

OUTPERFORMING THE BROAD MARKET: AN APPLICATION OF CAN SLIM STRATEGY

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ABSTRACT

Investor's Business Daily has advocated the CAN SLIM investment strategy since the 1980s. Unlike traditional long term, buy and hold portfolio strategies, CAN SLIM advocates an active management style. This paper examines the use of a simplified version to test for effective and profitable investment possibilities. The results indicate that an average investor with little or no analytical capabilities can outperform a buy and hold strategy in the S&P 500 Index. The simplified system outperformed the S&P 500 Index by .82% per month for the period 2001 through 2012.

Keywords: CAN SLIM, investment strategy, technical analysis, portfolio management

INTRODUCTION

This paper provides evidence that an average investor, with little-no analytical capabilities or previous investing experience, can use a simple investing system to outperform a buy and hold strategy with the S&P 500 index. Tested over 11 years, this system achieved greater reward per unit of risk when compared to the S&P 500; developed a 232% total return on investment and outperformed the market by randomly selecting up to 10 portfolio positions each month.

CAN SLIM Investing

CAN SLIM was created by William J. O'Neil (WJO). This strategy is based on his analysis of 500 of the biggest stock market winners from 1953 to 1993. CAN SLIM is explained in detail in his book, How to Buy Stocks (2002). Although his system is created for the average investor, it is extremely complex in nature when regarding the analytical capabilities of recognizing chart patterns and understanding cyclical markets. Academic interest in CAN SLIM started within a decade of the founding of Investor's Business Daily. Olson, Nelson, Witt and Mossman (1998) tested the CAN SLIM system on S&P 500 stocks over the period 1984 through 1992. Their research found market adjusted abnormal monthly returns of 1.81% on stocks and 3.18% return on an arbitrage portfolio.

Programming interests in the CAN SLIM model have also become popular. Suh, Li and Gao (2000) use artificial intelligence to create a program that analyzes the Cup and Handle chart formation. This formation is a trigger for a CAN SLIM purchase. Deboeck (2000) also uses the CAN SLIM methodology as a basis for extending the selection process of stocks to the use of “Self-organizing Value Maps”. These articles seem more interested in programming, as they do not conduct portfolio construction and return analysis.

Achelis (1999) includes an explanation of CAN SLIM in the comprehensive volume of “Technical Analysis from A to Z. Gillette (2005) applies CAN SLIM to equities listed on the German stock market and determines that CAN SLIM does not have the same effectiveness in the German market. The author did streamline the analysis by dropping N (New), L (Leader), and I (Institutional Ownership) from the model. Perhaps one or more of those variables are crucial to the success of the model. Beyoglu and Ivanov (2008) combine CAN SLIM selection with various technical analysis signals. Their research indicates that CAN SLIM combined with a Moving Average Crossover System (MACS) holds good potential.

Schadler and Cotton (2008) analyze the AAIL (American Association of Individual Investors) CAN SLIM stock screener to test its profitability and effective. AAIL provide a variety of stock screeners and the CAN SLIM screener is among the top 10 screeners in all categories. The CAN SLIM screener portfolio returned an average return of 30.86% from 1998 through 2005. This compares favorably to the associated best-fit index (S&P Smallcap 600) which realized an annualized return of 9.49% during the same time span. This is significant because the analysis covers several stock market turns.

Finally, similar to the study printed in this paper; Cheh, Kim, and Lee (2011) test a simplified version of the CAN SLIM system. Their study uses two conditions, both related to increasing earnings per share (EPS). Their results outperformed the Wilshire 5000 over the time period tested.

The seven parts of the mnemonic are as follows:

C - Current earnings. Per share, current earnings should be up to 25%. Additionally, if earnings are accelerating in recent quarters, this is a positive prognostic sign.

A - Annual earnings, which should be up 25% or more in each of the last three years. Annual returns on equity should be 17% or more

N - New product or service, which refers to the idea that a company should have a new basic idea that fuels the earnings growth seen in the first two parts of the mnemonic. This product is what allows the stock to emerge from a proper chart pattern of its past earnings to allow it to continue to grow and achieve a new high for pricing. A notable example of this is Apple Computer's iPod.

S - Supply and demand. An index of a stock's demand can be seen by the trading volume of the stock, particularly during price increases.

L - Leader or laggard? O'Neil suggests buying "the leading stock in a leading industry". This somewhat qualitative measurement can be more objectively measured by the Relative Price Strength Rating (RPSR) of the stock, an index designed to measure the price of stock over the past 12 months in comparison to the rest of the market based on the S&P 500 or the TSE 300 over a set period of time.

I - Institutional sponsorship - which refers to the ownership of the stock by mutual funds, particularly in recent quarters. A quantitative measure here is the Accumulation/Distribution Rating, which is a gauge of mutual fund activity in a particular stock.

M - Market indexes, particularly the Dow Jones, S&P 500, and NASDAQ. During the time of investment, O'Neil prefers investing during times of definite uptrends of these three indices, as three out of four stocks tend to follow the general market pattern.

Source: **Wikipedia**

The acronym CAN SLIM is simplified in to both quantitative and qualitative investing criteria for the initial test in this paper. The CAN SLIM system is based primarily on growth principles and involves making buy decisions in only confirmed bull markets. The system further advises moving towards conserving capital during correction phases and bear markets. CAN SLIM suggests purchasing companies with new products or services, new management or anything new and entrepreneurial that could spark growth. In addition to these above rules, the system highlights that only the top stocks in leading market sectors should be considered for purchasing.

CAN SLIM investing relies heavily on recognizing quarterly and yearly earnings growth and incorporates purchasing companies with a low number of outstanding shares. The reason behind this strategy is that low market volume moves these companies a great deal. O'Neil notes that it takes a lot less market volume to move them great amounts; meaning an investor could lose just as fast as they could win. Thus, the system incorporates an important 3:1 profit taking policy. No matter at what point a stock is purchased, if it ever falls 7-8% below that purchase price, an investor should immediately cut their losses. On the upside however, CAN SLIM suggests systematically taking profits at 20%-25% as most companies retreat and build new basis after reaching this level.

CAN SLIM CREDIBILITY

The CAN SLIM Investing System returned a compound growth rate of 1521.7% versus the S&P 500's gain of 54.92% from 1998 through December 31, 2007, according to the American Association of Individual Investors (AAII).

OPBM STRATEGY:

Due to the somewhat subjective and highly complex nature of the CAN SLIM system, the Out Perform the Broad Market (OPBM) system is modified to three simple rules for initially back testing the investment strategy against simply buying and holding the S&P 500. The purpose of simplifying the rules is to test the possibility that an investor can out produce the S&P 500 without relying on their own analytical capability. If the simplified OPBM system is successful, it would allow investors to achieve returns above the S&P 500 without spending the time and developing the needed market expertise required to successfully implement the traditional CAN SLIM system.

For simplicity, the buy decisions are based on only the following three criteria from CAN SLIM:

- 1. Annual Earnings Growth, 5 Year Average greater than 20%**
- 2. Current Quarterly Earnings Growth, greater than 25%**
- 3. Stock Price greater than \$10**

To produce purely mechanical results, the buy decisions are based on 10 randomly selected positions from the results of a free stock screen at [stockscreen123.com](http://www.stockscreen123.com) (<http://www.stockscreen123.com>). The results of these rules are further analyzed through back testing over a period of 11 years with monthly rebalancing. The rules entered for back testing at [stockscreen123.com](http://www.stockscreen123.com) are as follows:

<u>Rules</u>	
EPS Growth Last Q > Q 1Y Ago by 20%	
EPS Growth Last 5 Years > 25%	
Stock Price > \$10	
<u>Backtest</u>	
Transaction Type	Long
Price	Average of days high/low
Slippage	0.50%
Max Pos %	10%
Start Date - End Date	3/31/2001 - 3/26/2012
Rebalance Frequency	Four Weeks
Universe	All Stocks
Benchmark	S&P 500
Max No. Stocks	10
Ranking	No ranking / randomize

Based on this screen, there are no fancy holding period rules, no 8% stop losses and no 20% gains being taken. Purely and simply, running a screen each and every month – randomly

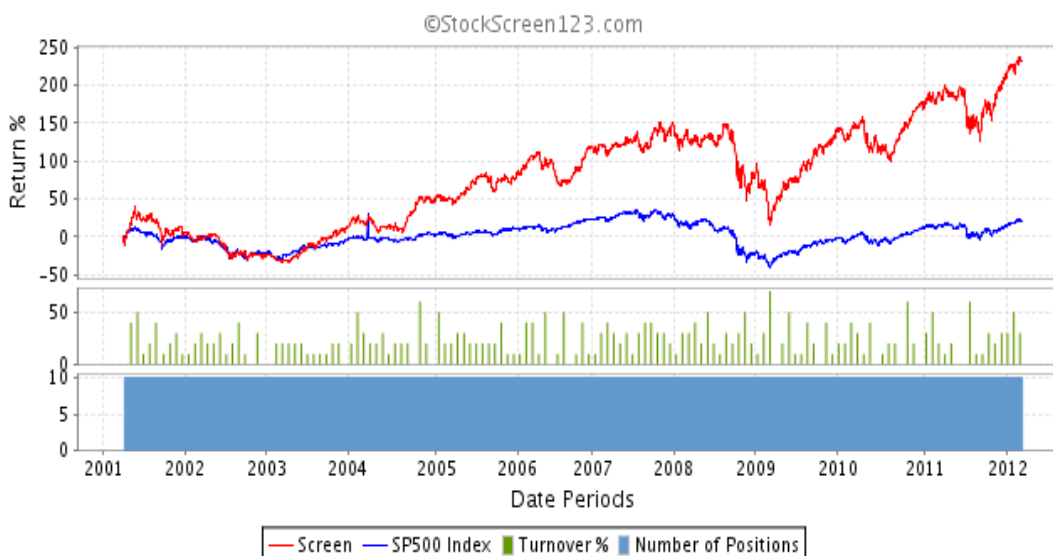
selection 10 positions to hold, dropping whichever positions don't pass the screen in the months to come and randomly selecting the replacements.

RESULTS

Over the 11 year period, the OPBM (Out Perform the Broad Market) strategy was exposed to 88 up markets and 56 down markets. 10 positions were held at all times. The average return for the model portfolio was **1.07%** each month, while the S&P 500 was **0.26%**.

Results		Positions	Strategy %	S&P 500	Excess
		Held	Return	% return	Return
Average		10	1.07	0.26	0.82
Up Markets	88	10	4.24	3.20	1.04
Down Markets	56	10	(3.90)	(4.37)	0.46

The 2001-2012 holding period returns can be seen in the chart below:



The results of the OPBM strategy outperform the S&P 500. As noted in the screen results a \$100 investment in the strategy would be worth \$332.03 at the end of 11 years. That same \$100 investment would be worth only \$121.13 investing in the S&P 500.

ANALYSIS OF RISK

In an effort to show that OPBM screening data is superior to that of the S&P 500 per unit of risk: mean returns, standard deviation of returns and Sharpe ratios of the two strategies are compared and analyzed.

Mean and Standard Deviation:		
	<u>OPBM Portfolio</u>	<u>S&P500</u>
Mean Return (Monthly)	1.07	0.26
St Dev	6.76	4.89

The higher monthly average return of the OPBM portfolio is accompanied by a higher standard deviation. To determine whether or not this portfolio truly outperforms the S&P 500, a Sharpe ratio is calculated to better understand how much reward is earned per unit of risk.

The Sharpe ratio calculates what an investor could earn with a risk-free investing tool such as the 10-year U.S. Treasury bond and subtracts this yield from the average yield the investor would expect from their portfolio. For the purpose of this analysis the risk free rate is converted to a monthly basis.

Sharpe Ratio:		
	<u>Portfolio</u>	<u>S&P500</u>
Mean Return (Monthly)	1.07	0.26
St Dev	6.76	4.89
Risk Free Rate (Monthly)	<u>1/6</u>	<u>1/6</u>
Sharpe Ratio	0.13	0.02

(Note: that a higher Sharpe ratio indicates better risk adjusted performance)

STATISTICAL TESTING

This section uses hypothesis testing to determine whether the returns generated by the OPBM strategy are significantly greater than the returns generated by the S&P 500 over the same time frame.

Hypothesis Test

A hypothesis test is performed on the sample return data over the life of the back test to determine whether the mean returns of the model portfolio are significantly greater than that of the S&P 500. If the returns from the OPBM model portfolio are greater than the S&P 500 over the back tested time frame, we will be able to reject the null hypothesis that the mean monthly return from the model portfolio is equal to .26. .26 represents the mean monthly return from the S&P 500 during the 11 year timeframe. The results of this test are listed in the table below:

[ST_DataSet1_3]	
<i>Hypothesis Test (One-Sample)</i>	Data Set #1
Sample Size	144
Sample Mean	1.073
Sample Std Dev	6.763
Hypothesized Mean	0.26
Alternative Hypothesis	> 0.26
Standard Error of Mean	0.564
Degrees of Freedom	143
t-Test Statistic	1.4419
p-Value	0.0758
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The results above indicate that the null hypothesis can be rejected at a 10% level of significance, indicating that the mean monthly return for the OPBM model portfolio differs significantly from the mean monthly return of the S&P 500. However, the null hypothesis cannot be rejected at the 5% and 1% levels of significance.

CONCLUSION

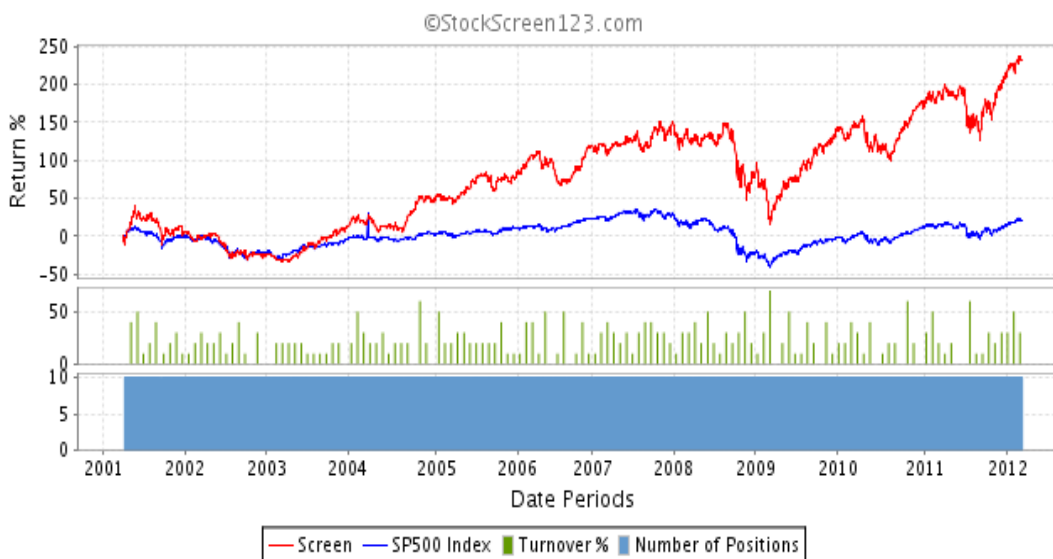
This paper demonstrates that it is possible for an investor to generate larger than average returns with an actively managed portfolio system opposed to a buy and hold method with the S&P 500. Through completely automating all investing criteria and randomizing the selection process, the investor can utilize this modified CAN SLIM strategy and out-produce the market on a monthly basis. The system developed in this paper can allow investors to achieve returns above that of the S&P 500 without having to make the complicated and subjective judgments necessary in the traditional CAN SLIM system. This simplified system outperformed the S&P 500 Index by .82% per month for the 2001 to 2012 time frame.

The examined strategy can be used to make buy decision using only the following three criteria:

1. Annual Earnings Growth, 5 Year Average greater than 20%

2. Current Quarterly Earnings Growth, greater than 25%
3. Stock Price greater than \$10

Results:



Sharpe Ratio (Risk/Reward): **0.13 OPBM Screen** vs. **0.02 S&P 500**

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