An Interactive Qualifying Project Report:

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By

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Abstract

A real-time stock market simulation was performed using two trading strategies, Robo Advisors, and the CAN SLIM Method. Real matrices were used in the simulation. Use of metrics enables the researcher in future financial investments and ventures by providing him with the knowledge and skillset to trade confidently. Each strategy started with $100,000 investment in its portfolio. The CAN SLIM Method had a $19,011.51 portfolio gain, with trade swings up to 17% weekly. While the Robo-Advisor had a $3,587.60 portfolio gain with swings up to 3% weekly. The results of the simulation showed that the CAN SLIM Method had a greater financial gain through large swings during the six-week period. The Robo-Advisors show minimal gain and smaller swings, indicating potential for sustainable long-term growth. The project and simulation proved very valuable for the participant's future financial goals.

Acknowledgements

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1. Introduction

1.1 Goals and Scope

Stock market investment options have increased in the past decade with the advancement of technology. For example, Robo-Advisors, a new automated type of investing, have been utilized by millions of investors. Furthermore, older investing strategies, such as the CAN SLIM method are still commonly used. The goal of this IQP is to understand these strategies, the differences between them, how to use them, and conduct a six-week simulation comparing the strategies. The simulation will be conducted comparing the two main investment strategies, Robo-Advisors, and CAN SLIM Method. I am simulating a 100,000$ investment in each strategy. The results of the simulation will be documented weekly. After concluding the six-week simulation, there will be an analysis comparing and choosing a "winner" out of the two strategies. First, I will provide a brief history of the stock market, along with the history of Robo-Advising and the CAN SLIM Method. Furthermore, a general basis of other popular investment strategies will also be included. The simulation will help me learn different investment strategies, be able to educate others of the strategies. It will let me learn from my mistakes during the simulation and be able to analyze which investment strategy should be chosen based on the results of the simulation.

1.2 Stock Market History

The journey from Europe to the West Indies by ship in the 1600's was a dangerous one. The owners of the ships dealt with obstacles, pirates, shipwreck and other conditions that would leave them susceptible to risk. To combat this risk, the owners would look for

investors to buy a portion of the ship, and in turn would share a portion of the profits if/when the ship returned. Therefore, the risks for owners were mitigated as they would only be responsible for the losses of a portion of the ship, in case of misfortune. The East India Company found opportunity to capitalize on this process. They created a platform for investors and shipowners to find each other. The consensus was that this type of trade was powerful. Soon it became a part of many governmental procedures and corporations. The East India Company merged and became the Dutch East India Trading Company (DETC) and the DETC created the Amsterdam Stock Exchange, the first stock exchange in the world (Hur, 2016).

1.2.1 Major Stock Exchanges

The stock market has blossomed since the Amsterdam Stock Exchange. In the U.S, the first stock market exchange was established in Philadelphia in 1791, as it was the center of domestic and foreign trade. The first stock exchange in New York was created in 1792 and was formally named in 1817 as the New York Stock Exchange (NYSE) (Siegel, 2005). These early adaptions of the Stock Exchange were unregulated and relied on the word of the brokers and traders. After the Great Depression and the stock market crash of 1929, The Security and Exchange commission (SEC) created regulations and licenses to ensure a crash of this magnitude would not occur again. This paved the way to the modern stock exchanges that we use today. Some of the more popular ones include the NYSE, Pacific Stock Exchange (PSE), Philadelphia Stock Exchange (PHLX) and the Chicago Board of Trade (CBOT). All these stocks exchanges operate on the basic principle that the ship owners and investors adopted in 1600's. The modern exchanges apply the same principle to securities, bonds, commodities, futures,

options and investors can trade instantly at the tip of their fingers with new technology (Forbes, 2019).

1.2.2 Major Indexes.

The Major Indexes are tools used to indicate the health of the stock market on a given day. Understanding what these indexes are, how they are made up, and how they are interpreted will prove useful to any investor.

Dow Jones

The most popular index is the DOW. Figure 1.1 shows the performance of the DOW from 1979 to 2019. It is the index that is used most frequently to measure the strength of investments. The DOW is the collection of the thirty largest stocks in the United States. The DOW has changed 52 times since its inception by adding and removing companies. A big swing one way or another in the DOW is a gauge of the direction of the economy. However, the DOW should not be used as the only indicator as it only consists of large-cap stocks. Small-cap stocks, bonds, international stocks can all do well despite a drop in the DOW. The fluctuations in DOW are frequent and can move hundreds of points at a time, which indicates a big swing. For example, the DOW over Christmas 2018 swung 600 points down and 1000 points up in the span of two days. These swings can be daunting and confusing to understand. However, research shows that although larger swings are more common in modern trading, they are not something to generally be afraid of. The larger modern swings match the percentage swings of the years in the past. In other words, a 46-point drop in 1986 would be equal to a 718-point drop in modern trading. Both account for a 3 percent drop. As an investor it is important to understand these

swings and not be afraid of the magnitude, rather focus on the percentage. However, there are swings of 1000 points, these are significant, and something to keep in account for, as a 1000 point swing is a 5 percent drop or increase (Ganti, 2019).

Figure 1.1 Dow Jones Performance from 1979 to 2019 (Google)

S&P 500

The S&P 500 consists of 500 companies that meet certain criteria such as being a U.S company and being publicly backed by at least 50 percent of ownership. It was founded on March 4, 1957. The S&P 500 also consists of several markets including technology, infrastructure, agriculture, medical, etc. It has a larger sample size of 500 compared to 30 with the Dow Jones, as well as a more diverse group of stocks. Therefore, many consider the S&P 500 to be a better indicator of how the economy is doing. Financial institutions agree with this sentiment as there are over 9.9 Trillion US Dollars benchmarked against the index. Financial planners and brokers will use the Index to compare their individual performance with S&P 500 as shown below in Figure 1.2 (Murphy, 2019).

Figure 1.2 S&P 500 Performance from 1979 to 2019 (Google)

1.3 Robo Advisor History

Betterment was the first Robo-Advisor. It was founded in 2008. The use of automated investments was not a new technology, wealth managers used it frequently. However, they were the only ones that could purchase this software at a hefty price. It was not available to the average investor. Betterment changed the status Quo in 2008. Robo-Advisors have developed significantly over the past eleven years. Robo-Advisors must be registered investment agents and are monitored by the Securities and Exchange Commission. Table 1.1 is a chart of popular Robo-Advisors and their total asset management (Frankenfield, 2018).

Company	Country	Founded	AUM (millions of US$)	Portfolio composition
The Vanguard Group	U.S.	1975	83,000	ETF
Charles Schwab Corporation	U.S.	1971	19,400	ETF
Betterment	U.S.	2008	9,058	ETF
Wealthfront	U.S.	2008	6,763	ETF

Table 1.1 Robo Advisors Assets of October 2017 (Forbes)

1.4 CAN SLIM Method History

The CAN SLIM Method was developed by William J. O'Neil in the 1950's. The Method was discovered by completing rigorous work analyzing the best performing stocks with every metric available to him. The work was outstanding as it was completed in absence of today's technologies. O'Neil found that no matter what the stock is, they shared seven traits that made them successful or failures. These traits will be discussed further in the report. O'Neil used his CAN SLIM method to become the youngest person at the time to get a seat at the New York Stock Exchange. Investors seeing the success the method brought to portfolios, started adopting O'Neil's methodology in their own portfolios. The CAN SLIM method still uses the fundamental seven traits O'Neil described and has been in use for decades (Bajkowski, 2016).

2. Trade Strategies

2.1 Popular Trade Strategies 2019

This chapter will cover some of the most commonly used trade strategies in the investing world today. It will give a brief history of each trading strategy as well as key features of them. The key strategies to understand are the Robotic-Advisors and the CAN SLIM trading as they will be used in the simulation of this report.

2.2 Robotic Advisors

Robotic Advisors are a type of financial advisors that will select stocks or provide financial advice using computer generated algorithms. The algorithms are generated using software developed by each individual robotic advising company. Robotic advising is relatively new, and the results from Robotic advising thus far have been promising. Some of the top robotic advising companies include Fidelity, Betterment and Wealth Front. After doing some research, I have decided to use Betterment and WealthFront for the simulation. Robotic Advisors tend to have minimal fees as there is very limited human interaction. The customer can also customize settings such as risk, preference of investment, etc.- which will alter the algorithm the Robotic Advisors use on the customers assets (Frankenfield, 2018).

2.3 Indexing/Mutual Funds

Index funds will follow specific rules depending on your investment interests. Often these rules include popular indexes such as the S&P 500 and the Dow Jones Industrial average. Index Funds are generally a passively growing account, but they can also be

invested in actively. Index funds can be customized by size, value and profitability. Index funds tend to be low-risk and long-term investments (Chen, Indexing, 2017).

2.4 CAN SLIM

CAN SLIM is an extremely curated method into determining when a stock will rise. CAN SLIM is an acronym which each letter pertaining a rule that must be met to buy a stock. For example, "C" stands for "Current Big or Accelerating Quarterly Earnings and Sales per share". "I" stands for "Institutional Sponsorship" etc. The theory is that if these rules are met, the chance of a stock rising is very likely. CAN SLIM has been a popular method used by investors for years. The rules of the CAN SLIM method will be explained, and its methods will be tested through a simulation of stocks that follow these rules (Bajkowski, 2016).

2.5 Contrarian Investing

Contrarian Investing is finding companies in a time of economic downturn and buying many shares of that company in the hope of an economic return. It is the very essence of "buy low, sell high." The trickiness to this investing is understanding why a company's stock is down and understanding if it will be able to rise. This includes understanding the industry the company is in, the durability of the company, the management of the company, the company's long-term value, etc. A failed attempt at contrarian investing can lead to a disaster. This is also a very active form of investing that involves dedication and commitment to pull-off (Myers, 2018).

2.6 Trend Trading

Trend Trading is a technique that follows a certain trend of a market price, rather than the assets or strengths of a company. The basic trends in stocks is that it follows an up and down cycle, with a general increase over time. With trend following, active investors try to predict when the up cycle of the general trend will occur. Many investors will just leave the money in over a long period of time, in hopes of accepting a potential short-term loss for a long-term gain. The down-side of trend trading is that it often involves little research into the basic strengths of a stock or company. Trends can and have been wrong and less experienced investors could invest in companies with little to no research. This in turn may put their money at a large risk (Chen, Trend Trading, 2018).

2.7 401K

401K investments are a retirement investment that can only be used after a certain age. These investments typically have a higher return because of that reason. Benefits of 401k include a match from employees, and tax benefits. 401k investing is strategy that has many long-term benefits, the earlier the foundation is built for this type of investment, the gains will grow incrementally in the future (Kagan, 2019).

Out of all the investment methods mentioned above, I will be discussing and testing the Robotic Advisors and the CAN SLIM method in this simulation.

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3. ROBOTIC ADVISORS

This chapter will go in depth into what Robo-Advising is, the features of Robo-Advising, and how to use Robo-Advising. The chapter will give context to readers unfamiliar with the relatively new technology, as well as show why Robo-Advising is increasing in popularity over the years. The chapter will give insight to what to expect when starting and creating an account with Robo-Advisors. Finally, I will conduct a simulation mirroring the average results of Robo-Advisors platforms such as WealthFront and Betterment.

3.1 Robo-Advisor Background

3.1.1 What is a Robo-Advisor

Robo-Advisors are automated investing systems that use algorithms and advanced software to manage your investment portfolio. The Robo-Advisors require limited human interaction because of these technologies. A Robo-Advising platform gives individuals the ability to provide information about their financial status and future goals in-order to create an individual plan that the Robo-Advisor will suggest.

They can complete complex tasks such as tax-loss harvesting, and retirement planning. This is all done automatically through the software and algorithms. The Robo-Advising industry has steadily grown throughout the years, and it is expected to reach

460 billion in investments by 2022. Figure 3.1 below shows the growth and the projected growth of Robo-Advisors from 2015 to 2022 (Frankenfield, 2018).
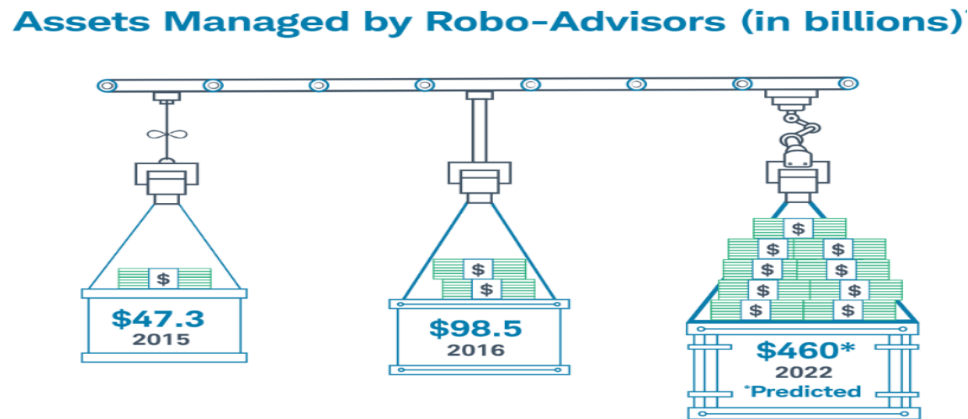
Figure 3.1 Projected Growth of Robo-Advisors (Charles Schwab)

Robo-Advisors are known for the following common practices:

Rebalancing of portfolio to keep the level of portfolio allocation and risk desired. The rebalances can be real-time, by day, by week, or any other interval. All this is programmed into the software and algorithms. The platforms have information on financial planning and tools to use such as projection calculators, and retirement calculators. Robo-Advisors are also known for automatically implementing tax-loss harvesting and other tax strategies (Frankenfield, 2018).

3.1.2 Benefits/Disadvantages of Using a Robo-Advisor

Cost of Service:

Cost is the main benefit of using Robo-Advising. As mentioned before, Robo-Advisors use algorithms and software to manage assets, limiting the human involvement and interaction. Therefore, the cost to manage these programs is significantly less than

human run investments. For comparison, most Robo-Advisors take a fee of .02% to .05% of a client's total account balance where-as a traditional financial planner will take 1% to 2% of a total account balance. That percentage over a long period of time can amount to huge savings. Furthermore, investment portfolios run by humans can have transaction fees. Fees that are applied every time money is re-allocated. Robo-Advisors are consistently and automatically re-allocating money for the client, therefore the transactions fees are usually waived. This is another area of savings for the client. It is important to note that investment companies are saving money on maintenance, and salaries of employees using this technology. Companies like Fidelity, Vanguard, and Charles Schwab have developed Robo-Advising programs to run with the trend (Delloite, 2016).

Accessibility/Low Minimums:

Robo-Advisors are far more accessible than traditional financial planners. With internet connection, a client can re-allocate assets, start retirement planning, open a new account, etc. Traditionally a client would need to drive to bank and find a time where his/her financial advisor is available. Robo-Advisors are accessible 24/7 and are accommodating to the client's time. Low minimums are a major factor to this accessibility. Traditionally financial planners look for individuals with at least 100,000$ in investable assets to get started. With Robo-Advising, the minimums are much lower. Many Robo-Advisors have $10,000 or $5000 minimums, while many like Betterment require no minimum at all. A client can get started with one dollar if they would like. This gives

accessibility to investing for people who were previously not able to afford it (Delloite, 2016).

Simplicity:

As mentioned earlier, the Robo-Advising platforms have an extremely simple and easy to understand interface. Straight-forward financial information and tools are available to clients. Clients may be moved away from the prospect of investing if they have a notion that it is time-consuming and requires major effort. Robo-Advisors automatically allocate funds to fit their client's needs, therefore an investor looking to make money over-time with minimal effort, will be attracted to a Robo-Advising platform (Delloite, 2016).

Efficiency:

Robo-Advisors tend to be more efficient than traditional financial planners. Traditionally, a client would have to call their financial planner, then physically meet with them and sign paperwork to make a move regarding the client's assets. With Robo-Advising, the client can re-allocate portfolio, withdraw/deposit money, speak to virtual advisors, from the comfort of their home and with the click of a mouse (Delloite, 2016).

Potential Disadvantages of Robo-advising:

Critics of Robo-Advisors say that the lack of human element limits the Robo-Advisors from having the complexity that you need to manage a portfolio. Things like estate planning, tax management, trust fund administration all require human interaction

and decision making. The lack of complexity could prove to be financially detrimental to some clients.

Critics also say that Robo-Advisors are not equipped to handle money under extraordinary circumstances such as a stock market collapse. A human interaction could help with making unorthodox plays that could save money in case of an extraordinary event. Human interaction also plays a role in gaining financial information that may not be available to a Robo-advising platform. Having a financial planner who can give a personalized answer to any question an investor has, can be more attractive than learning information from a platform for many clients. Robo-Advisor Platforms may give the same common solution for multiple clients (Delloite, 2016).

3.1.3 How to use a Robo-Advisor

Using a Robo-Advisor is the simplest out of the two trading methods I will simulate. Generally, each platform starts with a questionnaire or survey to assess financial goals and risk tolerance. These goals can include something large such as retirement savings, down-payment for a house savings, or a new car. The Robo-Advisor will then take the inputs from the questionnaire to develop a portfolio of electronically traded funds that will match the risk tolerance assessed in the questionnaire. Next, the Robo-Advisor will monitor market activity and re-allocate funds accordingly based on an algorithm or software. The user also can change risk tolerance and choose which type of electronically traded funds (ETF's) he/she wants the algorithm to favor. After an account has been made and a portfolio has been matched to the client by the algorithm, the money will start being invested (Fidelity, 2017).

Using a Robo-Advisor is a passive form of investment that requires minimal effort from the investor. The CAN SLIM Method discussed later in the paper is an active form of investing. The simplicity of Robo-Advising and passiveness of it will prove to be outstanding if it can match or beat the active traditional trading and save the investor time, which itself is a financial gain.

3.2 Simulation

3.2.1 Platforms Chosen

The two platforms that will be used for the simulation are Betterment and WealthFront. Betterment as explained earlier was the first Robo-Advisor available to clients and has the most market share, WealthFront has the second most market share. Both platforms are credible in this investing category (Betterment, 2018).

3.2.1.1 Betterment

Betterment states that its portfolio is designed to obtain optimal returns for your financial goals. The website states that through diversification, automated rebalancing, better behavioral guardrails and low fees, that Betterment can help generate 2.66% higher returns than of a typical investor (Betterment, 2018).

Cost of Service:

Betterment's annual fee for its most used plan and the one that the simulation will be run on is .25% of the total account balance. This fee covers tax-efficient investing features, investment advice, and customer service seven days a week. Betterment has no minimum to invest and there are no transaction, trading, transfer, or rebalancing fees (Betterment, 2018).

Portfolio Offerings on Betterment:

Betterment offers two major investing subgroups in the investing field, stocks and bonds. They state that stock investments are risker and bond investment are safer. Therefore a 90% risk tolerance would have an investment with a mix of 90 percent stocks and 10 percent bonds. A 40% risk tolerance would have 40 percent stock and 60 percent bond mix.

The percentage of the stocks above can be chosen in the stock portfolio as shown in Figure 3.2. After completing my survey, Betterment gave me 80% stocks to 20% bonds ratio to follow as a guide. This is the ratio I will be starting off my simulation with. I will not be changing these percentages throughout the simulation as I will want to imitate a passive buy-hold investment strategy to replicate minimal effort for a typical investor (Betterment, 2018).
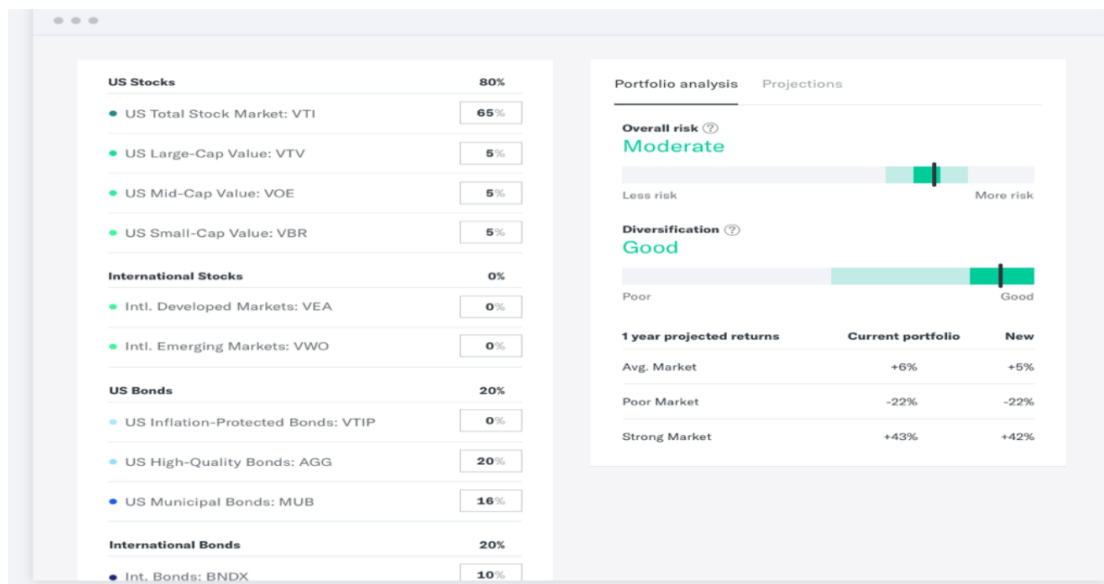
Figure 3.2 Tool to Change Percentage of Portfolio Allocation in Betterment

3.2.1.2 WealthFront

WealthFront works similarly to Betterment. The idea is passive investing and building a globally diversified portfolio with low cost index-funds. The WealthFront software puts money to work automatically while managing the chosen risk and keeping tax losses at a minimum. The motto of the company is to keep the investing effortless to the consumer (WealthFront, 2019).

Cost of Service:

They also have a simple .25% annual fee of the total balance and have no transactions fees. WealthFront has claimed that it would take 105 hours of human time to replicate trade strategies from the algorithm it uses. $2,926 in transaction fees would be acquired in traditional investing compared to the algorithm and the average number of free trades completed per account each year is around 418. The savings of time, money, and free transactions allow WealthFront to keep their operational and service costs low (WealthFront, 2019).

Portfolio Offerings on WealthFront:

The Portfolio Offerings on WealthFront include, U.S stock, Foreign Stock, Emerging Stock Markets, Dividend Stocks, Real Estate, Treasury Inflation- Protected Securities, Municipal Bonds, Corporate Bonds, U.S Government Bonds, Emerging Market Bonds, and Natural Resources (WealthFront, 2019).

Foreword on Robo Advisor Simulation:

This simulation will look to approximate the results using Betterment and WealthFront by using Major Indexes, specifically the S&P 500 as a benchmark for projected growth. The reason for choosing the S&P 500 as benchmark is for because of the following. The portfolio mix displayed in Figure 3.2 most accurately mirrors the diversification in the S&P 500. Furthermore, Betterment and WealthFront both claim to have a 2% higher yield than the S&P 500. Therefore, The Robo-Advisor Platforms themselves use the S&P 500 as a benchmark to indicate that their performance is a slightly better than the S&P 500. At the end of the simulation in this chapter, I will add 1% to the value of the portfolio to mirror the slight edge that Betterment and WealthFront claim to have over S&P 500. I will be using the SPDR S&P 500 ETF as the stock that will be trading during the simulation. This stock is known for mirroring the S&P 500. This part of the report is the passive buy-hold part of the simulation. Chapter four will include the active CAN SLIM Method simulation which will have weekly trades and decisions to make.

3.2.2 Week One

The initial investment for Robo-Advisor Simulation is listed below in Table 3.1.

Date	Stock	Price	Buy/Sell	Shares	Cost/Proceeds
2/24/2019	SPDR S&P 500 ETF	$279.52	Buy	357	$99788.64

Table 3.1 Initial Investment Robo-Advisor Simulation

This week in simulation led to a -0.06% loss with the portfolio value going from $100,000.00 to $99.408.00. This can be summarized in the Table 3.2 below.

Stock	2/25/2019 Price	3/1/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$279.52	$279.35	-0.06%	$99,408.00

Table 3.2 Percent Change Week One for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 2/25/2019 to 3/1/2019 is displayed in Figure 3.3.

Figure 3.3 SPDR S&P 500 ETF from 2/25/2019 to 3/1/2019 (Macro Trends)

3.2.3 Week Two

This week in simulation led to a -2.16% loss with the portfolio value going from $99.408,00 to $97,260.79. This is the second straight week with losses. The change can be summarized in the Table 3.3 below.

Stock	3/1/2019 Price	3/8/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$279.35	$273.32	-2.16%	$97,260.79

Table 3.3 Percent Change Week Two for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 3/1/2019 to 3/8/2019 is displayed in Figure 3.4.
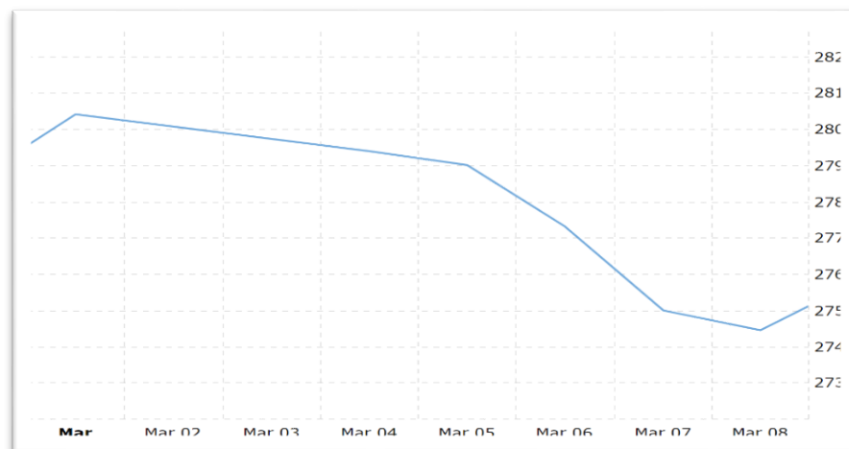
Figure 3.4 SPDR S&P 500 ETF from 3/1/2019 to 3/8/2019 (Macro Trends)

3.2.4 Week Three

The third week in simulation led to a 2.89% gain, with the portfolio value going from $97,260.79 to $100,070.81. This is the first week the simulation resulted in a gain. The gain was large enough to move the portfolio value into a net positive for the whole simulation. The change can be summarized in the Table 3.4 below.

Stock	3/8/2019 Price	3/15/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$273.32	$ 281.22	2.89%	$100,070.81

Table 3.4 Percent Change Week Three for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 3/8/2019 to 3/15/2019 is displayed in Figure 3.5.
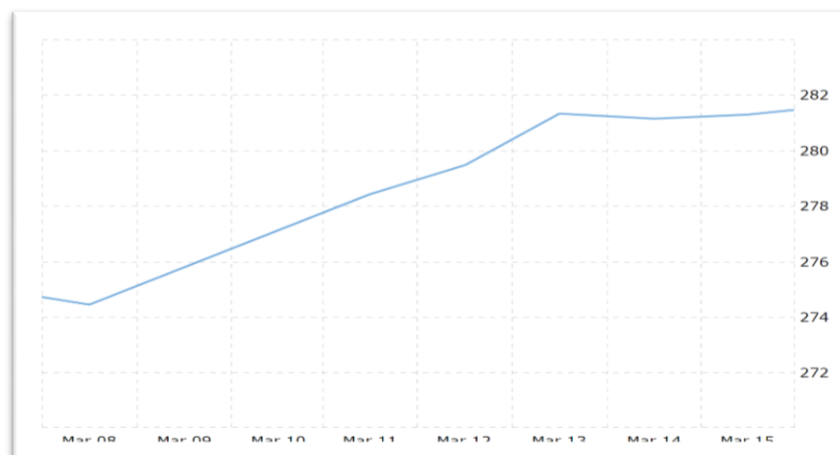
Figure 3.5 SPDR S&P 500 ETF from 3/8/2019 to 3/15/2019 (Macro Trends)

3.2.5 Week Four

The fourth week in simulation led to a 0.77% loss, with the portfolio value going
from 100,070$ to $99,300.26. This is the third out of four weeks with losses. The loss puts
the total portfolio value in the negative again. The changes are summarized in the Table
3.5 below.

Stock	3/15/2019 Price	3/22/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$281.22	$ 279.05	-0.77%	$99,300.26

Table 3.5 Percent Change Week Four for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 3/15/2019 to 3/22/2019 is
displayed in Figure 3.6.
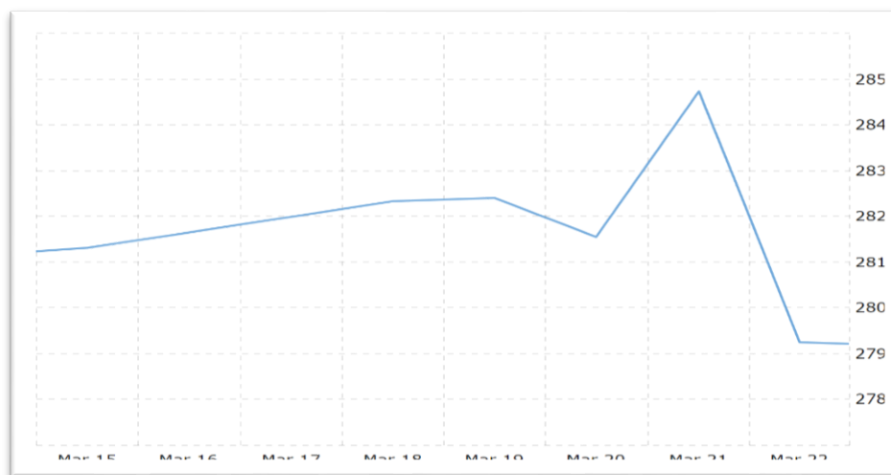
Figure 3.6 SPDR S&P 500 ETF from 3/15/2019 to 3/22/2019 (Macro Trends)

3.2.6 Week Five

The fifth week in simulation produced a 1.20% gain, with the portfolio value going from $99,300.26 to $100,491.86. This week's gain brings the total portfolio value back over the original $100,000. It is also the second consecutive time the weeks have swapped from gains to losses, possible indicating a trend for this month. The changes are summarized in the Table 3.6 below.

Stock	3/22/2019 Price	3/29/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$279.05	$ 282.49	1.20%	$100,491.86

Table 3.6 Percent Change Week Five for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 3/22/2019 to 3/29/2019 is displayed in Figure 3.7.

Figure 3.7 SPDR S&P 500 ETF from 3/22/2019 to 3/29/2019 (Macro Trends)

3.2.6 Week Six

The sixth week of simulation produced a 2.06% gain, with the portfolio value going from $100,491.86 to 102,561.99. This is the first time in the simulation that there have been two positive weeks in a row. This week's gain brings the total portfolio value to the highest it has even been. The changes are summarized in the Table 3.7 below.

Stock	3/29/2019 Price	4/05/2019 Price	Percent Change	Portfolio Value
SPDR S&P 500 ETF	$282.49	$288.31	2.06%	$102,561.99

Table 3.7 Percent Change Week Six for Robo-Advisor

The performance of the SPDR S&P 500 ETF from 3/29/2019 to 4/05/2019 is displayed in Figure 3.8.
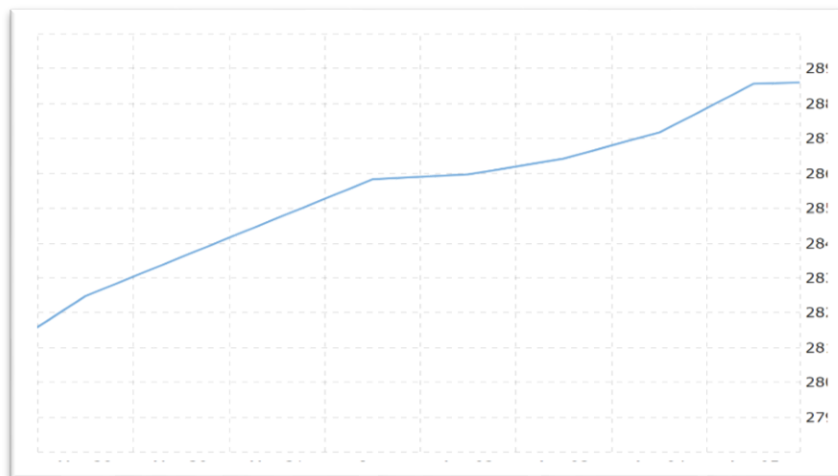
Figure 3.8 SPDR S&P 500 ETF from 3/29/2019 to 4/05/2019 (Macro Trends)

3.3 Results

The Total Portfolio Value went from $100,000 to $102,561.99. This is an increase of roughly 2.56% in a six-week period. The average rate of return for a typical investor annually is six to seven percent so 2.56% gain in this period is a great success. As explained earlier in the section, I will be adding a one percent increase to the total value of the portfolio. This change is to simulate the claim that WealthFront and Betterment perform One to two percent better than the S&P 500. This brings the total portfolio value from $102,561.99 to $103,587.60. A total portfolio value increase of 3.58%. Table 3.8 is a summary of the S&P 500 Weekly Performance and Portfolio Value (PV) through the simulation.

Percent Change	Week One	Week Two	Week Three	Week Four	Week Five	Week Six
S&P 500	-0.06%	-2.16%	2.89%	-0.77%	1.20%	2.06%
PV +/-	-$592	+$2147	+$2810	-$771	+$1191	+$2070

Table 3.8 Percent Change Week Six for Robo-Advisor

Some key notes to take from this simulation is that the average investors would spend no time looking into metrics, finding stocks, and re-allocating money. This is a passive buy-hold method, and Robo-Advisors main selling point is that they do the work for you compared to an active investing method like CAN SLIM that will be simulated later in the report. Furthermore, the simulation reinforced that Robo-Advisor investing has a small risk factor, based on the low percentage losses and gains. Figure 3.9 shows the change in the total portfolio value and the trendline for the six-week period.
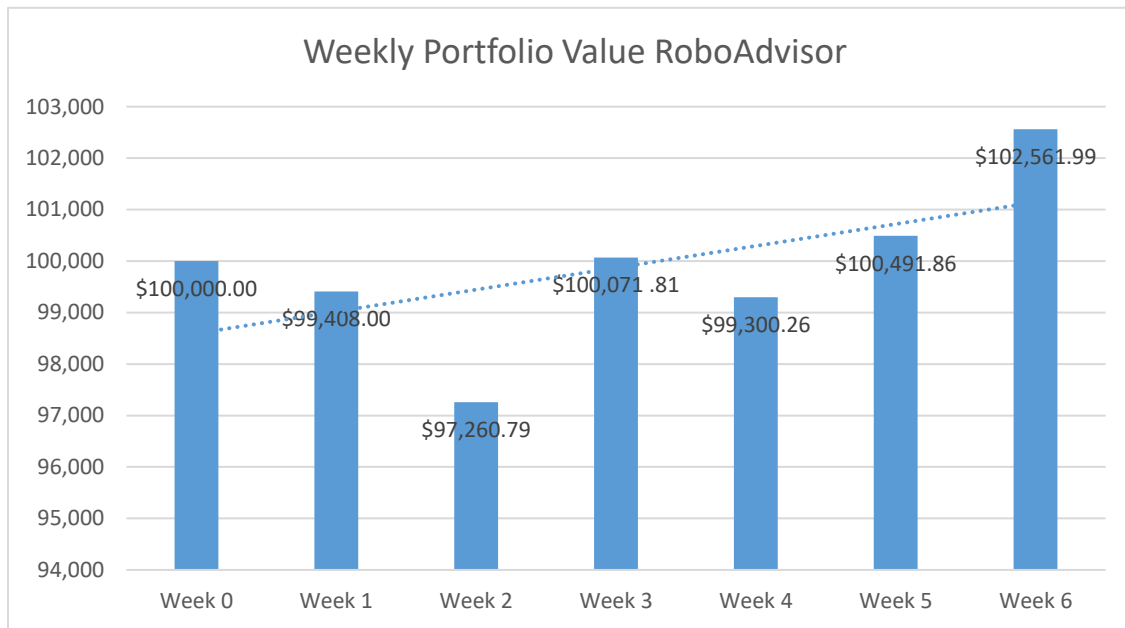
Figure 3.9 Weekly Portfolio Value of Robo-Advisor Simulation

4. The CAN SLIM Method

This chapter will first include an explanation of what the CAN SLIM Method is. Next it will detail the advantages, disadvantages, and features of using the Method. It will also include a detailed explanation of how to use the method with metrics. Then a simulation using the CAN SLIM method will be conducted. Methodology, results, and transactions will be conducted weekly for a six-week period.

4.1 The CAN SLIM Method Background

4.1.1 What is the CAN SLIM Method

The CAN SLIM method is an investing Method that was developed by William J. O'Neil. He saw that many investors knew how to buy stocks but did not know when to buy or when to get out of a stock. He developed general rules that could be followed for investors who want guidance. CAN SLIM is an acronym that is broken down into Current Quarterly Earnings, Annual Earnings Growth, New Product Service, Supply and Demand, Leader of Laggard, Institutional Sponsorship, and Market Direction. The simple rules have been time-proven to generate results and the CAN SLIM Method is one of the more popular investing methods used by many investors. The goal of the strategy is to look for strong basic indicators and fundamentals of a company and buy these companies when they are at a weaker position than they should be (Bajkowski, 2016).

4.1.2 Advantages/Disadvantages of using CAN SLIM Method

CAN SLIM is a step by step approach to the "Buy Low Sell High" Method. By providing the investor indicators and metrics to look for in stock, the investor can feel more confident with their stock purchase knowing it's based on time-proven metrics.

The CAN SLIM Method has the capacity for massive growth in a short period of time. The method thrives in bull markets and bubbles. When the market is strong, the CAN SLIM Method can make more money than traditional mutual funds or Robo-Advisors.

CAN SLIM provides information of how to get into a stock uptrend when the stock has 2/3 of its growth left. In other words, it will help prevent the investor from buying stocks when the stock has already reached its peak momentum. This again can be an advantage to make decisions more efficiently compared to passive investing where the money follows the ups and down of market (Bajkowski, 2016).

Potential Disadvantages:

The CAN SLIM, method does not work well in a bear market. With Robo-Advising and other mutual or index funds, although the market is falling, continuously adding money into the account will help build a foundation for when the market is good. In CAN SLIM a bear market could mean major losses if investors don't react to the economic downturn indicators. CAN SLIM is riskier than other investment strategies and that is why it can yield the greatest rewards. Furthermore, because CAN SLIM is a short-term operator, it may miss out on the long-term gains of other investment strategies. Figure 4.1 below shows a stock that CAN SLIM indicators would tell you to pull out of after the first downturn. The method missed out on the major gains in the long-term future of Netflix. CAN SLIM also require constant monitoring and a great deal of daily effort to be successful compared to other facets of investing (Bajkowski, 2016).

Figure 4.1 Growth in Netflix Stock after CAN SLIM Sell Indicators Noticed.

4.1.3 How to Use the CAN SLIM Method

To use the CAN SLIM Method, an investor should look for companies that most resemble the rules and indicators that are listed below. By checking quantitative and non-quantitative metrics that are recommended, an investor can feel confident about purchasing or letting go of a stock.

Current Quarterly Earnings:

Through basic finance tools, one can find the Current Quarterly Earnings of a company. This indicator is extremely important, because it is what large institutional investors look at when investing in a company stock. Generally, the CAN SLIM method says that a good stock should have at least quarterly earnings of 25% and the better stocks can have somewhere near 50% to 100%. To analyze these metrics, investors should look for earning per share growth rate (Business Insider, 2011).

Annual Earnings Growth:

Annual Earnings Growth is another important metric that is recommended to use. The Annuals Earnings Growth works in tandem with the Current Quarterly Earnings. It shows that a company is strong on all ends and do not have any unknown problems that is not aware to the public. Some of these issues could include falling demand for a company's products, declining profit margins, or negative industry trends. Again, the metric to look at is, earnings per share growth, but this time annually instead of quarterly. The baseline for this growth should be from 25% to 50% in each of the past two to three years for a company to be considered a strong contender (Business Insider, 2011).

New Product or Service:

The third rule to watch for is if the company you are looking to invest in has the capacity to grow, whether it is a revolutionary technology or an upgrade to an existing technology, a new service or a new trend. Looking for companies like this can lead to significant gain in a short period of time. Wall Street Investors are also looking for new products and services that influence the market share (Business Insider, 2011).

Supply and Demand:

Supply and demand dominate many areas of life as they do in market activities. A strong demand for a stock that has limited supply will drive that stock price up. An oversupply with weaker demand will drive a stock price down. Therefore, CAN SLIM investors have learned to look for high trading volume coupled with high price increases. This indicates an increase in demand and decrease in supply, therefore the prices should continue to go up (Business Insider, 2011).

Leader of Laggard:

There are two types of companies that deliver gains. However, companies that deliver gains are leaders that show great results where as companies that deliver gains and lag show mediocre results. Investors can look at the relative price strength metric of a company to find leaders vs laggards. The relative price strength works from price ranks from 1 to 99. A 99-price rank means that a company has achieved more than 99 percent of other stocks in its industry over the period selected. Generally, the CAN SLIM method advocates to looks for stocks with at least a 70 on the relative price strength indicator. Stocks in the 80 to 90 range are preferred (Business Insider, 2011).

Institutional Sponsorship:

This investigates whether a stock/company is "sponsored" by banks mutual funds, pensions, or other investors. Generally, if companies are trusting the retirement accounts and pensions of their employees to a stock, then it has great confidence to perform well. Many other investors look for Institutional Sponsorship too. If the stock an investor is looking at is gaining attention from many places, chances are it is a stock that will have rising stock prices. The benchmark is to look for stocks that have at least 3 institutional owners (Business Insider, 2011).

Market Direction:

The Idea of CAN SLIM investing is to move with the market. There is a saying in the CAN SLIM method that 3 out of 4 stocks will follow the market in a bull market and in a bear market. Therefore, it is important to understand the difference between a bull and bear market and how to recognize what market we are in currently. This way an investor can invest in a bull market and pull out in a bear market (Business Insider, 2011).

During my simulation, I will be using stock screeners to find stocks that resemble the guidelines and metrics to the CAN SLIM method the most. I will be using the stock screener from Finviz to conduct this analysis. Finviz has many categories in which to screen from. Figure 4.2 is a layout of their tools.

Filters: 0						Descriptive	Fundamental	Technical	All				
P/E	Any ▼	Forward P/E	Any ▼	PEG	Any ▼	P/S	Any ▼	P/B	Any ▼
Price/Cash	Any ▼	Price/Free Cash Flow	Any ▼	EPS growth this year	Any ▼	EPS growth next year	Any ▼	EPS growth past 5 years	Any ▼
EPS growth next 5 years	Any ▼	Sales growth past 5 years	Any ▼	EPS growth qtr over qtr	Any ▼	Sales growth qtr over qtr	Any ▼	Return on Assets	Any ▼
Return on Equity	Any ▼	Return on Investment	Any ▼	Current Ratio	Any ▼	Quick Ratio	Any ▼	LT Debt/Equity	Any ▼
Debt/Equity	Any ▼	Gross Margin	Any ▼	Operating Margin	Any ▼	Net Profit Margin	Any ▼	Payout Ratio	Any ▼
Insider Ownership	Any ▼	Insider Transactions	Any ▼	Institutional Ownership	Any ▼	Institutional Transactions	Any ▼		Reset (0)

Figure 4.2 Finviz Stock Screener Fundamental Indicators

As shown above, Finviz has all the metrics explained by the CAN SLIM method to narrow down my stock search. I will be using this screener to determine the strength of the stocks I choose and to allocate money differently each week, based on the screening results. Figure 4.3 is an example of how I can narrow down my search results

even further using criteria search, with EPS, Institutional Ownership, Relative Strength

Index and other indicators I can choose.

CAN SLIM
Screens for baseline quantitative criteria in the CAN SLIM strategy.

Criteria:
EPS 5-Year Avg (%) > 24.9
Equation: "EPS [MRQ] " >=1.18* "EPS [Q4] "
Institutional Ownership % > 35
Price vs 52-wk High (%) > 84
Relative Strength Index > 69
Shares Available > 9
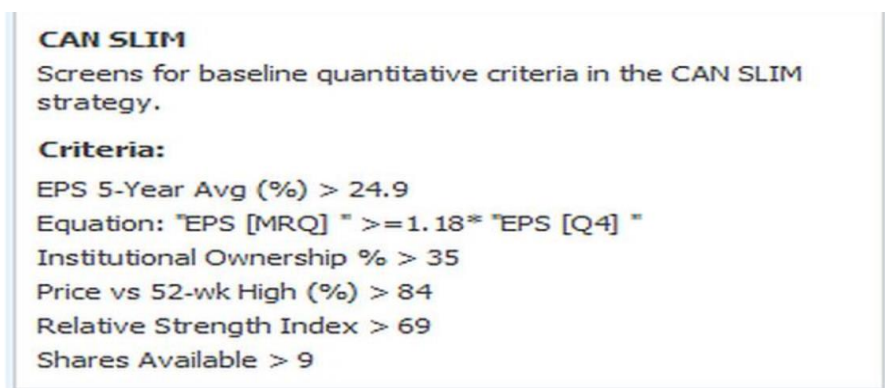
Figure 4.3 Finviz Stock Screener Criteria Search Example

4.2 Simulation

4.2.1 Methodology/Companies Chosen

The companies chosen in CAN SLIM trading simulation conducted are based off the metrics involved in the CAN SLIM Methods. As explained above, the simulation will use the Finviz Stock Screener to screen the companies that fit the metrics. The stocks chosen will be attractive to CAN SLIM investors. For instance, although the CAN SLIM method recommends a 25% increase in quarterly earnings, a more attractive company would have a 30% increase. Therefore, the simulation would use the 30% benchmark for quarterly earnings. The numbers could vary due to the individual requirements.

The benchmarks used in the simulation are listed below, as well as the FinViz coding used to screen the stocks and the results of the screening are as follows:

30% Quarterly Earnings can be analyzed through earnings per share. 30% Annual Earnings or more for past 5 years. Relative Strength Price of 80 or above, which is analyzed through the Relative Strength Index. A Relative Volume indicator of 2.0 or greater and an Institutional ownership of 30% or above.

Based on the above settings, the stock screener screened thousands of stocks down to nine stocks that fit selected metrics as shown in Figure 4.4 below. The simulation will choose four stocks, and the four stocks chosen will also consider the Supply and Demand aspect and New product of service aspect of the CAN SLIM method.

No.	▲Ticker	Perf Week	Perf Month	Perf Quart	Perf Half	Perf Year	Perf YTD	Volatility W	Volatility M	Recom	Avg Volume	Rel Volume	Price	Change	Volume
1	BFIN	1.16%	3.23%	6.39%	-2.74%	-3.93%	4.62%	2.49%	1.78%	-	51.30K	2.55	15.64	2.09%	130,611
2	CSBR	35.75%	8.40%	1.75%	33.72%	240.76%	48.78%	10.79%	8.26%	-	82.53K	2.04	11.62	24.95%	168,478
3	DLHC	0.78%	33.22%	27.45%	19.71%	5.18%	39.78%	3.54%	5.30%	1.50	19.09K	2.42	6.50	0.00%	46,094
4	GTN	21.39%	32.23%	21.18%	28.13%	48.54%	48.64%	4.96%	2.92%	1.60	806.74K	5.33	21.91	16.48%	4,296,627
5	KMDA	3.87%	17.75%	16.86%	9.20%	17.52%	23.40%	5.36%	4.35%	-	34.62K	2.09	6.17	0.16%	72,343
6	LUV	3.19%	-0.59%	6.22%	-8.00%	-4.17%	20.57%	2.48%	2.02%	2.10	4.87M	3.11	56.04	4.07%	15,177,668
7	ORM	2.05%	8.58%	15.36%	35.72%	60.77%	21.93%	1.68%	1.71%	-	35.60K	3.08	22.91	1.87%	109,593
8	RUBI	19.80%	36.83%	28.45%	45.66%	231.64%	57.37%	6.28%	4.17%	-	398.17K	7.55	5.87	13.10%	3,004,607
9	RVSB	2.11%	5.31%	-7.08%	-21.26%	-13.13%	6.32%	1.93%	1.79%	-	33.14K	3.71	7.74	0.39%	122,924

Figure 4.4 Results of Finviz Stock Screening

The first three stocks chosen were the ones with significantly higher trading value than the other stocks. These three stocks were Gray Television Incorporated (GTN) at 4,296,627 volume. The Rubicon Project (RUBI) at 3,004,607 volume, and Southwest Airlines at 15,177,668 volume. These companies are significantly higher in trade volume, as the other six companies are all less than 170,000 in volume. They are chosen using Supply and Demand, a key methodology of the CAN SLIM method.

The last stock chosen is Champions Oncology (CSBR) with a trade volume of 168,478. This stock fits the New Product or Service category of the CAN SLIM. They are in a very new and emerging market, have a lower trade volume with strong growth indicating that they could be a New Product Leader.

Below is a summary of each of the companies and stocks chosen, along with their recent performance history:

Champions Oncology:

Champions Oncology was founded on June 4, 1985. The primary function of the company is the development and sale of oncology related drugs. The company has shown tremendous fiscal growth. The average Annual Earnings Per Share (EPS) for the past 5 years are 37.90% and an EPS this year of 79.20%. It's Relative Strength Index (RSI) is 64.07, Relative Volume (RV) of 2.04. and a strong institutional ownership percentage of 53.90%. Champions Oncology has high growth partly because it has the highest strength in the New Product or Service category of CAN SLIM while having strong results for all the other benchmarks. Figure 4.5 shows CSBR stock chart. (Rueters, 2019)

Figure 4.5 Champions Oncology One Year Stock Performance

Gray Television Incorporated:

Gray Television Incorporated shown in Figure 4.6 was founded on January 25, 1897. It is a large television broadcast company owning 91 TV Markets including 150

affiliates of NBC, ABC, and FOX networks. Gray Television network has an annual earnings per Share growth over 30.20% in the last 5 years, and current year earnings of 83.50%. GTN also has a very strong Relative Volume of 5.33. Traders are watching and using this stock. It has an RSI of 89.41. This is a high Strength Index but may indicate that the stock is overbought already. Finally, it has a strong Institutional Ownership of 84.30% indicating institutions trust this stock to perform well. (Rueters, 2019)

Figure 4.6 Gray Television Incorporated One Year Stock Performance

The Rubicon Project:

The Rubicon Project was founded on April 20, 2007. Their primary function is to offer technological solutions to automate the purchase and sale of advertising for buyers and sellers. They make the advertising process and system easier to use for the average individual/company. The Rubicon Project's annual EPS for the past 5 years is a staggering 138.75%. This is a significant difference in growth compared to the other stocks in the simulation. The RSI is 81.73, and the RV is 7.55. This indicates that this

could be a high performing stock. The Institutional Ownership is at a strong 70.40%.

Figure 4.7 shows the Rubicon Project Stock Chart. (Rueters, 2019)

Figure 4.7 Rubicon Project One Year Stock Performance

Southwest Airlines:

Southwest Airlines was founded on March 9,1967. It is a passenger airlines company that provides transportation all around the United States and near-international markets. Southwest has an Annual EPS growth rate of 32.40% and earnings this year of 24.10%. It's RSI is 57.49 and its RV of 3.11. Southwest has a strong Institutional Ownership of 81.30% percent. It is a very common and popular stock in the industry and this is demonstrated by the Institutional Ownership. Figure 4.8 shows the Southwest Airlines Stock Chart. (Rueters, 2019)

Figure 4.8 Southwest Airlines One Year Stock Performance

4.2.2 Week One

The simulation will start with an initial investment of 25,000$ in each of these stocks. The stocks will be monitored by the metrics above and their performance. Re-allocations will be made weekly to achieve the maximum profit by the end of the six-week simulation. Table 4.1 shows the equal distribution of stock cost for each initial investment and the number of shares purchased.

Date	Stock	Price	Buy/ Sell	Shares	Cost/Proceeds	Profit /Loss	Total Cash
							$100,000.00
2/24/2019	CSBR	$8.91	Buy	2805	$24,992.55	0	$75,007.45
2/24/2019	GTN	$18.15	Buy	1377	$24,992.55	0	$50,014.90
2/24/2019	RUBI	$5.18	Buy	4826	$24,998.68	0	$25,016.22
2/24/2019	LUV	$53.93	Buy	463	$24,969.59	0	$46.63.00

Table 4.1 Initial Investment for CAN SLIM Method Simulation

The first week of CAN SLIM trading generated staggering increases in total portfolio value. Table 4.2 is a summary of the Week One trading results.

Stock	2/25/2019 Price	3/1/2019 Price	Percent Change	Portfolio Value
CSBR	$8.91	$11.42	28.17%	$32,033.10
GTN	$18.15	$22.56	24.29%	$31,065.12
RUBI	$5.18	$6.01	16.21%	$29,004.26
LUV	$53.93	$54.35	0.78%	$25,164.05
				$117,266.53

Table 4.2 Percent Change and Portfolio Value for Week One Stocks

The first week of simulation created a portfolio growth to $117,226.53 total for an increase of 17.23%. Champions Oncology has the greatest single stock growth of 28.17%, followed by Gray Television with 24.29% and Rubicon with 16.02%. Southwest Airlines results were disappointing compared to major gains of the other three stocks in the simulation with an increase of only 0.78%. The inclination is to allocate stocks from Southwest to the higher percent increases, however with the CAN SLIM approach this simulation will monitor Relative Strength Index, Relative Volume, as well as performance to make decisions on the future weeks. Table 4.3 reflects these metrics.

Stock	(RSI)/(RV) 2/24/2019	(RSI)/ (RV) 3/3/2019	Weekly Performance
CSBR	(64.07) / (2.04)	(62.94) / (1.34)	28.17%
GTN	(89.41) / (5.33)	(90.35) / (5.05)	24.29%
RUBI	(81.73) / (7.55)	(82.93) / (3.49)	16.02%
LUV	(57.49) / (3.11)	(49.06) / (1.78)	0.778%

Table 4.3 Relative Strength Index, Relative Volume, and % Change Comparison WK 1

The Performance of CSBR of 28.17% is strong and cannot be ignored, however the Relative Volume (RV) of the stock took a major hit from 2.04 to 1.34. The RV of 1.34 is below the recommended value of the CAN SLIM method. This may have been caused by a large amount of selling in the stock and this selloff could continue into Week Two. Therefore, for Week Two, I will not re-allocate any funds into CSBR and wait to see the performance and metric changes after week 2. LUV (Southwest Airlines) although positive for the week, had the most disappointing results comparatively. Furthermore, LUV's RSI and RV are both below the recommended value of CAN SLIM. Based on the above observations, I will be selling all of LUV stock and reallocating funds into GTN and RUBI. GTN has a strong showing of 24.29% gain, while keeping RV and RSI almost the same throughout the week. This indicates that GTN has the potential for further growth, and investors are not selling quite yet. RUBI took a hit in RV, but still has a healthy 3.49. With a strong RSI and great percent change as well, I plan to allocate a portion LUV's shares into RUBI. Table 4.4 is a summary of my transactions before Week Two.

Date	Stock	Price	Buy/Sell	Shares	Cost/Proceeds	Profit/Loss	Total Cash
3/3/2019	LUV	$54.35	Sell	2805	$25,164.05	$194.46	$25,210.68
3/3/2019	GTN	$22.56	Buy	775	$17,484.99	$0	$7,725.69
3/3/2019	RUBI	$6.01	Buy	1247	$7,494.47	$0	$230.53

Table 4.4 Table of transactions before Week Two of Simulation

Portfolio Value of CSBR: **$32,033.10** (2805 Shares)

Portfolio Value of GTN: $31,065.12 (1377) + $17,484.99 (775) = **$48,550.11** (2152 Shares)

Portfolio Value of RUBI: $29,004.26 (4826) + $7,494.47 (1247) = **$36,498.73** (6073 Shares)

Total Cash: **$230.53**

4.2.3 Week Two

The second week of simulation produced a portfolio loss from $117,226.33 to $111,285.40. This is percent change of approximately -5% from last week. Most of this loss can be attributed to the -15.32% loss in Champions Oncology (CSBR) stock. I was hesitant to re-allocate Southwest Airlines (LUV) stock to CSBR at the end of last week because of the Relative Volume drop of CSBR. This hesitation proved to be a correct one. The 15.32% loss highlights the large pendulum swings CAN SLIM traders must consider. CSBR had a 28.17% gain last week and a 15.32% loss this week, demonstrating the high risk, high reward nature of the CAN SLIM method. Gray (GTN) Television Network also had a 4.08% loss this week, which is a minimal loss considering a 24.29% gain last week. Rubicon Project (RUBI) was the only profitable stock of week two with a 3.00% increase. The re-allocation of LUV stock into RUBI proved to be beneficial for week two. Like the previous week, the simulation will now analyze the changes in RSI and RV to decide on transactions for the coming week. Table 4.5 is a summary of Week Twos performance and new portfolio values.

Stock	3/1/2019 Price	3/8/2019 Price	Percent Change	Portfolio Value
CSBR	$11.42	$9.67	-15.32%	$27,124.35
GTN	$22.56	$21.64	-4.08%	$46,569.28
RUBI	$6.01	$6.19	3.00%	$37,591.87
				$111,285.40

Table 4.5 Percent Change and Portfolio Value for Week Two Stocks

The Relative Strength Index (RSI) and Relative Volume (RV) Analysis for Week Two is worrying for any CAN SLIM trader. The RSI and RV's of each of the stocks have dropped dramatically. The most notable is the drop in Champions Oncology (CSBR) from which also had a very poor weekly performance, RSI from 62.94 to 27.55 and a RV drop from 1.34 to a 0.32, with a very poor weekly performance as well.

Investors have turned away from this stock. There is a potential for a large increase in buying for Week Three for CSBR. However, according to CAN SLIM, I should re-allocate funds to a different investment. The other two stocks also have struggling RSI and RV metrics as shown in Table 4.6. Therefore, I used Finviz stock screener with the original parameters in section 4.2.1 to find alternative stocks to invest in.

Stock	(RSI)/ (RV) 3/3/2019	(RSI)/ (RV) 3/10/2019	Weekly Performance
CSBR	(62.94) / (1.34)	(47.55) / (0.32)	-15.32%
GTN	(90.35) / (5.05)	(71.82) / (2.26)	-4.08%
RUBI	(82.93) / (3.49)	(83.53) / (1.34)	3.00%

Table 4.6 Relative Strength Index, Relative Volume, and % Change Comparison WK 2

The stock screening led me to three results, one of them being Gray Television Inc, wish is already included in the simulation. From the other two stocks, I chose to invest in Energy Recovery Inc (ERII) as it has a larger Market Cap and a larger total volume than Rice Bran Technologies. Energy Recovery Inc. has a Relative Volum of 4.94, and a Relative Strength Index of 72.99. The Relative Volume is much stronger than the current stocks in the simulation. Therefore, I will be re-allocating most of the capital in Champions

Oncology stock to Energy Recovery Incorporated. I will keep Gray Television and Rubicon stocks untouched. The reasoning for this is that Gray Television Inc. still has strong metrics as it passed the week two stock screening. Rubicon Project had a positive weekly performance despite dropping in metrics, indicating it has potential to rebound. Table 4.7 is a Table of Transactions at the end of week two and Figure 4.9 is the results of the stock screening for Week Two.

Figure 4.9 Results of Finviz Stock Screening for Week Two

Date	Stock	Price	Buy/Sell	Shares	Total Cost ($)	Profit/Loss	Total Cash
3/10/2019	CSBR	$9.67	Sell	2000	$19,340.00	$1520	$19570.53
3/10/2019	ERII	$8.88	Buy	2139	$18,994.32	$0	$576.21

Table 4.7 Table of transactions before Week Three of Simulation

Portfolio Value of CSBR: $27,124.25 (2805) - $19,340.00(2000) = **$7784.35** (805 Shares)

Portfolio Value of ERII**: $18,994.32** (2139 Shares)

Portfolio Value of GTN: **$46,569.28** (2152 Shares)

Portfolio Value of RUBI**: $37,591.87** (6073 Shares)

Total Cash: **$576.21**

4.2.4 Week Three

The third week of simulation produced an increased portfolio of $117,814.13 from $111,285.40. This week's gains recovered last week's losses and put the simulation portfolio value at the highest point since the start of the simulation. The change of the portfolio this week was around 5.76%. A large part of the gain can be attributed to the Rubicon Project (RUBI) with a weekly performance of 11.47%. RUBI was the only positive stock of last week, it also increased in RSI, therefore it was a beneficial decision not to sell RUBI stock last week. This week produced positive numbers for all stocks, CBSR had a 4.75% gain, GTN a 3.70% gain, RUBI an 11.47% gain, and ERII a 2.48% gain. This week is a great example of how powerful the CAN SLIM method can be. It is difficult to have every stock perform positively on a week-to-week basis. Table 4.8 shows new portfolio values for Week Three.

The decision to allocate Champions Oncology stock to the Energy Recovery Incorporated turned out not optimal. CSBR has a 4.75% gain, while Energy Recovery has a 2.48%. The idea of re-allocating CSBR stock was to minimize the losses if CSBR continued to decline. Although the re-allocation was optimal, the minimization of risk was worth the trade-off, as both stocks performed positively.

Stock	3/8/2019 Price	3/15/2019 Price	Percent Change	Portfolio Value
CSBR	$9.67	$10.13	4.75%	$8,154.65
GTN	$21.64	$22.44	3.70%	$48,290.88
RUBI	$6.19	$6.90	11.47%	$41,903.70
ERII	$8.88	$9.10	2.48%	$19,464.90
			Total:	**$117,814.13**

Table 4.8 Percent Change and Portfolio Value for Week Three Stocks

As analyzed in previous weeks, the simulation will look at the Relative Strength Index (RSI), Relative Volumes (RV), and the Weekly Performance of each stock. (Table 4.9) Rubicon Project had a strong week, showed minimal loss in RSI and a large increase in RV. Therefore, RUBI stock will not be altered. CSBR will also be untouched, as CSBR has increased in RSI. GTN has a large portion of portfolio value at $48,290. Although it has had a positive week, the RSI has decreased, and the RV has decreased significantly down to 1.05. At the start of the simulation GTN had a 5.33 RV and now it is down to 1.05. This indicates that investors are turning away from the GTN stock. Furthermore, to minimize risk and diversify the portfolio I will again be using the Finviz stock screener. With the CAN SLIM parameters input into the screener I found the Huazhu Group Limited (HTHT) stock. HTHT has an RSI of 69.95 and an impressive RV of 6.61. Table 4.10 is a summary of transactions made to reallocate the GTN stock to HTHT.

Stock	(RSI)/ (RV) 3/10/2019	RSI)/ (RV) 3/17/2019	Weekly Performance
CSBR	(47.55) / (0.32)	(52.12) / 0.25)	4.75%
GTN	(71.82) / (2.26)	(69.44) / (1.05)	3.70%
RUBI	(83.53) / (1.34)	(80.85) / (2.60)	11.47%
ERII	(72.99)/(4.94)	(67.57) / (2.13)	2.40%

Table 4.9 Relative Strength Index, Relative Volume, and % Change Comparison WK 3

Date	Stock	Price	Buy /Sell	Shares	Cost/Proceeds	Profit/ Loss	Total Cash
3/17/2019	GTN	$22.44	Sell	891	$19,994.04	$3822	$20570.25
3/17/2019	HTHT	$39.04	Buy	505	$19,715.20	$0	$855.05

Table 4.10 Table of transactions before Week Four of Simulation

Portfolio Value of CSBR: = **$8154.65** (805 Shares)

Portfolio Value of ERII**: $19,464.90** (2139 Shares)

Portfolio Value of GTN: $48,290.88 (2152) -$19,994.04 (891) = **$28,296.84** (1261 Shares)

Portfolio Value of RUBI**: $41,903.70** (6073 Shares)

Portfolio Value of HTHT: **$19,715.20** (505 Shares)

Total Cash: **$855.05**

4.2.5 Week Four

The fourth week of simulation dropped the total portfolio value from $117,814.13 to $113,013.50. Although the week produced the single largest drop in portfolio value, this week was the first week where all weekly performances were negative. Three stocks showed the most significant losses. GTN had a loss of 4.19%, RUBI had a loss of 4.93%, and ERRI had the largest loss of 6.26%. Many of these losses can be attributed to downward day of trading on Friday of this week (3/22) The Dow Jones lost nearly 500 points, and as it is an economic indicator, many stocks including the ones in this simulation suffered. HTHT had a 0.10% loss and CSBR a 0.39% loss proving to be resilient stocks in the face of negative indicators.

The decision to Sell GTN stock in favor of HTHT stock last week proved to be beneficial. The RSI and RV drop in GTN was worrying considering about 30% of the whole portfolio value was in GTN. The diversification was helpful as GTN had a 4.19% loss while HTHT had a 0.10%. Following the RSI and RV indicators saved nearly $2000 in losses. Below is Table 4.11 summarizing week four performance and new portfolio values.

Stock	3/15/2019 Price	3/22/2019 Price	Percent Change	Portfolio Value
CSBR	$10.13	$10.09	-0.39%	$8,122.45
GTN	$22.44	$21.50	-4.19%	$27,111.50
RUBI	$6.90	$6.56	-4.93%	$39,838.88
ERII	$9.10	$8.53	-6.26%	$18,245.67
HTHT	$39.04	$39.00	-0.10%	$19,695.00
			Total:	**$113,013.50**

Table 4.11 Percent Change and Portfolio Value for Week Four Stocks

Just as every stock produced a loss this week, the RSI and RV metrics for each stock also decreased. The largest loss in RSI was RUBI dropping from 80.85 to 62.40. This can be expected as RUBI has the worse week it has had since the simulation started. The largest drop in RV was easily HTHT, dropping from 6.61 to 0.86. It seems that after a strong performance last week, investors were eager to drop the HTHT stock. Despite this HTHT only had a 0.10% loss, indicating it can be resilient in adversary. ERII had the largest percent decrease as well as decreases in both RSI and RV. This is following a low 2.40% gain last week compared to the other stocks in the simulation. Therefore, I will be selling ERII stock and investing in Auto Home Inc (ATHM). From the stock screener I found that ATHM has a strong RSI of 73.89 and a strong Relative Volume of 2.49. It also meets all the other parameters listed in section 4.2.1. Because of these favorable metrics, I will be re-allocating ERII stock into ATHM. Table 4.12 displays the changes in RSI and RV for Week Four. Table 4.13 summarizes the transactions occurred before the start of Week Five.

Stock	(RSI)/ (RV) 3/17/2019	RSI)/ (RV) 3/24/2019	Weekly Performance
CSBR	(52.12) / (0.25)	(50.35) / (0.80)	-0.39%
GTN	(69.44) / (1.05)	(56.60) / (0.65)	-4.19%
RUBI	(80.85) / (2.60)	(62.40) / (1.33)	-4.93%
ERII	(67.57) / (2.13)	(54.10) / (0.90)	-6.26%
HTHT	(69.65) / (6.61)	(64.97) / (0.86)	-0.10%

Table 4.12 Relative Strength Index, Relative Volume, and % Change Comparison WK 4

Date	Stock	Price	Buy/Sell	Shares	Cost/Proceeds	Profit/Loss	Total Cash
3/24/2019	ERII	$8.53	Sell	2139	$18,245.67	-$748	$19,100.72
3/24/2019	ATHM	$89.50	Buy	213	$19,063.50	$0	$37.22

Table 4.13 Table of transactions before Week Five of Simulation

Portfolio Value of CSBR: = **$8122.45** (805 Shares)

Portfolio Value of GTN: = **$27,111.50** (1261 Shares)

Portfolio Value of RUBI**: $39,838.88** (6073 Shares)

Portfolio Value of HTHT: **$19,695.00** (505 Shares)

Portfolio Value of ATHM: **$19,063.50** (213 Shares)

Total Cash: **$37.22**

4.2.5 Week Five

Week five stock simulations led to a portfolio increase from $113,013 to $115,411. This increase can pe largely attributed to the ATHM stock which had a 17.45% increase. HTHT also performed well with an increase of 8.05%. CSBR, GTN, and RUBI all had negative weeks. CSBR had a 2.97% loss, GTN had a 0.65% loss and RUBI had the largest percentage loss of 7.32%. RUBI had the largest portfolio allocation out of all the stocks, resulting in a minimal portfolio increase around $2000, even after huge gains from ATHM and HTHT. The performance for Week Five and new Portfolio Values are summarized in Table 4.14.

Depending on the RSI and RV Analysis, I will be looking to allocate Some RUBI stock into a different stock. Diversification using CAN SLIM metrics has proved to be successful in the simulation. The move from GTN stock to HTHT was profitable. Last weeks move to sell ERII and move into ATHM was very successful. For reference ERII increased by 2.34% and AHTM increased by 17.45% The move to switch to ATHM generated roughly $2600 more for this week than staying with ERII.

Stock	3/22/2019 Price	3/29/2019 Price	Percent Change	Portfolio Value
CSBR	$10.09	$9.79	-2.97%	$7,880.95
GTN	$21.50	$21.36	-0.65%	$26,934.96
RUBI	$6.56	$6.08	-7.32%	$36,923.84
ATHM	$89.50	$105.12	17.45%	$22,390.56
HTHT	$39.00	$42.14	8.05%	$21,280.70
			Total:	**$115,411.01**

Table 4.14 Percent Change and Portfolio Value for Week Five Stocks

Despite the large losses for RUBI this week, its RSI decreased only slightly, and its RV increased from 1.33 to 2.49. This indicates that investors are onboard with buying this stock again and could lead to increases in price. Despite this, after two negative weeks in a row, and a large percentage of this simulation's portfolio, I will be re-allocating a portion of RUBI stock into HTHT. HTHT had a strong 8.05% gain as well as an increase in RSI and a large increase from 0.86 to 1.96 in RV. These strong metrics give me confidence that HTHT is likely to perform well this coming week. ATHM had a very successful week of 17.45% gain and increase in both RSI and RV metrics just like HTHT. However, after a 17.45% increase this week, it is likely for some investors to sell their stock and take profits while they can. Therefore, I am hesitant to re-allocate funds to ATHM this week and will keep the stock as is. CSBR and GTN had minimal losses this week, and their RSI and RV value remain unchanged. After two consecutive weeks of losses, a slight RV increase in GTN could mean optimism for the stock this week. Table 4.15 displays the updated RSI and RV of each stock for Week Five. Table 4.16 displays transactions before the beginning of Week Six.

Stock	(RSI)/ (RV) 3/24/2019	(RSI)/ (RV) 3/31/2019	Weekly Performance
CSBR	(50.35) / (0.80)	(44.70) / (0.57)	-2.97%
GTN	(56.60) / (0.65)	(53.35) / (1.08)	-0.65%
RUBI	(62.40) / (1.33)	(50.47) / (2.49)	-7.32%
ATHM	(73.89) / (2.49)	(75.06) / (2.78)	17.45%
HTHT	(64.97) / (0.86)	(74.41) / (1.96)	8.05%

Table 4.15 Relative Strength Index, Relative Volume, and % Change Comparison WK 5

Date	Stock	Price	Buy/ Sell	Shares	Cost/Proceeds	Profit/ Loss	Total Cash
3/31/2019	RUBI	$6.08	Sell	1644	$9,995.52	$1,479	$10,032.74
3/31/2019	HTHT	$42.14	Buy	237	$9,987.18	$0	$45.56

Table 4.16 Table of transactions before Week Six of Simulation

Portfolio Value of CSBR: = **$7880.95** (805 Shares)

Portfolio Value of GTN: = **$26,934.96** (1261 Shares)

Portfolio Value of RUBI**:** $36,923.84 (6073) - 9,995.52 (1644) = **$26,928.32** (4429 Shares)

Portfolio Value of HTHT: $21,280.70 (505) + 9,987.18 (237) = **$31,267.88** (742 Shares)

Portfolio Value of ATHM: **$22,390.56** (213 Shares)

Total Cash: **$45.56**

Week Six

The last week of simulation generated positive results. GTN, RUBI, ATHM, and HTHT all had positive weeks with HTHT leading the momentum at a 4.14% gain. The only negatively performing stocks was CSBR and that was a minimal loss of 0.97%. Last week, RUBI had a negative performance and a weakening RSI, therefore I allocated RUBI stock to HTHT before the start of this week. This move was beneficial as HTHT had a 4.14% gain as RUBI only had a 1.5% gain. The move increased the money gained in the portfolio. Table 4.17 is a summary of the performance of the stocks for Week Six simulation.

Stock	3/29/2019 Price	4/05/2019 Price	Percent Change	Portfolio Value
CSBR	$9.29	$9.20	-0.97%	$7,406.00
GTN	$21.36	$22.58	5.71%	$28,473.38
RUBI	$6.08	$6.15	1.15%	$27,238.35
ATHM	$105.12	$108.51	3.22%	$23,112.63
HTHT	$42.14	$44.18	4.84%	$32,781.56
			Total:	**$119,011.96**

Table 4.17 Percent Change and Portfolio Value for Week Six Stocks

As this is the last week of simulation, all the stock in the portfolio will be sold at the price it is for the date of 4/05/2019. The stock prices, shares, cost/proceeds and total cash after transaction will be shown below in Table 4.18. The total cash ended at $119,011.96 which is $19,011.96 dollars of a gain throughout the whole simulation. The next section of the paper will be an in-depth analysis of the results in this simulation.

Date	Stock	Price	Buy/Sell	Shares	Cost/Proceeds	Total Cash
4/08/2019	CSBR	$9.20	Sell	805	$7,406.00	$7451.56
4/08/2019	GTN	$22.58	Sell	1261	$28,473.38	$35,924.94
4/08/2019	RUBI	$6.15	Sell	4429	$27,238.35	$63,163.32
4/08/2019	ATHM	$108.51	Sell	213	$23,112.63	$86,275.95
4/08/2019	HTHT	$44.18	Sell	742	$32,781.56	$119,057.51

Table 4.18 Table of transactions End of Week Six Simulation

Total Cash at End of Simulation: **$119,057.51**

4.3 Results

The results of the CAN SLIM simulation were promising and exciting. The Portfolio increased from $100,000.00 to $119,011.96. This indicates a 19% increase which is a great amount for a six-week simulation. Table 4.19 below is a compilation of each stock involved in the simulation's performance week by week, as well as the gain or loss in total Portfolio Value (PV). The green and red shaded areas correlate to positive and negative percentage gains respectively.

Table 4.19 shows that Week One, Week Three, Week Five and Week Six had positive Portfolio Value gains. Week Two, and Week Four show Portfolio losses. The strongest positive week of the simulation was Week One. In Week One, all stocks performed positively, and massive gains were shown by CSBR and GTN. Week Two had the greatest loss of Portfolio Value. Week Four was the only week with all stocks perfoming negatively. Week Five and Week Six were carried by HTHT and ATHM. The table really shows the volatility and fluctuation of the CAN SLIM method. The simulation shows that when the market is positive the CAN SLIM Methods creates strong gains. While the Market is negative, the CAN SLIM method can lead to sharp losses.

Performance	Week One	Week Two	Week Three	Week Four	Week Five	Week Six
CSBR	28.17%	-15.32%	4.75%	-0.39%	-2.97%	-0.97%
GTN	24.29%	-4.08%	3.70%	-4.19%	-0.65%	5.71%
RUBI	16.02%	3.00%	11.47%	-4.93%	-7.32%	1.15%
LUV	0.78%	-	-	-	-	-
ERII	-	-	2.40%	-6.36%	-	-
HTHT	-	-	-	-0.10%	17.45%	3.22%
ATHM	-	-	-	-	8.05%	4.84%
+/- PV ($)	+17,226	-5,981	+6,528	-4,800	+2398	+3,601

Table 4.19 Performance of Stocks Weekly CAN SLIM Simulation

The positives of the CAN SLIM method showed in this simulation. The CAN SLIM Method metrics helped me pick stocks that grew and avoid losses throughout the simulation. The first example of this was demonstrated in first week. With no previous knowledge or stock information, only the CAN SLIM metrics were used with the Finviz stock screener to find CSBR, GTN, RUBI, and LUV. As discussed above week one had a $17,226 gain, the largest of the simulation. Next, I sold GTN stock in favor of HTHT stock at the end of Week Three because HTHT has stronger CAN SLIM metrics. HTHT proceeded to have a minimal loss in Week Four a 17.45% gain in Week Five and a 3.22% Gain in Week Six. The last pro CAN SLIM example is selling ERII stock in favor of ATHM stock. This change led to an 8.05% and 4.84% gain in Weeks Five and Six.

The disadvantages of the CAN SLIM method also showed in the simulation. One example is CSBR in week one showed a 28.17% growth. Naturally many investors sold after this massive gain to secure gains. However, the RSI and RV metrics used in the simulation stayed strong and indicated not to sell the CSBR stock. The result of not selling was a 15.32% loss in Week Two. The lesson learned is to not follow the CAN SLIM metrics strictly like this simulation, but to rather use them as a guideline.

The Simulation proved to be very successful. A 19% gain in a six-week time line is a great achievement for an individual investor. The results show that using CAN SLIM method metrics to choose stocks can be a viable way to make money in investing. Figure 4.10 is the progression of Portfolio Value through the six weeks CAN SLIM method simulation.
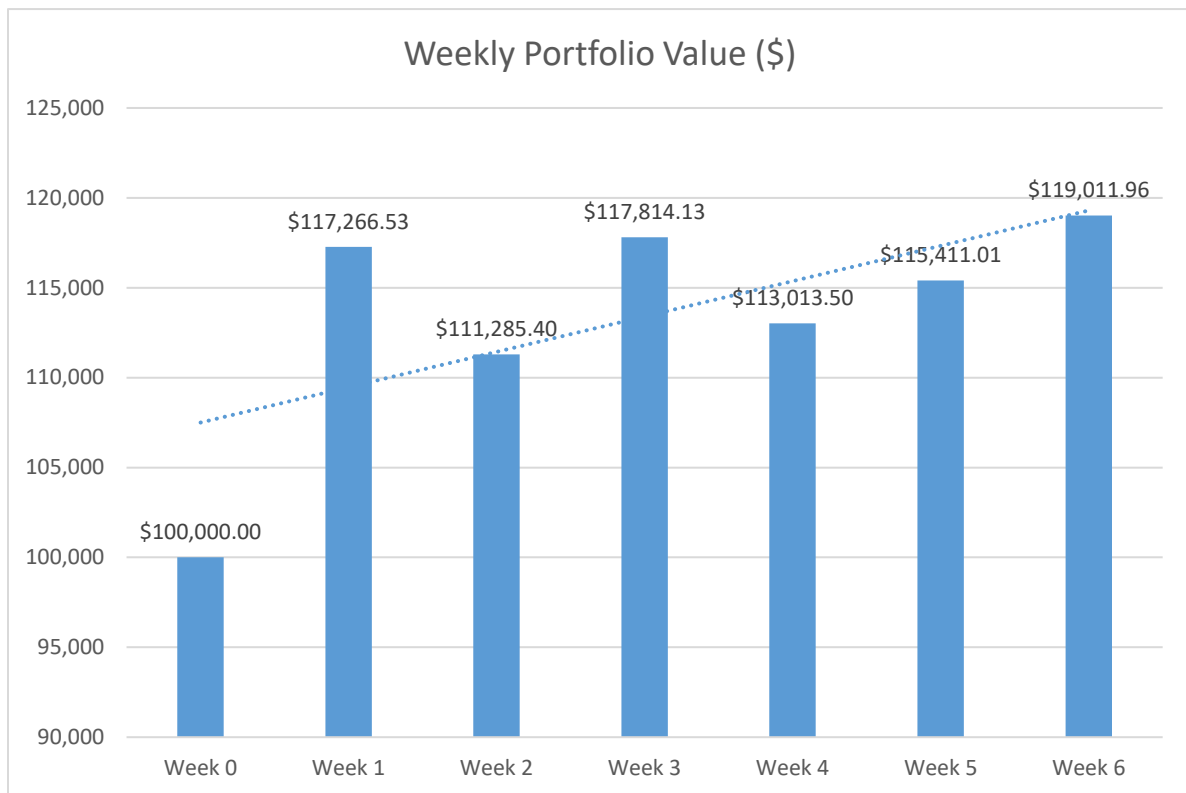
Figure 4.10 Weekly Portfolio Values CAN SLIM Simulation

5. Analysis

5.1 Comparison of Results

When comparing the results there is clear winner between the two investing strategies, especially when looking at it from a dollar perspective. The CAN SLIM Method generated $119,011.51 with a 19% total gain while the Robo-Advisor Method generated $103,587.60 with a 3.6% gain. Both simulations showed success The CAN SLIM method just had excellent results. Table 5.1 is the comparison of the percent changes weekly. The table shows that assumptions made before the simulation proved true. The CAN SLIM method had greater percent gains, and greater percent losses through the simulation. This confirms the high-risk, high-reward nature of the active investing. The passive-buy hold Robo-Advisor simulation has smaller percentage gains and losses indicating lower risk. Risk is important to note. In week two there was a $6000 total portfolio value loss in using the CAN SLIM Method. This type major loss would generally not happen in Robo-Advising, where as it can be a frequent occurrence in CAN SLIM as demonstrated by Week Two and Week Four losses.

Performance	Week One	Week Two	Week Three	Week Four	Week Five	Week Six
CSBR	28.17%	-15.32%	4.75%	-0.39%	-2.97%	-0.97%
GTN	24.29%	-4.08%	3.70%	-4.19%	-0.65%	5.71%
RUBI	16.02%	3.00%	11.47%	-4.93%	-7.32%	1.15%
LUV	0.78%	-	-	-	-	-
ERII	-	-	2.40%	-6.36%	-	-
HTHT	-	-	-	-0.10%	17.45%	3.22%
ATHM	-	-	-	-	8.05%	4.84%
Total CAN SLIM	17.26%	-5.07%	5.87%	-4.08%	2.12%	3.12%
Total ROBO	-0.06%	-2.16%	2.89%	-0.77%	1.20%	2.06%

Table 5.1 Weekly Percent Change Comparison CAN SLIM VS. ROBO

The total Portfolio weekly values of the two strategies are displayed together in Figure 5.1. The figure shows the slow, yet steady pace of Robo-Advising and the erratic behavior of the CAN SLIM Method. The figure is synonymous to the amount of work each Method needs to succeed. The CAN SLIM method takes a steep amount of work from the investor, while the Robo-Advisor client uses minimal effort. I found this juxtaposition to be compelling.
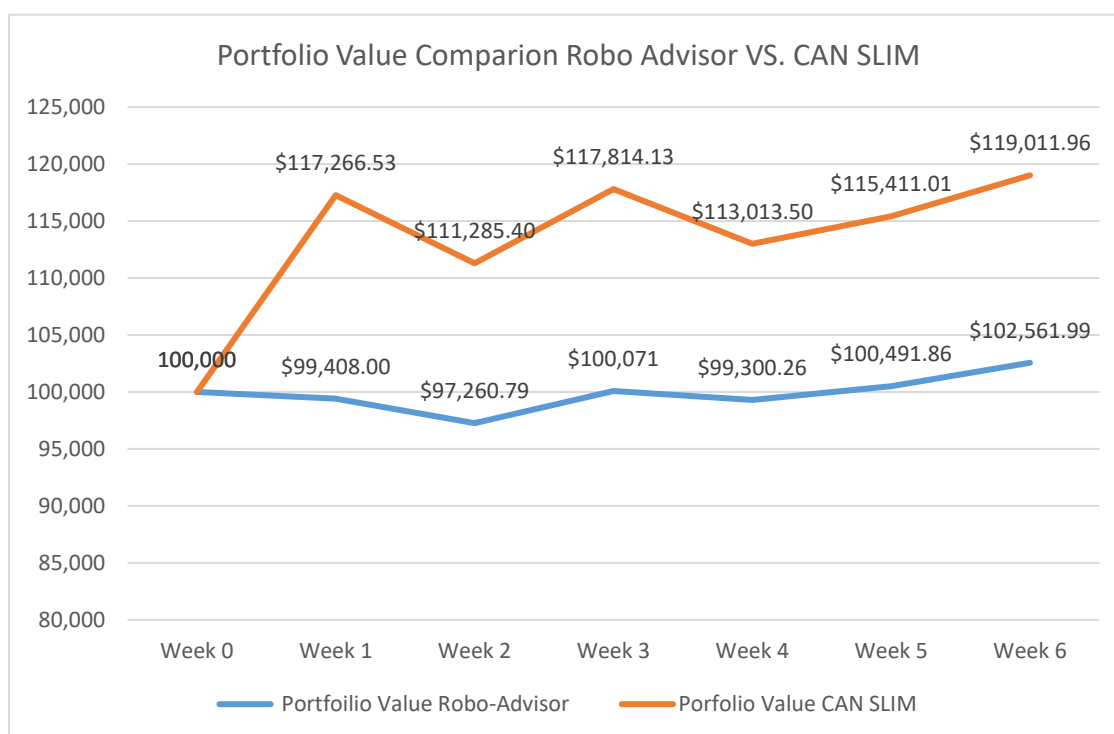

Figure 5.1 Weekly Percent Change Comparison CAN SLIM VS. ROBO

The profits per week favored the CAN SLIM method as expected. The profits for CAN SLIM were unpredictable but trended upwards, while the profits for Robo-Advisors steadily trended upwards. The profits for CAN SLIM really display the power of the CAN SLIM metrics. The RSI and RV picks proved to be very successful. The largest profit for CAN SLIM and Robo-Advisor was 17,226 and 2,810 respectively. The largest profit loss

was -5,981 and -2,147. The profits per week for each strategy is displayed in Figure 4.12
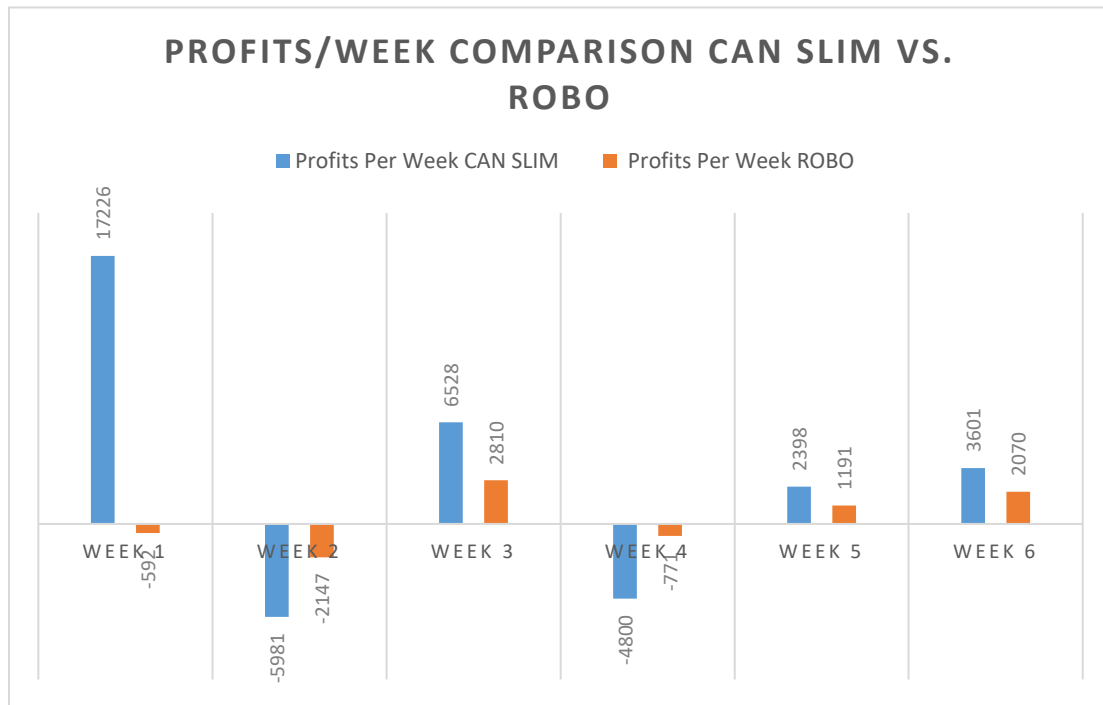
below.

Figure 5.2 Profits Per Week Comparison CAN SLIM VS. ROBO

5.2 Recommendations

Based on the comparisons above and my experience through this simulation, I would make the following recommendations.

CAN SLIM investing can be a very viable form of investing. During the simulation when screening for the CAN SLIM metrics, such an Earnings Per Share, Institutional Ownership, RSI, and RV, an investor can really narrow down their investing scope to a few number of stocks. These metrics helped me gain a significant profit in a short period of six weeks. I recommend CAN SLIM investing to an individual who is willing to learn about CAN SLIM. The individual must also be willing to put in the time to screen and re-allocate stocks. The risk of CAN SLIM is something to be aware of. There were massive swings up and down each week throughout my simulation. CAN SLIM worked great, but it may be lacking in sustainability in the long term. However, for a six-week Simulation CAN SLIM proved to be the better strategy to use.

Robo-Advisors also showed a good amount of success during the simulation. I would recommend Robo-Advisors to the common investor who is looking to stay in investments for the long term. Robo-Advisors do not take much time, and it is easy for the common investor to start. The investor would have minimum interaction with the investment, and over the long term would experience steady growth. The risk is also at a minimum for people who want to be more conservative with their money. The common investor who is looking for steady growth, and minimal effort should use Robo-Advisors over the CAN SLIM Method, despite the results of this simulation.

6. Conclusion

The objectives of my project were completed during this simulation. I learned how to use both investing methods, I analyzed the differences between them, and I conducted a successful simulation between the two. I feel that I can explain these methods to a curious investor. Specifically, how to use both Methods, and which one is the best fit for the individual investor's goals.

The simulation was a success for both strategies in terms of financial growth and knowledge learned. It was great to see the structure and possibilities of the new form of investing with Robo-Advisors. It was also useful to put number and metrics to the popular CAN SLIM Method and be very successful with those metrics. The positive results of this project gave me the knowledge and confidence to participate in the stock market. The project was a very beneficial experience. I will be sure to take this valuable knowledge and use it to help others in achieving their financial goals and help me reach my future financial goals.

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