



How to Protect and Grow Your Portfolio (Made Easy)

Relative Strength
+
Systematic Trend Identification
=
Market Beating, Absolute Returns

Robert W. Colby, CMT
Chief Investment Strategist

William K. Anderson
Managing Partner



Robert W. Colby Asset Management, Inc., founded 2009

Robert W. Colby, CMT, Chief Investment Officer

- 45 years on Wall Street.
- Consultant to institutional investors and traders.
- Adjunct professor at New York University and New York Institute of Finance.
- Proprietary trader for Cowan and Schonfeld Group.
- Systems developer, quantitative analyst, technical analyst, fundamental analyst.
- Author of ***The Encyclopedia of Technical Market Indicators***, Second Edition 2003 and First Edition 1988.

William K. Anderson, CEO and Managing Partner

- 26 years of experience in financial planning and business management
- Responsible for the daily operations of the firm, including the management of client accounts, customer service, and compliance.
- Certification in Financial Planning from New York University.
- M.B.A. from the University of North Carolina at Greensboro.
- B.S. Degree in Industrial Engineering from the University of Tennessee.



How to Protect and Grow Your Portfolio

(Made Easy)

By

Robert W. Colby, CMT

Robert W. Colby Asset Management

The Relentless Pursuit of Higher Returns



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Purpose

- To demonstrate easy ways to improve investment returns and lower risk that are simple to understand and implement.
- For illustration purposes only. Our actual investing decisions are based on our analysis of many more variables using many more systems.
- We do not recommend that you attempt to apply this method alone without professional assistance.
- Nothing herein is “investment advice”.



The Problem

Too many investment accounts:

- Suffer **sub-par returns** because they...
- Are both **over-diversified** and **too heavily weighted** to U.S. stocks.
- Are **passively** managed or **unmanaged**.
- Are structured to merely mirror the price indexes—but **underperform** the indexes **after fees**.
- **Fail to adapt** to changing conditions.
- **Fail to use any kind of Risk Management**, and so...
- Suffer **large losses** when the indexes have big declines.
- And worst of all, are **driven by human emotions**, which cause investors to buy at market tops and sell at market bottoms.



The Solution: An Objective, Systematic Approach

- Our research shows that investors would be better served by a **flexible, rules-based approach** based on time-tested methods that leave no room for guesswork and emotional reactions.
- **Objective rules** can be developed to maximize Reward/Risk probabilities.
- Quantified rules can be **tested** using an unbiased, scientific method.



We want a decision system that

- is precisely defined,
- does not require guesswork,
- removes uncertainty,
- is understandable and makes sense,
- has been tested thoroughly,
- has stood the test of time over many decades,
- performed well in up, down and sideways markets,
- and shows strong Reward relative to Risk



Research Methods

There are hundreds of well-known decision rules available for testing.

We have tested them all, and some perform much better than others.

Starting out, the simpler the method the better, because it is very important that we totally understand our method.

We always can add complexity later.



It doesn't get any more simple than using moving averages to identify trend.

Moving averages systems

- are totally clear, unbiased, and objective,
- require no judgment, guesswork, or sophisticated analysis,
- are easy to interpret,
- make implementation of a strategy simple and quick, and
- have stood the test of time.



We can apply Data Mining techniques to vast amounts of historical data to find moving averages and decision rules that would have worked best, maximizing Reward/Risk ratios, *in the past*.

Of course, there can be no assurance that methods that would have worked in the past will work in the future. Nevertheless, simulated past performance is a reasonable place to start.

Let's look at a simple system that would have been reasonably effective for more than a century.



What is a Simple Moving Average?

- A Simple Moving Average is the average price (arithmetic mean) over a specific period.
- The most popular moving averages are the 50-day and 200-day simple moving averages.
- These two are popular for a good reason: they have served investors and traders well for more than 100 years.



Favorable Reward Relative to Risk

- Moving Average Crossover Strategies have substantially **outperformed** Buy-and-Hold while taking **much less risk**.
- The system I am about to show you significantly outperformed many other moving averages crossover strategies over 112.51 years.



Computation is “simple”

- To calculate a 50-day simple moving average, add up all the closing prices over the past 50 trading days, then divide by 50.
- To calculate a 200-day simple moving average, add up all the closing prices over the past 200 trading days, then divide by 200.
- These are very easy to calculate on a computer, and they are widely available on many websites.



Enter Long: System Decision Rules

Buy Long when ***all*** 3 conditions apply:

- Close price > 50 DSMA, and
- Close price > 200 DSMA, and
- 50 DSMA > 200 DSMA

DSMA is the *n*-day simple moving average



Exit Long: System Decision Rules

Sell Long when ***any*** of these
3 conditions applies:

- Close price $<$ 50 DSMA, or
- Close price $<$ 200 DSMA, or
- 50 DSMA $<$ 200 DSMA

DSMA is the n -day simple moving
average



Enter Short: System Decision Rules

Sell Short when ***all*** 3 conditions apply:

- Close price $<$ 50 DSMA, and
- Close price $<$ 200 DSMA, and
- 50 DSMA $<$ 200 DSMA

DSMA is the n -day simple moving average



Exit Short: System Decision Rules

Buy to Cover Short when ***any*** of these 3 conditions applies:

- Close price $>$ 50 DSMA, or
- Close price $>$ 200 DSMA, or
- 50 DSMA $>$ 200 DSMA

DSMA is the n -day simple moving average



Example

The dark **blue** line is the daily closing price of the **SPDR S&P 500 ETF (SPY, NYSEArca)**.

The **green** line is the **50-day simple moving average**.

The **red** line is the **200-day simple moving average**.





When the 50 and 200 DSMAs cross, it is **MAJOR** signal.

When **green 50** crosses above **red 200**, it **signals** upward (**bullish**) pressure on price—so, increase stock positions to grow capital.

When **green 50** crosses below **red 200**, it **signals** downward (**bearish**) pressure on price—so, reduce stock positions to preserve capital.





Beware of the Danger Zone!

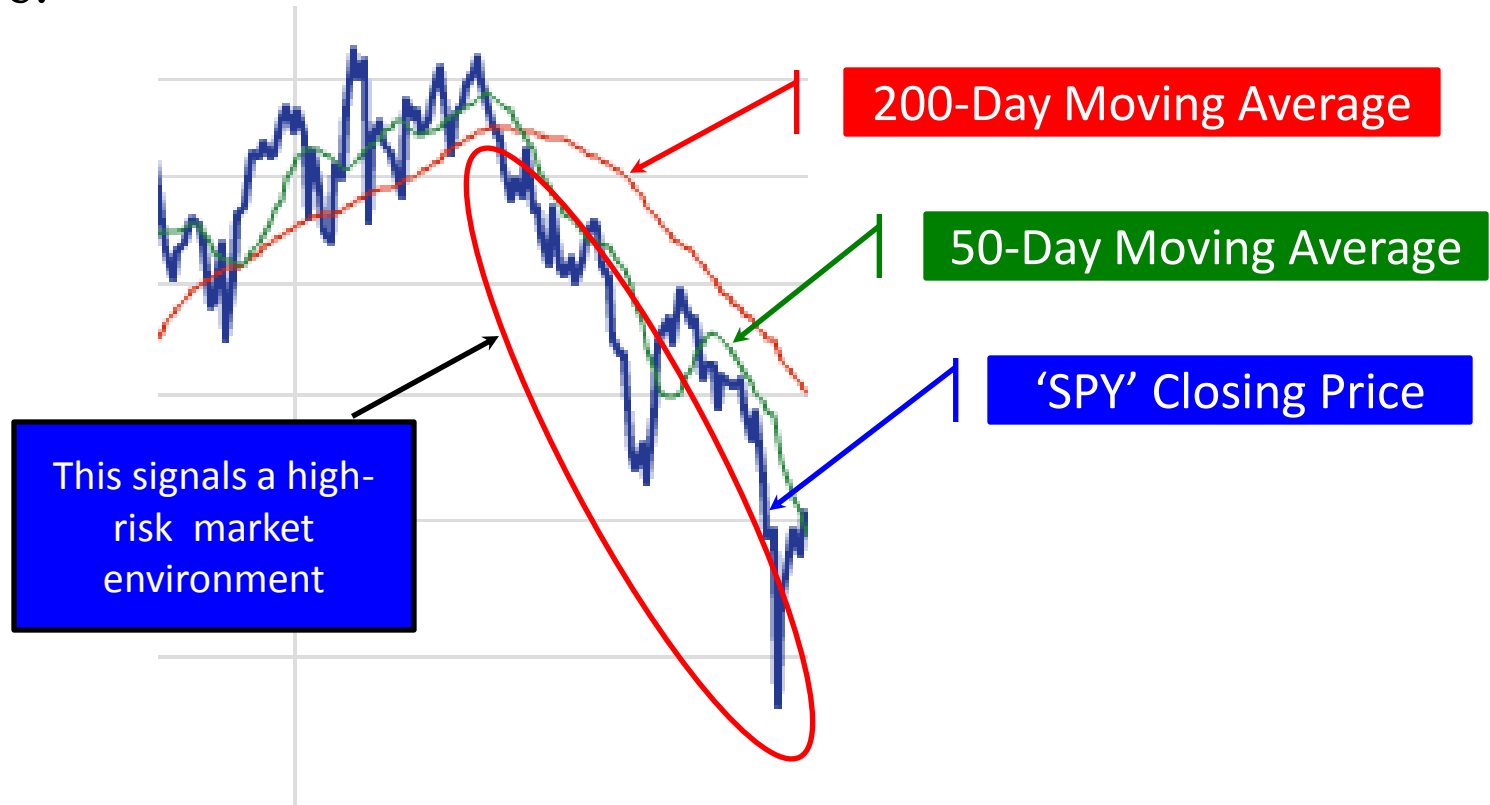
This chart shows that during the last two extended bear markets, following major market tops in years 2000 and 2007, the **green 50** was below the **red 200** AND the **daily closing price of the SPY** was below **BOTH** of these moving averages much of the time, correctly signaling periods of extreme high risk.





Zoom in View

When the **green 50** crossed below the **red 200** AND the **blue Close Price** was below both the **green 50** and the **red 200**, it would have been prudent to at least reduce stock market exposure.





Results of Strategy Back Testing

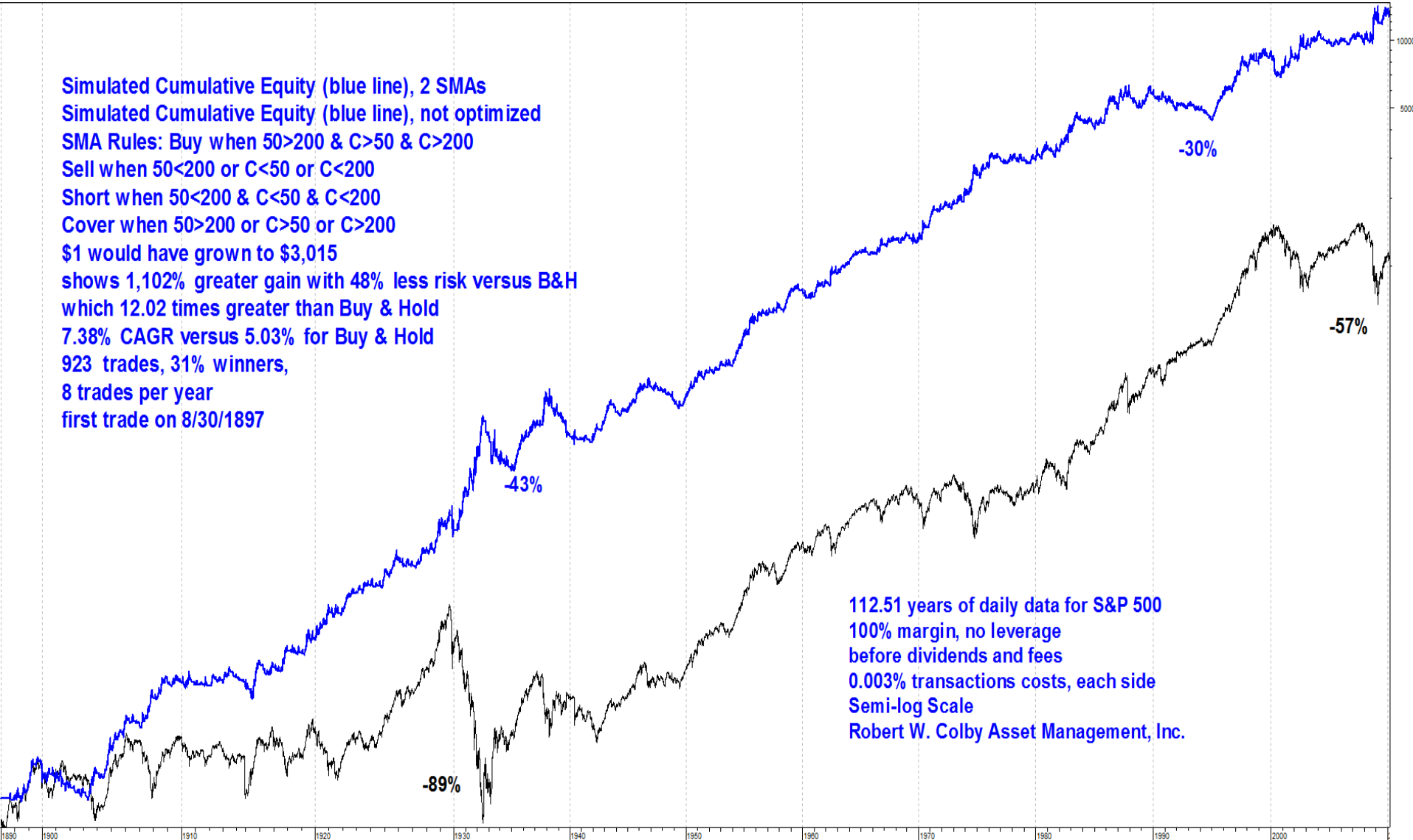
- Our computer simulations show that this method **beat Buy-and-Hold by 1,102%** while taking **48% less risk** when tested against 112.51 years of actual market data.
- Both **long and short** trades would have been profitable.
- Every method has some weaknesses, however. This one requires some trading, 8 trades a year on average over the past 112.51 years. Worse, 69% of these trades would have resulted in unprofitable **whipsaws**.

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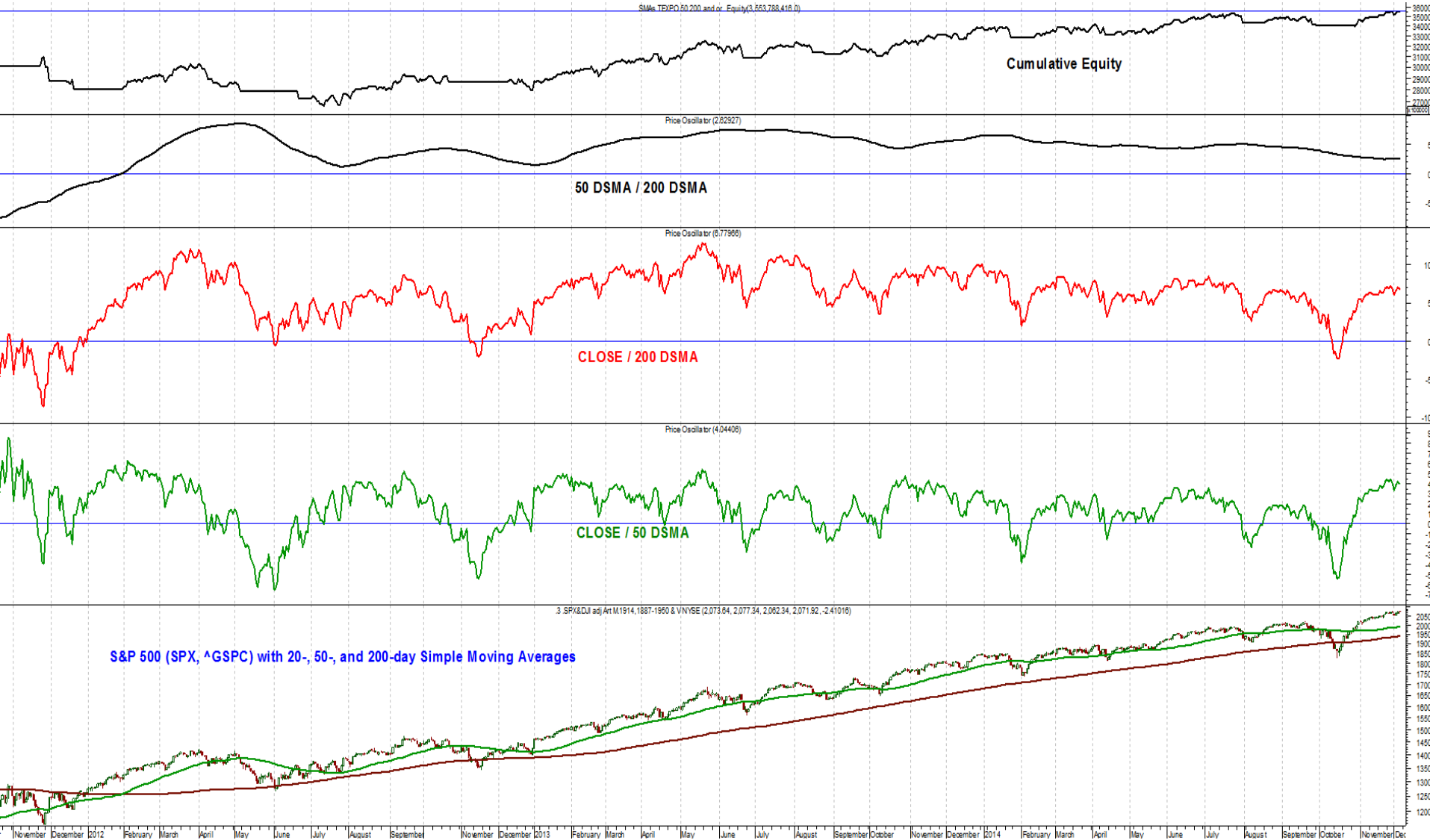
Simulated Cumulative Equity (blue line), 2 SMAs
Simulated Cumulative Equity (blue line), not optimized
SMA Rules: Buy when $50 > 200$ & $C > 50$ & $C > 200$
Sell when $50 < 200$ or $C < 50$ or $C < 200$
Short when $50 < 200$ & $C < 50$ & $C < 200$
Cover when $50 > 200$ or $C > 50$ or $C > 200$
\$1 would have grown to \$3,015
shows 1,102% greater gain with 48% less risk versus B&H
which 12.02 times greater than Buy & Hold
7.38% CAGR versus 5.03% for Buy & Hold
923 trades, 31% winners,
8 trades per year
first trade on 8/30/1897



112.51 years of daily data for S&P 500
100% margin, no leverage
before dividends and fees
0.003% transactions costs, each side
Semi-log Scale
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Conclusions

- Simple methods of technical analysis can be shown to improve the performance of investment portfolios.
- Signals generated by price and moving average relationships improved both Reward and Risk results in historical simulation.
- Any analysis method that may have worked in the past cannot be guaranteed to work in the future, however. Market conditions and behavior can change suddenly without notice.
- Real world market analysis is complex and needs to consider many variables. Professional management using multiple analysis methods is highly recommended.



Markets do ***not*** move in random walks.

Rather, markets move in ***trends*** that we can use to our advantage.

We can mine actual market data to find rules that would have worked in the past.

Recommendation: select a precisely-defined, systematic method that leaves no room for uncertainty, guesswork or hesitation.



5 Key Questions About Money Management

1. Are investment choices limited and inflexible?
2. Are portfolios too heavily weighted to the U.S. stock market?
3. Is there effective management beyond the most basic asset allocation for diversification?
4. Is it merely a fully invested at all times passive clone of an index?
5. Is there a genuine attempt to capitalize on major market trends, to avoid major market declines and to take full advantage of major market advances?