"The Trend is your Friend, Until the Bend at the End."

Richard Oehlberg 2011 Technical Musings

Topics

- How I use the Computer (The Good, the Bad and the Ugly)
- Introduction and a little fun
- The Market is not Normal (Statistically speaking Pun intended)
- How do YOU define risk?
 - "Risk" vs Volatility vs Risk of Loss
- Will the Best Moving Average Please Stand Up?
- Taking the vital signs of "The Market"
 - Bob Nurock's Elves (aka, th old "Wall Street Week" Elves)
 - Marty Zweig, "Winning On Wall Street"
 - Richard's tentative first steps
- SUMMARY

How I use the Computer (The Good, the Bad and the Ugly)

How I Use the Computer

- <u>Market Health</u>: Collect financial, economic & market data to determine the vital signs of the market.
- <u>Investment Options</u>: Track and technically analyze (things not readily available on the internet for free) investments and potential investments
- <u>Internet</u>:
 - Economic and Market News, and objective market analysis
 - Stock Market, Stock, Bond, Mutual Fund, ETF, Economic and other relevant data (including Morningstar, Valueline, Standard & Poors, FRED II, Yahoo Finance, Google Finance, etc.)
 - Account Trading
 - Stock Market Stock, Bond, Mutual Fund, ETF, Economic Research
 - Research Asset Allocation, Investment approaches Fundamental Analysis approaches, and Technical analysis approaches.
- Track Portfolio performance.
- <u>Numerical Experiments</u>

Strategy Evolution

- 1990 to 2002: Buy and Hold Mutual Funds; changes based on "research".
- 2002 to February 2009: Relative Strength of Retirement Plan Fidelity & Vanguard Funds.
 Sell Fund if not in top 40% of universe then Buy top Fund not owned. Own 12 Funds or less.
- 2009 to present: Own 12 entities or less.
 - 2009: Frustration with Mutual Fund Limitations
 - 2010: Unsuccessfully tried to switch from Mutual Fund to ETF Relative Strength Investing
 - 2011: Initiating version 2 of 2010 attempt

Working to Figure Out a Big Picture Approach

- Determine the Health of the Market
 - Low risk environment, or
 - High Risk environment
- Determine Asset Allocations and Market Exposure based on Market Risk
- Currently Developing and Testing 3 Investment Strategies
 - Limit total number of investments to 12
 - High Yield Bond/MMKT Strategy
 - Dividend/Equity Income Strategy: Low P/E Dividend Stock
 Screen (Don Cassidy BUY/SELL Approach)
 - Relative Strength of High Liquidity ETFs. Sell ETF if not in top 40% of universe tracked to Buy top ETF not owned. Avoid purchasing overlaps (e.g. VPE & XLE, VPU & XLU, etc.)

Introduction and a little fun

Since the Collective Group is Smarter than any One of Us, Let's Learn from one another.

Questions and Discussions are encouraged!

For Our Consideration

"He who blames others has a long way to go on his journey. He who blames himself is halfway there. He who blames no one has arrived."

– Chinese proverb

"There is more than one correct way."

- Richard Oehlberg

"Those who have knowledge don't predict. Those who predict don't have knowledge."



[&]quot;The Big Picture" Blog, August 19, 2011



Buy & Hold Diversification Works ... Until It Doesn't





The Buy & Holder's Worst Nightmare



Source: Standard & Poor's, First Call, Compustat, FactSet, J.P. Morgan Asset Management. (Data is up til 12/31/10 TBP 1/13/2011)

Have we been here before? (Chart dated 8/15/2011)



Source: The Big Picture Blog at www.ritholtz.com

The Market is not Normal (Statistically speaking – Pun intended)

A "Normal" or Gaussian Distribution

- Sometimes referred to as the "Bell Curve"
- Widely and almost exclusively used probability distribution in the analysis of the stock market and investing.



Source: Wikipedia 7/2009

Characteristics of a "Normal" Distribution

- Mathematical Symbols:
 - m (average or mean)
 - $-\sigma$ (Standard Deviation)
- EXCEL Functions:
 - AVERAGE(range of cells)
 - STDEV(range of cells)



- Any subset of values of a Normal distribution is also a normal distribution.
 - σ (Standard Deviation) of the entire set of data must be approximately equal in any subset of data

The Problem with Standard Deviation

- For a Normal distribution, the standard deviation derived from data subsets MUST approximately equal the standard deviation of the Data set.
- For the stock Market, the standard deviation of subsets will <u>not</u> equal the standard deviation of the data set. (There may be a fluke when this is not true, though I have yet to see this situation.)
- The Stock Market is not "Normal" (pun intended)
- This is why Bollinger Bands work.

The Market (S&P 500) is Not Normal (Statistically speaking – Pun intended)

Year	STDEV	YEAR	STDEV
2010	2.40%	2000	3.18%
2009	3.58%	1999	2.57%
2008	4.62%	1998	2.61%
2007	1.89%	1997	2.12%
2006	1.36%	1996	1.73%
2005	1.35%	1995	0.95%
2004	1.47%	1994	1.37%
2003	2.05%	1993	1.07%
2002	2.81%	1992	1.29%
2001	3.03%	1991	1.89%

The Market is not Normal (SPY) Ratio of Standard Deviation of Price Change for varying Number of Weeks



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How do YOU define risk?

Risk vs Volatility vs Risk of Loss

- Financial Community Risk Measures
 - Standard Deviation
 - Beta (Hard to calculate with a spreadsheet)
 - Sharpe Ratio
- One Volatility Measure is Standard Deviation
 - Volatility when the market is going up is good
 - Volatility when the market is going down is bad
 - Standard Deviation does not know the difference between up and down. Both are treated the same.
- Drawdown
 - How far (in Percent) you are below your portfolio's peak value or individually for a Mutual Fund, ETF, Stock, or other asset.
- Risk of Loss: Investors want to limit the possible loss of assets

Beta

- The Beta (β) of a stock or portfolio is a number describing the relation of its returns with those of the financial market as a whole.
- An asset has a Beta of zero if its returns change independently of the market's returns.
- A positive beta means an asset's returns follow the market's, that is both tend to be above or below their respective averages together.
- A negative beta means that an asset's returns move opposite the market's: one will tend to be above its average when the other is below.

Sharpe Ratio (SR)

Differential Return for period (yearly, weekly, etc.) = (Average Period Return – Period Risk Free Return)

SR* =<u>SQRT(# weeks in period)*(Avg. Weekly differential Return for period)</u> Standard Deviation of weekly Differential Return over period

* example with weekly data over period of 13 weeks or 52 weeks for a year

DEFINITIONS:

- Period = day(s), week(s), Month(s), or year(s)
- Risk Free Return = Treasury or Fed Funds or choice adjusted for length of period.
- •1 in 1000 "Quality" Mutual Fund if ...
 - Fund Sharpe Ratio is 0.75 or larger over 3, 5, and 10 years
 - Fund Sharpe Ratio minus Sharpe Ratio for S&P 500 is 0.30 or larger

Gerald Appel, "Opportunity Investing", 2006

Draw Down

- Draw Down is the percent the current value is below the maximum value of a portfolio, stock, ETF or Mutual Fund, etc.
- <u>Maximum Draw Down</u> is the maximum drawdown experienced over time.
- <u>Average Draw Down</u> is the Average of Draw Down over time.
- <u>Conditional Draw Down</u> is the draw down that occurs after a specified condition is met.

Will the Best Moving Average Please Stand Up?

Exploring Moving Averages

"There is no such thing as a perfect moving average", Martin Pring, "*Technical Analysis Explained*"

- 40 week SMA
- 40 week EMA (recommended in Martin Pring, "*Technical Analysis Explained*", 4th edition 2002)
- 42 WEEK EMA (Best EMA for US Stock market weekly data: RW Colby & TA Meyers in *"Encyclopedia of Technical market Indicators"*,1988)
- **45 Week SMA** (Best SMA for US Stock market weekly data: RW Colby & TA Meyers in *"Encyclopedia of Technical market Indicators"*, 1988)
- 65 week SMA
- 65 week EMA (recommended in Martin Pring, "*Technical Analysis Explained*", 4th edition 2002)
- Will compare moving average signals (in above & out below) to generate Equity Curves and Draw Down Curves.

SPY Moving Averages 1994 to Aug. 2011



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SPY with Interest



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SPY with Interest/MMF



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Comparison of SPY Switch Assumption on Maximum Drawdown

(Switch @ either Friday close or average of switch week close & following week close or w/2 week delay)

Moving Average	Switch @ Fri. Close	Switch @ Avg of Wkly Closes	Switch @ Avg of Wkly Closes w/2 Wk MA delay
Buy & Hold	54.6%	No Switches	
40 Wk SMA	32.2%	18.6%	16.0%
40 Wk EMA	21.0%	16.6%	16.0%
42 Wk EMA	21.5%	17.5%	16.6%
45 Wk SMA	21.0%	16.8%	17.3%
65 Wk SMA	21.0%	18.5%	18.5%
65 Wk EMA	18.0%	17.6%	18.5%

Comparison of SPY Switch Assumption on CAGR (Compound Annual Growth Rate) Return

(Switch @ either Friday close or average of switch week close & following week close or w/2 week delay)

Moving Average	Switch @ Fri.	Switch @ Ava of Wkly	Switch @ Avg of Wkly Closes w/2
	Close	Closes	Wk MA Lag
Buy & Hold	7.91%	No Switches	
40 Wk SMA	8.36%	7.95%	8.31%
40 Wk EMA	8.29%	8.50%	8.36%
42 Wk EMA	8.09%	8.14%	8.28%
45 Wk SMA	7.84%	8.15%	8.52%
65 Wk SMA	8.37%	9.60%	9.59%
65 Wk EMA	<u>9.64%</u>	10.13%	10.11%

Reducing Whipsaws

- Longer Moving Averages
- Using +/-Bands around moving averages
- Delay the moving average (use the moving average from n weeks ago to judge this week)
- Confirmation Indicators
 - FUNDX = 4 week ROC + 13 week ROC + 26 Week
 ROC (+ 39 week ROC) + 52 week ROC
 - Ratio (Relative Strength); e.g. (Stock, Fund or ETF) / (Bond Fund or ETF, MMKT Fund or 3 Month Treasury)
 - RSI (Relative Strength Index)

- Other

Where ROC = Rate of Change

SPY Timing System (Ref: AI Zmyslowski from AAII Summer Seminar 2011)



Not Out Soon Enough, or not getting back in soon enough. What to do?

- Try Shorter moving Averages?
 - 10 week SMA
 - 10 week EMA
 - 13 week SMA
 - 13 week EMA
 - 20 week SMA
 - 20Week EMA
- Compare moving average signals (in above & out below) to generate Equity Curves and Draw Down Curves.

Shorter Moving Averages



Equity Curves for Shorter Moving Averages



Shorter Moving Averages Drawdowns



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Taking the vital signs of "The Market"

Taking the Vital Signs of the Market Bob NUROCK's ELVES

- Bob Nurock's Elves (aka, the old "Wall Street Week" Elves)
- Andrew T. Williams, "The Elves of "Wall \$treet Week", PC World, Vol. 1, Number 3 (circa 1983)
- Data availability (7 to 10 components in 2005)
- Interesting, not clear how useful they are.

ELVES Signals & Equity Curve



Draw Down Comparison



Taking the Vital Signs of the Market Zweig - Davis

- Martin Zweig, "Winning on Wall Street", Warner Books, 1994
- Jim Davis 4% rule on Valueline Arithmetic (20%)
- 80% Fed/Interest Rate components
- Using S&P 500 Comparison
 - Zweig "Super Model"
 - BUY & HOLD

Zweig vs Buy & Hold



Draw Down Zweig vs Buy & Hold



Numerical Experiment #1: Weight of the Evidence Metric

- 40 components in 1990 up to 60 components today (function of data availability)
- 15 Price components (Moving Averages, Rate of Change)
- 11 Market Breath components (Advance-Decline, Up-Down Volume, 52 week Highs-Lows)
- 13 Sentiment components
- 11 monetary components
- 10 economic components

Numerical Experiment #1– Weight of the Evidence vs BUY & HOLD



Draw Down Comparison



Numerical Experiment #2: Keep it Simple & Straightforward (KISS) Metric

5 components

- •3 based on VIX moving averages
- •1 based on AAII Investor sentiment
- •1 based on Jim Davis' 4% Rule (found in Zweig's Book)

Numerical Experiment #2: KISS Metric



Draw Down Comparison



History of Signals: 1=IN, 0=OUT

Weight of Evidence (156 switches; Average of 7.5 switches/yr)



KISS (213 Switches; Average of 10.2 switches/year)



SUMMARY

Proposed Approach

Using market vital signs as a guide to your investing.

STRATEGY

- Determine the Health of the Market
 - Low risk environment, or
 - High Risk environment
- Determine Asset Allocation Plan
- Determine Market Exposure based on Market Risk
- Execute
- Track How You Are Doing
- Adjust Based on What You Learn

OBSERVATIONS

- Have a Pre-Nup for everything you BUY before you buy it. That is, define under what conditions (or at what price) you will sell.
- Remember that Discipline is key.

Blogs/Websites

- bonddad.blogspot.com (Market and Economy)
- <u>www.ritholtz.com</u> ("The Big Picture" Blog: Interesting stuff related to the market)
- <u>www.bloomberg.com/news/</u> (Financial & other news)
- finance.yahoo.com (Best source of historical stock, mutual fund, and ETF data)
- <u>www.google.com/finance</u> (Google Docs spreadsheets can use non-delayed minute by minute market data from this site)