. This is beneficial when those choppy price swings are noise, but not if a swing is a genuine reversal in trend. The boldly outlined cells in the periodic table of returns (figure 9, next page) represent the Select Directional Model's hypothetical holdings on the first of the given months, starting January 2009 and prior to the sharp reversal in March of that year. In February 2009, we see the Select Directional Model portfolio was outperforming, holding Treasuries, Consumer Staples, and gold as the S&P 500 fell 10.6% and 9.1% in consecutive months. However, beginning in March 2009, the Select Directional Model underperformed, remaining in safer assets for several months as the S&P 500 rocketed higher. The Select Directional Model cannot pick the exact low point to move 100% into stocks.

|	Jan 2009	Feb 2009	Mar 2009	Apr 2009	May 2009	Jun 2009	Jul 2009	Aug 2009	Sep 2009	Oct 2009	Nov 2009
SHY	-0.4%	-0.1%	0.5%	-0.2%	0.1%	-0.1%	0.1%	0.4%	0.2%	0.1%	0.6%
GLD	5.5%	1.4%	-2.5%	-3.3%	10.2%	-5.2%	2.4%	0.1%	5.8%	3.7%	12.8%
XLB	-7.4%	-8.0%	15.3%	15.6%	5.8%	-4.5%	12.9%	2.4%	4.2%	-5.2%	10.8%
XLE	-1.8%	-12.3%	3.8%	7.8%	12.9%	-6.5%	5.3%	1.1%	5.8%	2.5%	2.9%
XLF	-26.2%	-17.7%	17.1%	21.7%	14.0%	-1.8%	8.9%	12.9%	2.0%	-6.0%	4.4%
XLI	-12.0%	-17.0%	8.8%	18.1%	3.4%	-1.7%	8.7%	4.7%	5.8%	-4.0%	8.8%
XLK	-4.8%	-3.8%	11.2%	10.4%	2.3%	3.6%	8.2%	1.6%	4.6%	-1.2%	5.5%
XLP	-7.2%	-8.1%	4.3%	4.3%	5.1%	0.2%	6.7%	1.2%	3.3%	1.4%	3.7%
XLU	-0.2%	-12.5%	1.9%	1.2%	3.6%	5.4%	3.7%	1.0%	1.4%	-3.2%	4.8%
XLV	-1.2%	-12.4%	6.1%	-0.1%	6.8%	2.4%	5.9%	2.7%	0.6%	-2.1%	9.3%
XLY	-10.6%	-9.1%	12.7%	18.5%	-0.7%	0.2%	9.5%	3.5%	5.4%	-2.4%	6.7%
Total Return MODEL	-0.8%	-2.1%	0.6%	0.4%	5.4%	-0.8%	3.8%	0.3%	5.3%	-0.4%	6.5%
Total Return SPY	-8.2%	-10.7%	7.6%	9.9%	5.8%	-0.6%	7.5%	3.7%	3.1%	-1.9%	6.2%

Again in figure 9, we show the periodic table of price returns for the Select Directional Model's universe, the hypothetical total returns of the Select Directional Model and the S&P 500 ETF (SPY), and the total returns of SPY graphed against the relative performance of the Select Directional Model over SPY. The Select Directional Model's relative outperformance deteriorated once the market bottomed and sharply reversed. For the three months of March through May of 2009, the Select Directional Model's hypothetical return was 6.5% vs. 25.2% for the S&P 500 ETF.

Conclusion

In simulations, the Select Directional Model out-performed the S&P 500 in three out of four different market regimes. It is worth noting that Select Directional Model generated a 64% total return during its period of underperformance from October 2009 through August 2012. Looking at the ten year period ending August 31, 2012 (appendix 1), the model outperformed the S&P 500 ETF (11.6% vs. 6.5% on an annualized basis). Should the market continue its upward trend for the next ten years, the Select Directional Model should perform reasonably well as it will often hold a portfolio invested 100% in the strongest sectors of the stock market.

The overall results of our simulations lead us to believe that the Select Directional Model may earn favorable risk adjusted returns for investors when followed over a complete market cycle. The Select Directional Model's potential for disciplined and unemotional rotation into relatively safe assets in declining markets may provide investors with reduced volatility and a measure of downside protection (appendix 2).

Appendix 1 – Select Directional Model Simulated 10 Year Total Returns through 8/31/2012
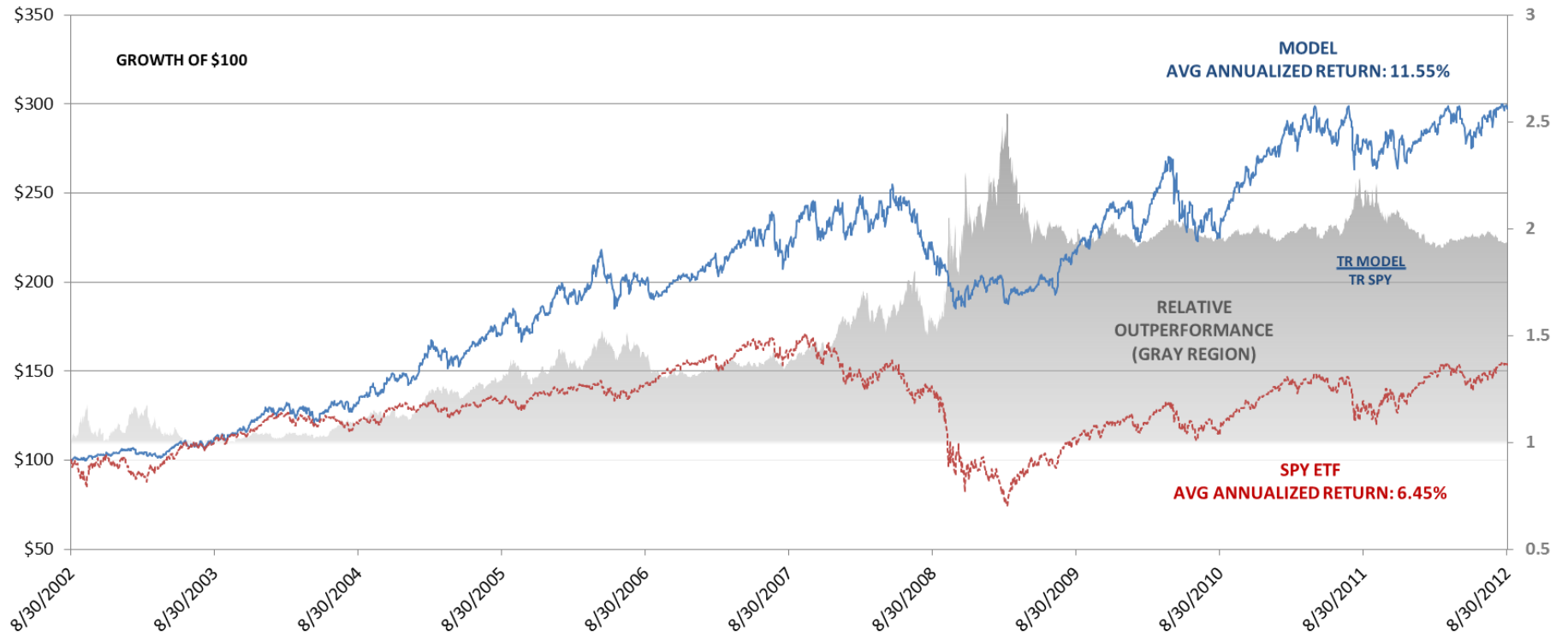
The Select Directional Model's relative hypothetical outperformance (defined by total return of the Model divided by total return of the S&P 500 ETF has held steady around 2 (right axis) for the last three years as indicated by the gray region.

		No. of Positions	Average Return %	S&P 500 Return %	Excess Return %	Min Return % No Slip	Max Return % No Slip	Standard Deviation of Returns
Average		3	0.9392	0.5246	0.4146	-2.2447	4.2555	3.4112
Up Markets	329	3	2.7356	3.2135	-0.4779	-0.2976	5.7821	3.1807
Down Markets	190	3	-2.1714	-4.1314	1.96	-5.6163	1.6119	3.8103

We back-tested the model, with different starting dates, going back 10 years. Portfolio123

conducted 519 back tests, each starting one week apart. We can see in the 190 four week periods when

the S&P 500 was negative, the Select Directional Model portfolio outperformed on average by 1.96%. The

Walk Forward back test does not assume slippage and commissions.