Perspective: Continuous Strategy Evolution

March 22, 2019

Markets Continue Strong Rebound

In late December immediately after FED Chairman Jerome Powell softened his position of continuing interest rate hikes, the markets rebounded strongly. On January 20th, StormGuard-Armor+ gave the nod to exit the safe harbor positions selected by its integrated Bear Market Strategies. Since the December 24th low, the S&P500 has rebounded an impressive 19.7%. Friday's selloff was triggered by the emergence of an inverted yield curve suggesting investors have less confidence in the longer-term economic outlook than they do today sparking investors to take some of their profits off the table. The market typically pauses just below its prior high before pushing through to new highs.

S&P500 Market Index - 5 Years

StormGuard-Armor+ Indication

Some subscribers have commented that SG-A+ seems to have gotten stuck at 0.02 on January 20th and then last week became stuck at 0.05. This is a characteristic behavior of Fuzzy Logic systems, such as SG-Armor, which evaluates 14 conditions that are a combination of both logical and analog mathematics that must arrive at a logical conclusion (in or out) and determine a single value to plot on the chart. The decision for an early-exit from StormGuard also results in the displayed value being held at 0.02 until the early-exit state is terminated by any one of three conditions. Last week one of those conditions occurred when SG-A+ was forced positive by a separate exit test that requires at least two of SG-A's main components to have gone positive with the third one rising rapidly. This condition forces the value of SG-A+ to a value of 0.05 until the third component also goes positive, or one of the three components reverses itself and heads lower. Getting stuck at 0.05 is simply a confirmation of that second exit condition.

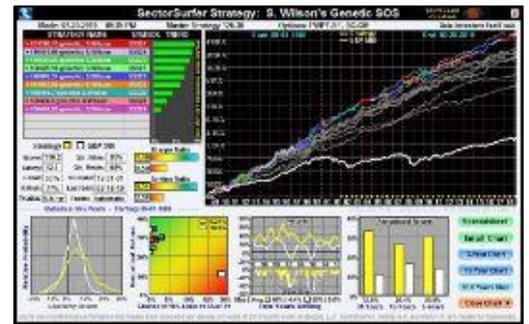**Introducing Stewart Wilson: Our AI Science Advisor**

We are pleased to introduce Stewart Wilson as SumGrowth Strategies' AI Science Advisor. Stewart received his Ph.D. in electrical engineering from the Massachusetts Institute of Technology (MIT). His research work at the Polaroid Corporation and the Rowland Institute for Science led him to the development of practically useful, biologically-inspired systems and machine learning architectures. In 1998 he founded the research and consultancy company Prediction Dynamics. Since 1999 he has been an adjunct professor at the University of Illinois at Urbana-Champaign, IL. Stewart's research and numerous professional papers have focused on Artificial Intelligence, Learning Classifier Systems.

In April of 2012, Stewart discovered SectorSurfer and found a compelling new hobby. In late 2015 Stewart approached us to collaborate on an experiment to employ a genetic algorithm to select Fidelity sector funds for use in SectorSurfer Strategies. Within a year, proof of concept was established and the evolution of high-performance strategies became a reality. Stewart's experimental genetic algorithm for selecting a set of 12 Fidelity sector funds as members of a SectorSurfer Strategy was first reported in our January 2017 Newsletter. This impressive Strategy-of-Strategies (chart right) is composed of nine underlying Fidelity Sector Strategies developed by Stewart's experimental genetic algorithm in late 2016. When the company began the development of its Merlyn.AI genetic algorithm technology in 2018, Stewart was invited to accept a position as our AI Science Advisor.

Continuous Strategy Evolution

The animated chart (right, click to enlarge) illustrates the cumulative value of the evolutionary improvements made to SectorSurfer's algorithms prior to Merlyn.AI's introduction.

Performance requires attention to details, and clearly, there are many details that matter. The Strategy used in this illustration is quite straight forward in its construction: It includes a broad set of sector and market index ETFs for the algorithm to select from. The evolutionary steps illustrated by the chart are detailed below:

Stewart Wilson, Ph.D.
Our AI Science Advisor

Stewart Wilson's Genetic SOS

Continuous Strategy Evolution
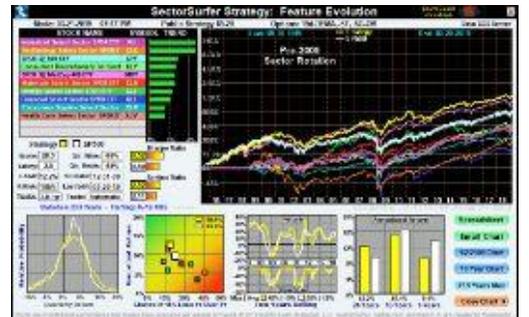
1. Sector rotation only. No bear market protection. (pre-2009)

2. Add the original StormGuard: Moves to $CASH during bear markets (June-2010)

3. Use the improved StormGuard-AQR: Its Asymmetric-Quick-Response algorithm responds faster after the typical sharp "v" bottom of a market crash. (July-2013)

4. Further employ FWPT (Forward-Walk Progressive Tuning) to remove hindsight bias in strategy tuning. The momentum algorithm walks through data as "out of sample data" to eliminate pre-tuning in the pops and pre-tuning out the drops (Oct-2013)

5. Employ StormGuard-Armor (moving to $CASH) when it determines the stock market is no longer safe based on three separate measures of the market enabling a better exit and return without whipsaw. (Mar-2016)

6. Employ StormGuard-Armor (moving to TLT, a 20yr treasury ETF) during bear markets (Apr-2016)

7. Employ StormGuard-Armor (moving to Bear Market Strategy BMS-4) which allows a separate Strategy to be invoked during bear markets to better select between bonds, treasuries and other safe harbor funds (Sept-2016)

Today, Merlyn.AI Genetic Algorithms don't replace anything, they build on top of everything. Merlyn.AI Genetic Algorithms are the most advanced evolutionary step in our technology development. If history is any indication of our character, you can count on more advancements to come. Stay tuned!

Surf Long and Prosper,

Scott Juds
President & Chief SectorSurfer
SumGrowth Strategies, LLC
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🔗 SectorSurfer   ▶ S.S. Intro.   🔗 AlphaDroid   ▶ A.D. Intro.   🔗 Merlyn.AI   ▶ Merlyn Intro.