Journal of Business and Economics, ISSN 2155-7950, USA
September 2021, Volume 12, No. 9, pp. 937-943
DOI: 10.15341/jbe(2155-7950)/09.12.2021/002

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Live Out of Sample Testing of CAN SLIM Stock Selection Strategy

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Abstract: This paper shows a live paper traded interpretation of the CAN SLIM system based on the stock selection strategy in O'Neil 1988. The strategy outperforms the market by 20% (S&P 500), 9% (Nasdaq) and 17% (Dow Jones) for the holding period of July 2014-February 2017. We stopped tracking the portfolios in 2017. Current results would show 4/5 stocks posting greater than 100% gains. The purpose of the study is to live test the system for possible adaptation with real money. The portfolio held positions that first passed a fundamental stock screen using the methodology outlined in O'Neil (1988) and were then selected by proximity to technical buy points. We analyze the equity curves, methodology for stock screeners using free and readily implementable tools in the paper. The CAN SLIM system is advertised that investors may outperform a broad stock market index without relying heavily on their analytic ability and while holding only five stocks at a time. The purpose is to let the winners win and cut the losers fast. The results have favorable implications for individuals who want to manage their portfolios including student-managed investment funds.

Key words: fundamental analysis; stock screener; stock selection strategy; can slim

JEL codes: G10, G40, G50

1. Introduction

This paper shows the CAN SLIM system live tested on a stock screener and paper portfolio over the years 2014-2017. Find some literature on Live Stock Systems. It shows it beats the market over one, three, and five-year time frame. It may be a useful basis for a student investment fund or individual investors. It is used with freely available data on finviz.com for stock screeners and was implemented in free portfolio tracking software via Barchart.com and Google Portfolios. A similar study could be continued by tracking positions with live capital.

The main premise of the CAN SLIM system is that individual investors can beat a broad index by picking portfolios of only five stocks and then managing them. The purpose of this study is to mimic this in a forward tested environment.

There has been a rise in algorithmic trading post-1990 according to Angel, Harris, and Spatt (2015). Previous studies of CAN SLIM in 1999-2017 era use automated trading to execute the orders (Lutey et al., 2018). Live automated trading can be implemented through Application Program Interfaces (API).

This paper seeks to implement the CAN SLIM system through stock screeners. By focusing on Sales Growth, Earnings Growth, Institutional Ownership, and Return on Equity. To our knowledge, this is the first paper to

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forward test the CAN SLIM system.

Stock screeners have been studied previously by North and Stevens (2015). They test a variety of screeners from the American Association of Individual Investors (AAII). They find that 30% of the screeners outperform the benchmark inclusive of transaction costs and factor models.

The markets are typically agreed among academics to be strong-form efficient. This says that investors may not be able to earn a return over the benchmark inclusive of transaction costs (Brealey & Myers, 2000).

Investor's Business Daily who employs the CAN SLIM methodology for stock picking has a variety of ranking systems that pick stocks based on their fundamental criteria. Olson, Nelson, Witt and Mossman (1998) test directly the profitability of investment trading strategies from Investor's Business Daily. Stocks selected have an excess return of 1.8% (monthly) from buying S&P 500 stocks. They note that a portion of the abnormal return may be a reward for identifying stocks with short-run sustainable price momentum. Their results suggest that the findings can be indicative of market inefficiency.

Soros (1995) has discussed the markets to follow a feedback loop between information and market prices called reflexivity. His findings cast doubt on the market efficiency theory (EMT) which is most widely accepted in academia.

The overperformance of Soros from 1982-1994 (Soros, 1994) and value investors such as Warren Buffet, Benjamin Graham and others (Berkshire Hathaway Annual Report 1998) suggest that markets may not always be efficient or as efficient as academic literature suggests.

The quality of the U.S. markets is deemed to be very healthy in the present state. Trade transaction costs are low and market depth and execution speeds are high. The high presence of institutional investors is an added sign of market quality. Intraday volatility is also below the pre-algorithmic trading of the 1990s (Angel, Harris & Spatt, 2015).

The CAN SLIM system was first discussed in a book by Bill O'Neill (1988) titled "How to Make Money in Stocks, A Winning System in Good Times or Bad". The premise of the book is based on hand-collected data by Bill O'Neill over the majority of the market era 1950-1980. Bill noted the characteristics of winning stocks. Among those characteristics was that EPS in the most recent quarter to be up 70% over the previous quarter. Additional criteria include high Return on Equity, high institutional sponsorship of stock, high levels of sales growth in the most recent quarter and high three (or five years) averages of sales and EPS growth.

Most notably, academics have been at odds over the usefulness and practicality of market efficiency studies. Lo, Mamaysky and Wang (2000) cast doubt on the efficient market hypothesis by using technical analysis to forecast future returns.

Finance is an interesting academic study but is first a profession. The profession closely mimics that of finance theory but is commonly at odds with the theory of efficient markets (Calandro, 2004).

Target date funds and glide paths indicate a trend towards focusing on meeting retirement goals, rather than optimizing asset only portfolios (Singh, 2016). These funds seek to take on more risk early in the lifecycle of an investor.

The CAN SLIM system is sponsored by Investor's Business Daily and seeks to have investors manage their portfolios of stocks by selecting up to 5 positions and rebalancing every 8-13 weeks. The goal is for investors to perform well in both up and down markets by de investing capital when markets turn down. The system notes that investors have a variety of investment horizons and time frames. This is most consistent with the fractal market hypothesis (West, 2017).

2. Methodology

We test the CAN SLIM system based on the following criteria. (High levels of EPS growth in the most recent quarter, high levels of EPS growth on a five-year average, high levels of sales growth in the most recent quarter, high levels of sales growth in a five-year average, high levels of return on equity and high levels of institutional sponsorship).

We form a portfolio with 5 positions (which is the recommended number of positions from O'Neill (1988) on $20,000 capital. The portfolio is rebalanced by inspection every month and whenever positions need to be turned over.

The stocks are screened from the entire stock universe, of around 7,000 stocks on a given day. We use the Russell 3000 as a benchmark for an "all cap" index. The screen rules are shown below. They seek to mimic the CAN SLIM Criteria outlined in O'Neil (1988).

Rule	Allocation
Sales Growth Past Five Years	> 15%
EPS Growth Q/Q	> 25%
Sales Growth Q/Q	> 15%
EPS Growth Past 5 Years	> 25%
Institutional Ownership	> 10%
Return on Equity	> 15%

2.1 Preliminary Screen

The resulting screen returns 8 companies out of 7547 stocks. The screener today (11/17/2018) would narrow the list from the 7575 stocks to 10. These results are similar to overall periods.

Money management rules are followed loosely according to the method in Bill O'Neil. The loosely followed is part of the paper trading benefit where emotions are not tied to the outcome. Stops are cut rigorously at 7%-8% however there maybe a couple of misses where the loss was not cut until 12%. The profits are taken when a stock has grown 20%-100% and stagnant for 8 weeks or more. Also, capital is freed when a stock has not dropped 7%-8% and has not grown 20%-100% in 8 to 13 weeks. This is followed loosely as some stocks are held longer and gains are not taken.

The methodology may be implemented on any stock screening tool including CRSP and any portfolio management program such as Microsoft Excel, R, Stata, or web-based tools such as Market Watch, Barchart.com, or Yahoo finance. So long as entry and exit positions along with commission are recorded. At the time of implementation, the commission was $3.5 per entry and exit. Towards culmination, the entry and exit increased to $10. Google finance has since cut their portfolios but the system with transactions may be picked up in another portfolio tracking tool. The stocks selected are CAN SLIM passing stocks near buy points. The cup with handle entry is extended to the Ichimoku cloud (Linton, 2010). Similar patterns outlined in Pring are Flag Pattern, Double bottom. Exits are to lock in profits or cut losses. Technical exits are not used. They are only used to confirm entry on narrowing stocks on a fundamental screen.

The problem with paper-based portfolios (and benefit) is that there is no real emotion tied to the outcome. It is easy to forget about positions and update them later. This is a double-edged sword as investors aren't as drawn to the daily performance of their stocks. They do not care if one day their stock is surging, or down 5-6%. They

can let it go more easily. The problem with this is the portfolio is more loosely tracked and may inflate the real gains if an investor had their own money backed. A real-money portfolio using this system would give a real accurate result of its implementation but would be subjective based on the ability of the individual tracking it. A computerized method would mimic any individual's ability to maintain a portfolio so long as they had access to the software. This is an aim for future works. This paper is pruned for research that is practical and not only beneficial to academics. This is a new criterion for AACSB. This paper will show the results of the previously implemented screen and the results of a Google finance portfolio. It shows the results as beating the market until summer 2017. The results show the portfolios at the culmination below. It is blown up on the second page because it is hard to see otherwise.

This provides the further benefit of the CAN SLIM system when fully forward tested by a human (not computer) and interpreting the model is freely available stock screeners. The portfolio is currently managed in excel.

Our initial positions are shown below.

Symbol	Name	Action	Quantity	Entry Date	Entry Price	Exit Date	Exit Price
GOOG	Alphabet	Buy	4.00	07/16/14	585.60		
V	Visa Inc	Buy	11.00	07/16/14	222.49	07/25/14	212.55
SBUX	Starbucks	Buy	30.00	07/16/14	78.82		
FB	Facebook	Buy	35.00	07/16/14	67.60		
SWKS	Skyworks	Buy	50.00	07/16/14	48.02		
SAVE	Spirit	Buy	35.00	07/22/14	68.02	03/06/17	51.87

One Year Results:

Symbol	Name	Last Price	Cost Basis	Market Value	Gain %	Overall Return
GOOG	Alphabet	508.08	2,345.90	2,032.32	-13.37%	-13.37%
V	Visa Inc	254.95				-4.75%
SBUX	Starbucks	80.61	2,418.30	2,418.30	2.12%	2.12%
FB	Facebook	75.18	2,631.30	2,631.30	11.05%	11.05%
SWKS	Skyworks	73.85	3,692.50	3,692.50	53.57%	53.57%
SAVE	Spirit	70.94	2,482.90	2,482.90	4.14%	4.14%
Portfolio Value			$11,872.20	$16,298.18	11.67%	8.86%

Three Year Results:

Symbol	Name	Last Price	Cost Basis	Market Value	Gain %	Overall Return
GOOG	Alphabet	828.64	2,345.90	3,314.56	41.29%	41.29%
V	Visa Inc	88.43				-4.75%
SBUX	Starbucks	57.48	2,418.30	3,448.80	45.64%	45.64%
FB	Facebook	135.44	2,631.30	4,740.40	100.06%	100.06%
SWKS	Skyworks	94.70	3,692.50	4,735.00	96.92%	96.92%
SAVE	Spirit	51.92	2,482.90	1,817.20	-23.78%	-23.78%
Portfolio Value			$11,872.20	$21,268.12	52.09%	42.36%

Five Year Results:

Symbol	Name	Last Price	Cost Basis	Market Value	Gain %	Overall Return
GOOG	Alphabet	1,420.34	2,345.90	5,681.36	142.54%	142.54%
V	Visa Inc	88.43				-4.75%
SBUX	Starbucks	83.41	2,418.30	2,502.30	5.82%	5.82%
FB	Facebook	201.36	2,631.30	7,047.60	197.87%	197.87%
SWKS	Skyworks	108.76	3,692.50	5,438.00	126.49%	126.49%
SAVE	Spirit	51.92	2,482.90	1,817.20	-23.78%	-23.78%
Portfolio Value			$11,872.20	$23,103.26	93.84%	62.63%

It is possible the market underwent a natural shuffle where the top growth stocks received less investor attention and their money shifted in to previously lower-performing stocks (as Bill O'Neil suggests happens). Since the main winners have not increased much since the summer of 2017 but the market has. A simple stock screener and performance analysis of previously poorly performing stocks (from 2014-2017) and comparing their performance to the top performance over the same period would show this. That the poor performers from 2014-2017 outperformed the strong performers from 2017-2018. This happens when the market is overrun and due for a correction. Investor's business daily has tools to track this. The returns are updated and appear to be around 24-25% given more than a year and a half without maintaining the portfolio and the current positions from 2017. The market has gone up a bit so it is possible there is a rotation from selling winners and buying losers. O'Neil talks about this in his book and it has been observed in practice were the stocks that lead the market over the current bull period start to sell off or grow stagnant when the market has become overrun and the money flows into the previous losers. It can be seen easily by following the market regularly and looking at the stocks that are leading it. If the system were followed it would account for this as the previous winners would be too far run from their technical buy points. The stocks available to buy would be the previous losers that are now getting some attention from investors. It would be anticipated the model would fare well with the market as it did so for the three years Google finance was available.

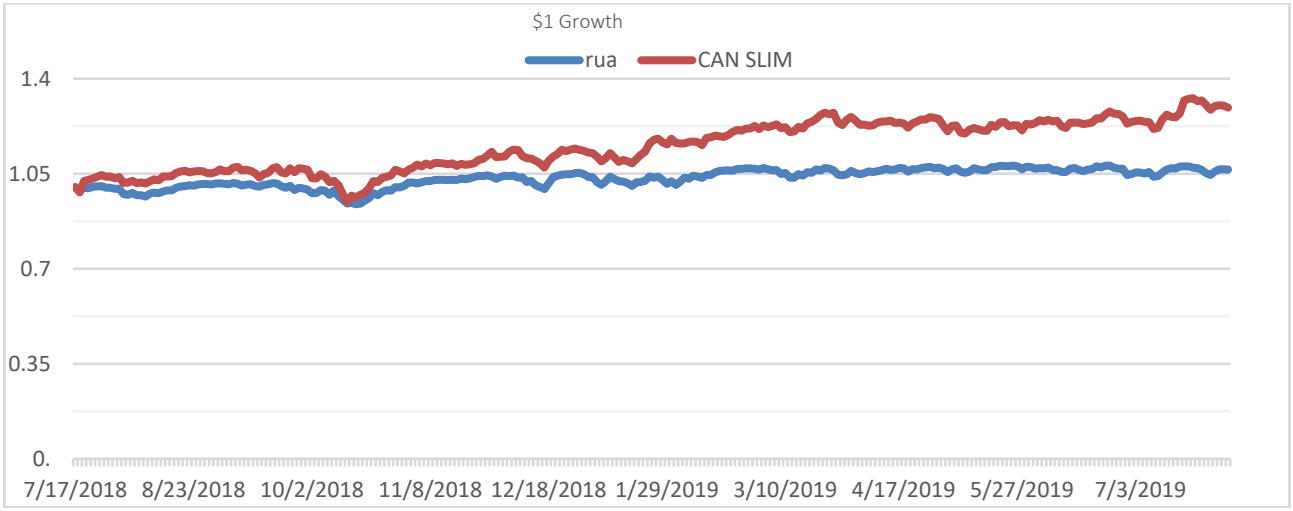


Figure 1 Performance from 2014-2015

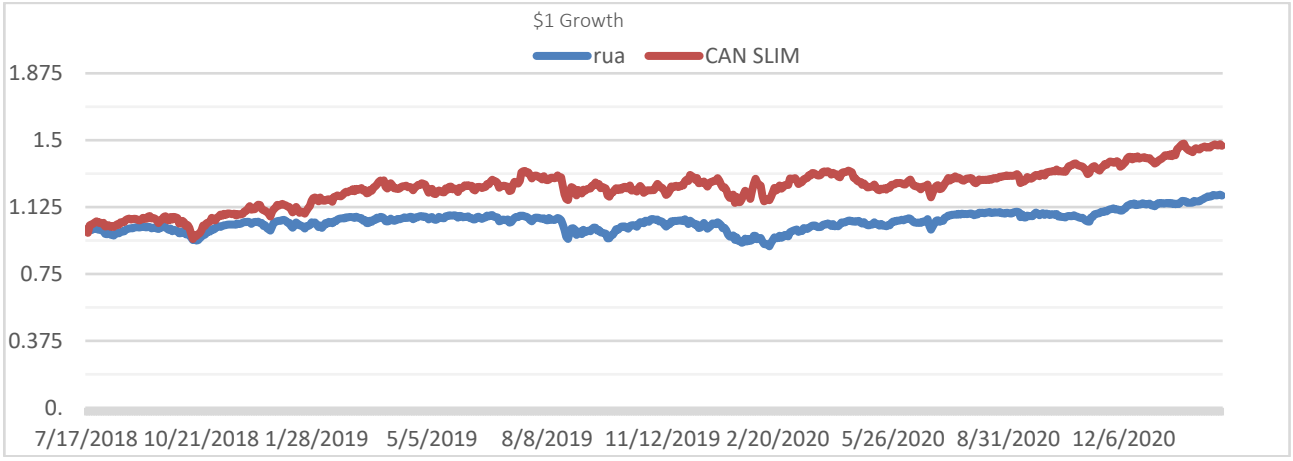
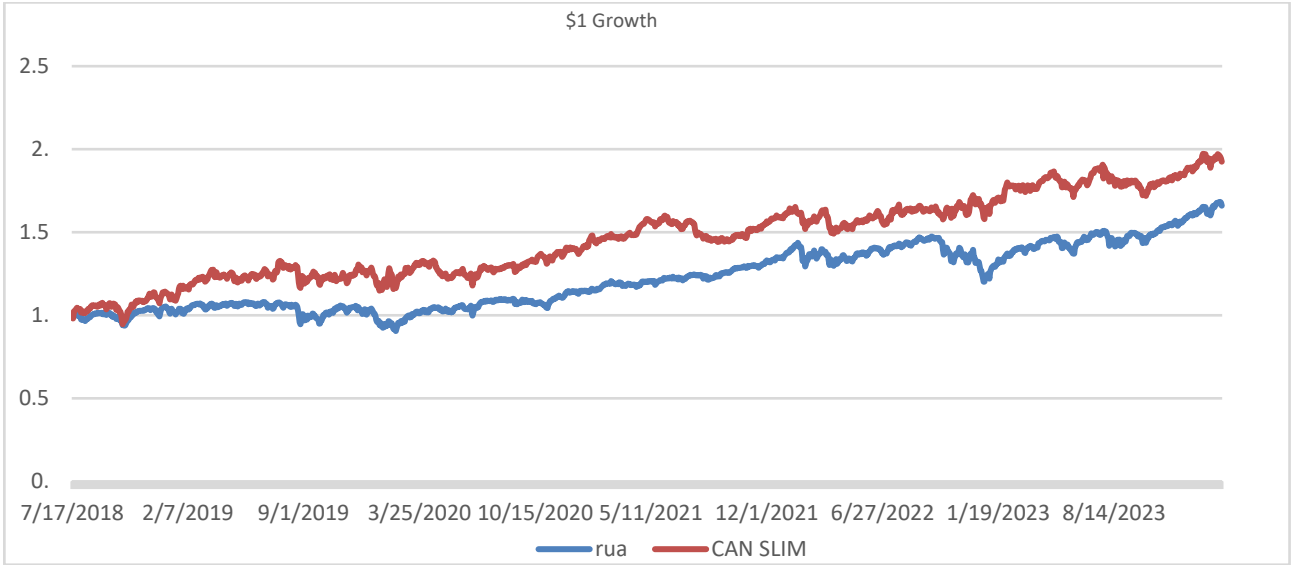


Figure 2 Performance From 2014-2017

We stopped tracking the portfolios in 2017 when Google Finance cut its portfolio software. The positions were inputted into a Barchart.com portfolio.

Valued from our current holdings, 4/5 stocks have gained in excess of 100% (Google, 146.65%, Facebook, 227.20%, and Skyworks 156.04%). Or worst-performing stock (Starbucks, is up 17.05%).

If held until today the total return of the portfolio would be 92%, the average daily return 0.05% and the standard deviation (daily) is 0.92%. The growth of $1 investment in this (until 2/24/2020) is shown below.



The purpose is to document the viability of the CAN SLIM system for live real money trading. It provides a framework and guideline for implementing fundamental based criteria into stock screeners and picking stocks based on freely available tools.

4. Conclusions and Future Work

The portfolio makes 35% from 2014 June to 2017 January and adds another 7% by February 2017. The rules may be followed in conjunction with Technical Analysis. Lutey, Maroney (Forthcoming) provide a guide for a

novel set up of visual nonlinear patterns as in Lo, Mamysky, Wang (2000). Further analysis may be used by including the Ichimoku Cloud (Lutey, Rayome. Forthcoming). Other technical indicators may be used in conjunction with the CAN SLIM system. Neely et al. (2013) provide a guide on technical indicators forecasting equity risk premium which contains information of macro fundamentals. Other papers provide a theory for technical analysis and performance of technical analysis (Author, Year, Author, Year, Author, Year). These papers provide justification for the use of technicals. Currently, there are few papers that use technical analysis and fundamental analysis together which is consistent with literature that investors traditionally belong to two camps (fundamental or technical), see Linton (2010), Neely et al. (2010), and Lo Mamysky Wang (2000). This paper provides notes of can slim passing stocks that are user-selected and the reasoning for selection. For Ichimoku criteria see Linton (2010) or Lutey, Rayome (forthcoming). For visual nonlinear patterns see Lutey, Maroney (forthcoming). This paper provides a basis for individual investors, student investment funds, practitioners, academics, and current can slim users who wish to add another tool to their box.

Free Tools for Portfolios. Barchart. Finviz. Google Finance Previously. Bought positions following can slim screener above and technical buy points in literature. Held positions until finished school/graduated. Followed the loss cutting rule at 7-8%. Unless I forgot to check it. Shows how important it is to watch these with a keen eye. And how subjective it can be. Portfolio rules and technical buy points are hard to program which is shown in my dissertation. Was beating the market and has lagged the market over the past two years. I it looks like what happens is that previous winners get exhausted and the market moves into previous losers. This is highlighted in O'Neil 1988. The leaders that took the market up when the market gets tired they stop outperforming and the money moves into the previous losers. This is a casualty of not taking profits and moving the money into new stocks that pass the screen. These winners that are overextended would meet the CAN SLIM criteria but not that technical buy point criteria while the losers would meet both.

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