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Abstract

An eight week stock market simulation was performed with four different trading strategies, using freely available internet resources. The simulation was conducted to analyze the effects of these different trading strategies on investments. Knowledge provided in this report regarding market influences, the history of the stock market, and the results of this simulation can be useful in making future investments more effectively.

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Chapter 1: Introduction

1.1 Goals

Our main goal for this project is to learn about and how to analyze the stock market through research and varying simulation methods. We hope that through this analysis that our ability to turn a profit (with multiple trading methods) will increase, with at least one of the simulations achieving a 50% return (to \$15,000) over the course of the simulation. We also hope to identify what types of investors would benefit most from each particular strategy.

Our research will include looking at the current state of the stock market, finding stocks in unrelated fields to minimize risk, and using the investment strategies gathered to choose stocks with the optimal amount of risk and reward. Though this is a short term simulation (8 weeks), examining the history of the stock market in addition to the current state can potentially help identify upcoming trends.

Each group member will start with \$10,000 to spend in the market, with each member designing his own investment strategies. As we continue to analyze the state of the market, we will also analyze our stock choices throughout the duration of the simulation. Once the simulation is completed, we will compare each method to see which was most effective.

1.2 History of the Stock Market

The stock market, as we know it today, is a part of everyday life for millions of people across the planet. It is a tool that drives the global economy and allows for stocks and bonds to be traded on a daily basis. However it was not always like this, in fact the stock market was not created as we know it today until 1792 in New York City. Prior to 1792, there were many primitive versions of the stock market throughout history dating all the way back to ancient Rome. The stock

market has evolved over time and eventually has turned into a driving economic force for the world.

The first signs of the stock market were evident in Ancient Rome; the Romans used a type of trading system to finance the production of public buildings or to perform civil services. The Societates Publicanorum offered investment shares called partes, which are now known as shares. Each parte had different prices based on the success of the building they were linked too and the prices fluctuated over time much like the stocks of the modern day. The partes were also tradable among merchants much like the stocks in the market today. Many historians believe that some more prominent Romans did indeed take this public practice and use it in private industry which would be extremely similar to the current system.

The Age of Exploration marked the next evidence of a stock system in history, dating back as early as the thirteenth century. During this time many voyages were made to distant and mysterious lands, such as the Americas. However, these voyages had to be financed somehow and this was done by dividing of shares to private investors. Investors would split up the cost of the voyage, which is very similar to buying shares of a company in today's world. In return the investors would receive some of the riches found during said expedition. As this investment system became more prominent the merchants decided to bond together to protect their own economic interests and they created the Hanseatic League. This League of merchants offered private shares of expeditions and exploration voyages to private investors in order to finance the trips. It is very similar to the stock market today because the trips can be thought of as stocks; people would invest in the trips and possibly get a profitable return if treasures were found. The Hanseatic League covered most of Northern Europe and included the countries of Germany, Poland, Russia, The Netherlands, Belgium, Norway, England, Sweden, and others as well.

After the Hanseatic League, in 1531 the world's oldest financial institution was created in Antwerp, Belgium. It only traded promissory notes and bonds but was a major step towards an organized stock market. In 1571 in England Queen Elizabeth modeled the Royal Exchange after Antwerp. They were very similar except the English Royal Exchange included a small group of brokers who offered profitable share interests in various expeditions around the country. From there in the early 1600's the Dutch East India Company was created in Amsterdam. It was developed to make trading of spices and goods from Europe to India easier, and it was completely controlled by directors, which was unprecedented. In the past the shares were governed by merchants and the investors themselves but in the Dutch East India Company the directors controlled the business. The Shareholders of the expeditions also received a sixteen percent dividend yearly and the shares were issued on paper instead of by word of mouth. In fact the world's oldest known paper share record to date is from the Dutch East India Company in 1606. After the Dutch East India Company was formed, in 1602 the Amsterdam Exchange was formed on the New Bridge of Amsterdam, and trading was done entirely in bills and small shares. Slowly the world was getting closer to an organized stock market.

In London as brokering grew more popular, the brokers were kicked out of the Royal Exchange due to behavioral issues on the trading floor. The brokers would not quit though, they began trading in coffee shops along what was known as exchange alley. In almost a black market type of business the brokers kept all records themselves and traded shares in an unorganized manner until in 1698 John Castaing started a master list of all the shares being traded in Europe and their respective prices. This master list and the popularity of the trading led to the formation of the London Stock Exchange in 1773.

After the London Stock Exchange opened in 1773 America gained its independence in 1776. By 1790 the first United States stock exchange opened in Philadelphia and it was called the Board of Brokers. The Board of Brokers is now part of the NASDAQ which is a particular market in the NYSE. The NYSE (New York Stock Exchange), today's major stock exchange globally, was formed shortly after the Board of Brokers in 1792. On May 17th, 1792 a group of twenty four brokers signed The Buttonwood Agreement outside of 68 Wall Street in New York City. The agreement was named after the giant sycamore tree they signed it under. The Agreement stated that the brokers would only trade with one another at a commission rate of .25%. From there the small group grew and in 1817 they officially changed the group's name to the New York Stock and Exchange Board. With the name change trading practices officially redefined around a call system starting at 11:30 AM. One man would stand up and call out the name and price of the stock for sale and then the brokers on the floor would trade, buy, or sell the stocks for that company. Once one company's business was completed the man would move onto the next stock and so forth. The days were not long as there were only about thirty stocks to start with. In 1835 a fire destroyed the current stock market building along with over seven hundred other buildings in New York forcing the Stock Exchange to move to another location. From here business boomed growing from about a few hundred shares per day in 1830 to one million shares sold per day by 1886. In 1863 the exchange formally accepted the name New York Stock Exchange (NYSE for Short), and then in 1865 the NYSE moved to 10-12 Broad Street. In 1869 the NYSE became more official and implemented a system to regulate who gets a seat on the exchange floor, in order to get a seat you must buy the seat from the retiring member. This system is still in place today and up until 2000 the cheapest seat sold was \$17,000 in 1942 and the most expensive seat sold was \$2,650,000 in 1999.

In 1871 the stocks were called out continuously instead of one by one for the first time marking the beginning of the specialist. The specialist is a broker who controls all the business for one company at a kiosk. For example a broker for the company Google (symbol - GOOG) would stay at his kiosk and those wishing to do business with Google shares would come to him throughout the day.

1878 marked the first time a telephone was used to make a trade on the exchange floor, and in 1903 the NYSE moved to 18 Broad Street which remains its current home to this day. From 1921 to 1929 the market saw unprecedented expansion going from 171 million shares a day in 1921 to over one billion shares a day in 1929. However, in 1929 the market crashed marking the beginning of the Great Depression. In 1929 the market lost 12.8% of its value in a couple days, but by 1932 it had lost 89% of its total value. President Franklin Delano Roosevelt passed three acts that specifically helped the NYSE to reorganize itself, he passed the Banking Act (1933) which prohibits commercial banks from participating in investment business, The Securities Act (1933) which made the companies and brokers disclose all information about a stock before it was sold. This meant that a bad investment could only be made if the buyer knew it was most likely a bad investment based on the facts. The final act he passed regarding the NYSE was the Securities Exchange Act (1934) which created the Securities and Exchange Commission. The SEC to this day is the primary enforcer of the United States federal laws when it comes to the NYSE. The NYSE also realized it could not be a private entity and became open to the public to help with the economy. It organized itself more efficiently electing a board of governors and a full time president of the NYSE. The NYSE operated this way until 1971 when the board of governors became a board of directors.

In 2001, after the attacks on the World Trade Centers, the NYSE closed for four days, this was the first closure of the stock market since 1933. In more recent history, Visa went public with the highest initial public offering in NYSE at history opening at 17.86 billion dollars. Later that year the global mini crash of 2008 began on September 16th, 2008. The crisis was caused by a failure in many of the larger financial institutions. The crash caused a drop in the Dow Jones Index of 54% until the market finally began to recover on March 6th, 2009.

Stock trading has been revolutionized in the 21st century with the internet becoming a much more common trading platform. By using the internet, one can view stock prices in real time, as well as the ability to buy and sell with nothing more than a computer and an internet connection. The internet also provided the resources necessary to easily lookup stock records and compare stocks. For those who wish to learn about the market and either don't have the money, or don't wish to take on the risk, stock simulators are widely available. For our project, we will be utilizing Investopedia's stock simulator game.

1.3 Stock Market Terminologies

The following frequently-used terms form a good basis for any investor to understand some fundamental terminology in the market.

- **Stock.** A form of security that represents a claim on the part of the corporation's assets and earnings. Two primary types of stock exist in market today; common and preferred. Common stock typically entitles the owner to a voting process at shareholders meetings and receive dividends. Preferred stock generally does not have voting rights but stakes a higher claim on assets.
- **Market price.** The amount of money a willing buyer pays to acquire something from a willing seller.

- **Market Value.** The price at which a stock or bond is trading for and presumably be purchased or sold. It is calculated by multiplying number of shares outstanding by the current price of a firm's shares.
- **Dividend.** The Portion of the company's profits which is usually distributed to the company's shareholders. This is done normally on a scheduled basis.
- **Liquidation.** Converting prevailing assets to cash.
- **Options.** The right to purchase and sell a particular share at a particular price within an allotted period.
- **NASDAQ.** The largest electronic-based stock exchange system in the United States.
- **Annual Report.** The annual return of an investment is its calculated compounded annual growth rate.
- **Activity Ratio.** The firm's effectiveness indicator, it shows the ease and speed of the company to convert various accounts and receivables into sales and cash
- **Adjustment in Conversion Terms.** Convertible preferred stock can be exchanged for a fixed number of common shares in accordance with the terms set by the firm. Adjustment in conversion terms can be made so that the holder of the convertible preferred stock does not get affected by events like common stock splits.
- **Gross Earnings.** The launching point for determining how much money in taxes will be paid to federal and state governments. Gross income is not limited to wages, salaries, and business revenues. It also includes interest, dividends, and pensions.
- **Net Earnings.** Represents the money that the shareholder will take home after tax.

- **Margin.** This allows investors to buy securities by borrowing money from a broker. The margin is the difference between the market value of a stock and the loan a broker makes.
- **Market Capitalization.** The total dollar value of all outstanding shares. Computed as shares times current market price. Capitalization is a measure of corporate size.
- **Beta.** The measure of an asset's risk in relation to the market or to an alternative benchmark or factors. For example, a security with a beta of 1.5, will have move, on average, 1.5 times the market return. According to asset pricing theory, beta represents the type of systematic risk that cannot be diversified away.
- **Depreciation.** The amount of money set aside for replacement of assets
- **After-hours deal.** A transaction done after the stock market closes at 4:00 pm. The transaction is dated for the next day.

1.4 Plan of the IQP

The IQP will consist of 4 simulations, each covering one trading strategies. The 4 strategies are: Value-Based investing, long term investing, day trading, and margin trading. Each simulation will choose its own portfolio with about 10 companies, which can be changed as the simulation goes and market condition changes. The simulation will last 8 weeks. Analysis of our transactions will be done at the end of each portfolio. The 4 simulations will be compared to see which one was the best/worst performer. Experiences and lessons learned will be summarized.

Chapter 2: Investment Strategies

For this project, there will be four different kind of investing strategies used in an attempt to increase our investment. Each method has its own level of risk and reward. Some methods will be very low risk but will not be able to generate a large profit. Other strategies are very high risk where a large amount of money could be lost almost immediately, but they could have the potential to make a large amount of money as well. Typically, wealthier investors will use higher risk strategies because they have more money to lose, where people who are not as wealthy will try to minimize their risk. There are many ways to generate a profit through the stock market, and below are the methods that will be discussed in the rest of the paper.

2.1 Value Based Investing – Greenblatt Method

Joel Greenblatt's stock valuation formula has provided him with a 17 year annual return of 30.8%, and according to him beats the S&P 500 96% of the time¹. Greenblatt describes "good companies" to buy as those that have relatively cheap stocks with a high earnings yield and a high return on capital. The premise of Greenblatt's investing strategy is the mindset of buying undervalued stocks, and capitalizing on stocks that have fallen out of favor from investors for irrational reasons. Greenblatt's formula is considered by some as updated version of Ben Graham's 'value investing' approach, which was introduced in the 1960's.

Formula Guidelines²

- 1) Establish a minimum market capitalization (usually greater than \$50 million).
- 2) Exclude utility and financial stocks.
- 3) Exclude foreign companies (American Depositary Receipts). Greenblatt prefers to invest domestically because it's within his circle of competence and he hasn't run out of opportunities.

- 4) Determine company's earnings yield = $\text{EBIT} / \text{enterprise value}$.
- 5) Determine company's return on capital = $\text{EBIT} / (\text{net fixed assets} + \text{working capital})$.
- 6) Rank all companies above chosen market capitalization by highest earnings yield and highest return on capital (ranked as percentages).
- 7) Invest in 20–30 highest ranked companies, accumulating 2–3 positions per month over a 12-month period.
- 8) Re-balance portfolio once per year, selling losers one week before the year-mark and winners one week after the year mark.
- 9) Continue over a long-term (5–10+ year) period.

Obviously the long term portion of Greenblatt's method cannot be tested over an 8-week simulation, but we are interested to see if it still performs well in the short term.

2.2 Long Term Investing

Long term investing is a relatively low risk strategy that is one of the most popular ways for investors to generate profit. What the goal of long term investing is for investors to identify publicly traded stocks that they believe will create the most profit for them over a long period of time. The goal for investors is to pick stocks, which they can buy at a low price originally and hold on to them for many years, as they grow larger. This simulation will use a specific type of long term investing called the Greenblatt Method, otherwise known as value based investing. What this method does is identify stocks, which are relatively cheap and also have a high earnings yield as well as a high return on capital. The premise of this strategy is the mindset of buying undervalued stocks, and capitalizing on stocks that have fallen out of favor from investors for irrational reasons.

2.3 Day Trading

Since the Internet was created, day trading has picked up in popularity because it gives people the option to make real time transactions throughout the day. The point of day trading is to make many transactions throughout the day in a short period of time in effort to create quick, small profits. Day trading is a high risk strategy because investors do not always have enough information on what they are investing in.

2.4 Margin

Selling on margin refers to the ability investors have to borrow investing power from brokers to buy and sell stocks. An investor who wants to open a margin account has to have at least \$2000 in their account, and they have up to 50% of the purchase price in buying power. For example, if an investor had a margin account with \$10,000, they would have \$20,000 worth of buying power. The issue with this method is that it is very risky because if an investor invests with the buying power they borrowed from their broker and a stock's value falls, the investor will lose twice what they would have lost without investing with all of their buying power.

2.5 Overnight High Frequency Trading

This method is based very much on assumptions and the principle of equilibrium. At the end of the market day, an investor will identify which stocks plummeted the most throughout the day and buy them at their value when the market closes. As soon as the market opens the next morning, the assumption is that a stock will raise a certain amount in the first five minutes of the morning. Ideally when using this method, the stocks invested in at the end of the day will cost \$3 or less so a higher quantity can be invested in and more money can be made when it increases the

next morning. This method is low risk; low reward because the stock will go up a very minimal amount in the morning, but would also only fall a very minimal amount in the morning.

Chapter 3: Simulation 1 – Value Based Investing

The following four chapters will be an analysis of these four potential trading strategies, over eight weeks, each beginning with \$10,000.

3.1 Introduction

Simulation 1 will be given \$10,000 to invest over the course of eight weeks. Investopedia will be used to simulate present stock prices, and commissions for each trade will be \$0.99. Trades will be made mainly based upon Joel Greenblatt's "Value Based Investing (VBI)" formula, though this strategy will be used in conjunction with other methods throughout the simulation. There will be analysis of at least 32 different companies over the course of this eight week simulation, and trades made in at least 10. Stocks will be ranked and chosen using the VBI formula and identifiable trends, and will either be held or sold depending on their performance. Analysis of trades and stocks analyzed but not purchased will be given in a table, with a summary of why trades were or were not made. Value Based Investing typically a long term method, so it's possible that many stocks purchased in the early weeks will be held through the end of the simulation. To protect the portfolio from this risk, stocks with market caps above one billion dollars will be sold if the price falls below 5% below the original purchase price. Those with market caps under one billion dollars will be held unless they fall 10% below the purchase price. Companies must also have a market cap greater than 50 million to be considered, as larger companies tend to have less volatility. Some exception will be made for smaller companies that have easily identifiable trends, such as those who have been heavily effected in the past by the holiday shopping season.

Value Based Investing consists of 2 simple formulas, Return on Capital and Earnings Yield, the equations to which are detailed in section 2.1. Using the VBI method, stocks can be purchased and left to sit if there are no abrupt changes or critical new information about a company.

This method is fairly conservative and as such carries much less risk/reward in the short term compared to methods like day trading, a method in which the trader must be constantly viewing stock updates. The method tends to lean toward loss minimization, with strong companies whose stock prices appear to be undervalued.

We plan to keep larger companies that consistently perform well in our portfolio for the duration of the simulation. Since these stocks are typically more expensive and will be taking up a greater share of our portfolio, it's important to review them on a weekly basis to see if they still provide value, or if there are more potentially lucrative options available. Three of these types of companies that we plan to make early investments in are Apple, Cisco, and Weight Watchers.

Since the duration of the simulation is only 8 weeks, seasonal trends could potentially play a large role in finding profitable stocks. Since this simulation is running in the Fall/Winter months, we will try to identify stocks that are highly ranked in the VBI formula, and have been positively affected by the holiday season in prior years.

3.2 Company Selection

The following companies are those that we will be trading within the duration of the simulation.

Apple (AAPL)

Out of the seven stocks analyzed (with market caps > one billion), Apple posted the highest return on capital (**26.38%**), a number in which strong emphasis is placed when buying stocks using the Greenblatt method. That, combined with a well-founded earnings yield of **6.14%**, makes Apple stock a prime candidate for investment using the Greenblatt method. With the release of the new iPhone 6 and 6 Plus, Apple's stock price is likely to see some change in the next quarter.



Figure 3.1.1 Apple Stock Post-IPhone 6

Though Apple’s performance dipped after the release of the iPhone 5, there is evidence here that iPhone releases generally yielded positive returns for stockholders. With the release of two phones, and the fact that Apple has currently underperformed the S&P 500 by 96%, we believe that Apple’s share price will increase in the coming weeks.

Kellogg (K)

Since trading around \$65/share in August, Kellogg’s stock price has dipped to under \$62 in recent weeks. With a strong earnings yield (**8.18%**) and return on capital (**17.02%**), we believe the stock will bounce back up to the \$64-66 dollar range sooner rather than later.

Cisco (CSCO)

Networking giant Cisco is said to be in the middle of a massive internal reorganization, in which they would divide its switching and routing engineering into two groups (software and hardware). With as many as 25,000 employees affected should this occur, and investors fear over slowing growth, Cisco appears to be close to a turning point that will likely affect its share price (these two groups account for 60% of Cisco’s \$21.7 billion in annual revenue). Solid earnings and low debt also make this stock attractive. These factors, combined with a persuasive earnings yield

(**5.98%**) and return on capital (**10.87%**), lead us to believe that Cisco could be a rewarding investment.

Weight Watchers (WTW)

Along with strong earnings yield (**11.52%**) and return on capital (**18.49%**), Weight Watchers has seen increasing profit margin over the past year.

China XD Plastics Co. (CXDC)

Though CXDC reports much higher earnings yield (**44.96%**) and return on capital (**19.22%**) than its competitors, they spend much less on research and development, so the upside may be limited here. However based on the VBI equations, this stock was too good to pass up and at least hold in the short term.

Alaska Communications Systems Group Inc. (ALSK)

With compelling indicators (earnings yield **130.9%** and a return on capital of **55.40%**) Alaska Communications Systems appears to have large potential for growth.

Alliance Fiber Optic Products Inc. (AFOP)

At \$12.61 per share, Alliance Fiber Optic is currently trading at nearly 50% under its 52 week high (\$22.60). AFOP comes in with excellent financials, but some uncertainty. This is exactly the type of company value based investors look for, as uncertainty is where returns are made. Even with all of their recent insider selling, CEO Peter Chang and others own over 10 percent of the company, so any loss in stock price would have even greater impact on these insiders, who are the ones making decisions for the company's future. These factors, along with an earnings yield of **9.53%** and return on capital of **26.64%**, warrant purchasing shares for our portfolio.

Mind CTI LTD (MDNO)

MNDO posted a good earnings yield (**7.32%**) and strong return on capital (**9.91%**) this year, but one of the most attractive elements to us was that they are running on zero debt. With a strong P/E ratio (14), zero debt and a strong VBI, we believe this stock has room to grow over the course of the simulation.

Safeway Inc. (SWY)

Safeway has a fantastic earnings yield (**40.24%**) and return on capital (**37.37%**), especially for a large company (market cap \$7.87 billion). Another positive sign is that the director of Safeway, Mohan S Gyan, just purchased 20,000 shares.

Kingold Jewelry Inc. (KGJI)

Kingold Jewelry, Inc., located in Wuhan City, one of China's largest cities, was founded in 2002 and is one of China's leading designers and manufacturers of 24-karat gold jewelry, ornaments, and investment-oriented products. The Company sells both directly to retailers as well as through major distributors across China. Kingold has received numerous industry awards and has been a member of the Shanghai Gold Exchange since 2003. Along with a very high earnings yield (**62.53%**) and promising return on capital (**19.91%**), Kingold Jewelry recently paid out a \$0.08/share dividend to investors.

United Parcel Service (UPS)

UPS saw a 12 point increase between mid-October and mid-December last year, and has consistently seen a rise in stock prices over the past 5 years during the holiday season. This, along with a strong return on capital (**21.36%**) makes this a convincing investment. UPS also recently added new pickup locations for customers³, with stocks rising 1.3% after that news.

Delta Airlines (DAL)

Delta Airlines has seen a share increase of over 50% over the past year, in part due to high earnings growth. After airline and travel shares fell across the board due to worries about Ebola, we believe Delta has room to bounce back, especially during the holidays when people are more likely to travel. High earnings yield (**36.48%**) and return on capital (**59.51%**) add to the justification that Delta has potential to be quite profitable during the coming months.

3.3 Week 1

The four stocks purchased this week (AAPL, K, CSCO, and WTW) will ideally serve as the basis for our portfolio, with consistent, albeit likely small gains. With information gathered using Greenblatt's VBI, we concluded that these stocks have room for growth at their current prices. All of these stocks have market caps of over one billion dollars, meaning that they are more likely to be safer long term investments than a smaller company. We consider the stocks purchased this week to serve as a strong foundation for our portfolio, offsetting some risk taken in future weeks. The transactions for these stocks can be seen in Figure 3.3.1

Weight Watchers (WTW)

At over an 8% increase this week, Weight Watchers provided the highest return for us in week one. It also came in with the highest earning yield, so in the coming weeks we will look to see how strong of a correlation, if any, those two numbers have. Total gains/losses for all stocks in the portfolio can be seen in Figure 3.3.2.

Cisco (CSCO)

As expected, Cisco stayed very stable this week. We anticipate Cisco's stock to remain stable until the quarter three earnings report on Wednesday November 12th.

| Date | Symbol | buy/ | Price | Shares | Net Cost/ | Profit/ | Total | Total Profit |
|----------------|--------|------|----------|--------|------------|---------|------------|--------------|
| | | Sell | | | Proceeds | Loss | Cash | |
| 9/23/2014 9:58 | AAPL | Buy | \$100.60 | 8 | \$805.79 | | \$9,194.21 | \$0.00 |
| 9/23/2014 9:58 | K | Buy | \$62.22 | 30 | \$1,867.59 | | \$7,326.62 | \$0.00 |
| 9/23/2014 9:58 | CSCO | Buy | \$24.87 | 25 | \$622.74 | | \$6,703.88 | \$0.00 |
| 9/23/2014 9:58 | WTW | Buy | \$25.44 | 16 | \$408.03 | | \$6,295.85 | \$0.00 |

Figure 3.3.1 Week 1 Transactions

3.2 Week 2

After purchasing the larger stocks from our company selection in week one, week two was focused on purchasing the smaller companies, with market caps between 50 and 250 million. Our goal was to invest in these cheaper stocks at high volume, in order to quickly increase the worth of our portfolio. Of course the risk in trading this way is that if stocks dip even a few points, the worth of our portfolio could drop quickly as well. Using Greenblatt's value based investing method, we looked for stocks that had both a high earnings yield and high return on capital.

Alaska Communications Systems Group Inc. (ALSK)

Despite strong indicators (high EY and ROC) prices of ALSK dipped significantly as the week progressed, falling over 10%, and triggering a stop loss order on the morning of Wednesday October 1st. With such a high return on capital however, we may reinvest if share prices continues to fall. This transaction and all others for the week can be seen in Figure 3.4.2.

Summary

Stop loss orders were placed on each stock. Those with a market cap over one billion dollars were placed at 5% of the purchase price, while the smaller companies (market caps between 50 and 250 million) were placed at 10%.

10 shares of Kellogg were sold in order to increase our shares in Weight Watchers, and provide our portfolio with more liquidity. Kellogg has an Earnings conference call on October 30th, 2014, so we may look into increasing shares if the report is positive. In August, Kellogg hired an advisor to evaluate a potential bid for cookies and snack maker United Biscuit⁴. Should negotiations start up, shares of Kellogg could go up as well.

Stocks were down across the board this week, with the Dow Jones Industrial Average falling each day until a rebound midday Thursday. Many attribute this fall to concern over ongoing pro-democracy protests in Hong Kong⁵, the nation's fight against ISIS, worries about Ebola and Octobers reputation as a poor month for stocks (i.e. crashes in Oct. 1929 and 1977). Despite fear from investors stocks have actually seen a 1% rise on average in October over the past 50 years.

| Date | Symbol | buy/ | Price | Shares | Net Cost/ | Profit/ | Total | Total Profit |
|-----------------|--------|------|---------|--------|-----------|-----------|------------|--------------|
| | | Sell | | | Proceeds | Loss | Cash | |
| 9/29/2014 10:02 | CXDC | Buy | \$5.83 | 150 | \$875.49 | | \$5,420.36 | \$0.00 |
| 9/29/2014 10:04 | ALSK | Buy | \$1.62 | 200 | \$324.99 | | \$4,369.85 | \$0.00 |
| 9/29/2014 10:04 | MNDO | Buy | \$3.09 | 75 | \$232.74 | | \$4,694.84 | \$0.00 |
| 9/29/2014 10:04 | AFOP | Buy | \$12.61 | 39 | \$492.78 | | \$4,927.58 | \$0.00 |
| 9/29/2014 10:06 | CXDC | Buy | \$5.83 | 150 | \$875.49 | | \$3,494.36 | \$0.00 |
| 9/29/2014 10:30 | CXDC | Sell | \$5.85 | 150 | \$876.51 | \$1.02 | \$4,370.87 | \$1.02 |
| 10/1/2014 11:18 | ALSK | Sell | \$1.44 | 200 | \$287.01 | (\$37.98) | \$4,657.88 | (\$36.96) |
| 10/2/2014 9:58 | WTW | Buy | \$27.72 | 19 | \$527.67 | | \$4,737.32 | (\$36.96) |
| 10/2/2014 9:58 | K | Sell | \$60.81 | 10 | \$607.11 | (\$16.08) | \$5,264.99 | (\$53.04) |

Figure 3.4.1 Week 2 Transactions

3.5 Week 3

The final companies from our company selection were purchased this week. With the amount of volatility in the market over the past week and a half, we have changed the stop loss

orders to 10% for companies with market cap over one billion dollars, and 15% for companies with market caps below one billion dollars in order to hold onto stocks for as long as possible without devastating loss to our portfolio. Transactions for this week can be seen in Figure 3.5.1.

October 8, 2014

After a day of steep declines, stocks saw their biggest gains of the year after the Federal Reserve's latest policy meeting, which indicated that the Fed is reluctant to raise interest rates in the near future⁶. The Dow Jones industrial average jumping 274 points on the day, and the S&P 500 went up 33 points.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Cash | Total Profit |
|------------------|--------|--------------|---------|--------|-----------------------|-----------------|---------------|-----------------|
| | | | | | | | | |
| 10/6/2014 14:37 | CXDC | Sell | \$5.24 | 150 | \$785.01 | (\$90.48) | \$5,522.33 | (\$143.52) |
| 10/7/2014 9:58 | SWY | Buy | \$34.26 | 45 | \$1,542.69 | | \$3,979.64 | (\$142.53) |
| 10/7/2014 14:12 | KGJI | Buy | \$1.24 | 500 | \$619.39 | | \$3,360.25 | (\$142.53) |
| 10/8/2014 11:39 | CXDC | Buy | \$5.16 | 115 | \$593.82 | | \$2,766.43 | (\$142.53) |
| 10/8/2014 11:42 | ALSK | Buy | \$1.44 | 300 | \$432.99 | | \$2,333.44 | (\$142.53) |
| 10/9/2014 10:00 | UPS | Buy | \$98.24 | 2 | \$197.47 | | \$692.31 | (\$142.53) |
| 10/9/2014 10:00 | DAL | Buy | \$35.51 | 24 | \$853.23 | | \$889.78 | (\$142.53) |
| 10/9/2014 10:00 | UPS | Buy | \$98.24 | 6 | \$590.43 | | \$1,743.01 | (\$142.53) |
| 10/10/2014 10:00 | CSCO | Sell | \$23.51 | 25 | \$586.76 | (\$35.98) | \$1,279.07 | (\$178.51) |
| 10/10/2014 10:36 | AFOP | Sell | \$11.30 | 39 | \$439.71 | (\$53.07) | \$1,718.78 | (\$231.58) |
| 10/10/2014 10:51 | WTW | Sell | \$23.96 | 16 | \$382.37 | (\$25.66) | \$2,101.15 | (\$257.24) |

Figure 3.5.1 Week 3 Transactions

3.6 Week 4

October 17th

Another volatile week in the stock market concluded today, with the Dow Jones Industrial Average rallying 263 points (1.6 percent). The CBOE volatility index, a measure of uncertainty in

the market, dropped 13 percent, though it is still up more than 74 percent from a month ago⁷. Phil Orlando, chief market strategist at Federated Investors said that this spike in volatility was an “engraved invitation” to put more money into the market.

More positive signs for the market include the 25 percent decline in crude oil prices over the past 4 months, translating to a 15 percent drop in prices that consumers pay at the pump. Orlando adds that “Every penny decline in retail gas prices adds a billion dollars of discretionary spending to the U.S. economy. He believes that this bodes well for retailers and other companies during the holiday season, as consumer spending accounts for 70 percent of U.S. economic growth. Mortgage rates have also fallen below 4 percent, which should help boost consumer spending as well. With this information, we confidently re-invested in two stocks (**Alliance Fiber Optic** and **Cisco**) that we had previously sold off, anticipating increasing growth in the market. These buys and all week 4 transactions can be found in the Figure below.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Cash | Total Profit |
|------------------|--------|--------------|---------|--------|-----------------------|-----------------|---------------|-----------------|
| | | | | | | | | |
| 10/13/2014 10:08 | MNDO | Sell | \$2.74 | 75 | \$204.51 | (\$28.23) | \$2,305.66 | (\$285.47) |
| 10/14/2014 13:46 | CSCO | Buy | \$23.26 | 15 | \$349.89 | | \$1,955.77 | (\$285.47) |
| 10/17/2014 12:12 | AFOP | Buy | \$12.61 | 20 | \$253.19 | | \$1,702.58 | (\$285.47) |

Figure 3.6.1 Week 4 Transactions

3.7 Week 5

October 20th

Apple (AAPL)

Apple shares have moved an average on 5 percent off of earnings over the past eight quarter. With this information in hand and an earnings report coming up at 4pm on October 20th, we attempted

to take advantage of this by purchasing 7 more shares in the company (Figure 3.7.2). After the earnings report today, shares jumped over 6 percent, including a 4 percent increase after hours.

Delta Airlines (DAL)

Higher than expected profit reports from airline companies **Southwest (LUV)** and **United Continental (UAL)**, as well as a variety of other sectors, are an encouraging sign for Deltas stock future. Since purchased, Deltas stock has increased 11.21 percent, from \$35.51 to \$39.49.

October 24th

United Parcel Service (UPS)

In a busy span of weeks for earnings reports, UPS gave some encouraging signs for the coming months. They announced \$1.32 earnings per share for the third quarter of 2014, a 13.8 percent improvement over 2013's third quarter. Operating profit also increased 8.3 percent, a result of balanced growth across domestic packages, international packages, and supply chain & freight. Expectations for the company during the upcoming holiday season include an 11% increase in deliveries in December⁸. Another positive from the earnings report: UPS also reaffirmed their increased earnings per share guidance from \$4.90 to \$5.00. UPS certainly seems primed for growth in November/December.

October 30th

Kellogg (K)

Kellogg finally starting showing some positive signs today, finishing at \$64.25 per share. This is still below our original prediction of \$65-66 a share.

Weight Watchers (WTW)

Weight Watchers stock has been one of the most volatile stocks in our portfolio since being purchased. Since September 23rd, it has swung between \$24 and \$29 dollars per share. Despite reporting profits of 67 cents per share on this Thursday, October 30th (an amount that beat forecasts by 48 cents), investors' concern over their plan to increase spending in 2015⁹ to bring customers back caused shares to drop 16% Thursday. We believe this was an over-reaction by investors, and we should see it bounce back tomorrow, as sales for this past quarter beat estimates (\$345.2 million in comparison to estimates of \$337.52 million).

Summary

Increases in a various number of sectors, as well as a majority of positive earnings reports have pushed our portfolio into the black for the first time since week one. These positive signs were reflected in our portfolio, as total assets ended at \$10,017.66 Friday. With stocks that have proven to be more volatile in the past few weeks (i.e. **Weight Watchers** and **Alliance Fiber Optic**), we may look to sell some shares in order to purchase more shares of companies with higher earnings yield/return on capital that we believe will improve during the holiday season, such as **Delta** and **UPS**, in order to increase returns.

| Date | Symbol | buy/ | Price | Shares | Net Cost/ | Profit/ | Total | Total |
|------------------|--------|------|---------|--------|-----------|---------|------------|------------|
| | | Sell | | | Proceeds | Loss | | |
| 10/20/2014 13:12 | AAPL | Buy | \$99.22 | 7 | \$695.53 | | \$1,007.05 | (\$285.47) |

Figure 3.7.1 Week 5 Transactions

3.8 Week 6

After **Delta** and **UPS** hit year-long highs, we temporarily sold off shares we had in there companies, believing that they would fall As discussed near the end of the week 5 summary, we

re-adjusted the number of shares we had for some of the more volatile companies in order to invest a larger percentage of our portfolio into both **UPS** and Delta Airlines (**DAL**). During this readjustment, we temporarily sold off shares of **Delta** and **UPS**, attempting to take advantage of the fact that they had both hit year-long highs and there was speculation that they could dip slightly. This slight dip did occur for **Delta**, but not for **UPS**. Neither had their share price changed enough to impact the portfolio by more than a few dollars.

The increased shares into **Delta** and **UPS** leave our portfolio with little cash (**\$188.64**), but a very favorable return (**15.16%**) and strong potential for growth during the remaining weeks of the simulation. When looking at the total profit in Figure 3.8.1, the portfolio is trending in a positive direction.

| Date | Symbol | buy/ | Price | Shares | Net Cost/ | Profit/ | Total | Total Profit |
|-----------------|--------|------|----------|--------|------------|----------|------------|--------------|
| | | Sell | | | Proceeds | Loss | Cash | |
| 11/5/2014 10:03 | UPS | Sell | \$107.40 | 8 | \$858.21 | \$70.31 | \$1,870.02 | (\$215.16) |
| 11/5/2014 10:06 | DAL | Sell | \$41.86 | 24 | \$1,003.69 | \$150.46 | \$2,873.71 | (\$64.70) |
| 11/5/2014 14:43 | DAL | Buy | \$41.79 | 30 | \$1,254.69 | | \$1,619.02 | (\$64.70) |
| 11/5/2014 14:44 | UPS | Buy | \$107.45 | 17 | \$1,827.64 | | (\$208.62) | (\$64.70) |
| 11/5/2014 14:45 | UPS | Buy | \$107.52 | 3 | \$323.55 | | (\$219.51) | (\$64.70) |
| 11/5/2014 14:45 | SWY | Sell | \$34.85 | 9 | \$312.66 | \$4.32 | \$104.04 | (\$60.38) |
| 11/5/2014 14:57 | WTW | Sell | \$25.31 | 9 | \$226.80 | \$11.16 | \$7.29 | (\$49.22) |
| 11/5/2014 14:57 | CXDC | Sell | \$5.21 | 35 | \$182.35 | \$1.75 | \$189.64 | (\$47.47) |

Figure 3.8.1 Week 6 Transactions

United Parcel Service (UPS)

Less than two weeks after their strong earnings report, The United Parcel Service has reached a lifetime high on Friday Peaking at \$108.60 per share, and ending at \$108.33 (as seen in Figure 3.8.1). Revenue growth is outpacing the industry average (5.7% compared to 5.0%), and

has improved its Q3 earnings per share by nearly 14% compared to Q3 2013¹⁰. UPS is still underperforming vs the S&P 500, and appears to have room for growth in the coming months, with low fuel prices and forecasts for high package volume this holiday season.

Delta Airlines (DAL)

Since purchasing at \$35.51 per share in early October, Delta has been one of our more profitable stocks. It appears that this rise will continue as busy travel holiday's, such as Thanksgiving (historically their largest revenue day of the year), approach. Final note: Delta also reported a larger than expected traffic report for October¹¹.

3.9 Week 7

No trades were placed this week, as there were no drastic changes to the market or earnings reports from companies in the portfolio for this week (sans **Cisco**). Annual return for the portfolio has increased to 24.14%, currently its highest point for this simulation. Though profit has been made on most companies, **Apple** has been the key cog in our portfolio, accounting for over 2/3 of profit. After a brief dip at the end of the week, we expect **UPS** to rebound early next week.

| Account Value (USD): \$10,331.19 Buying Power: \$5,263.44 Cash: \$195.69 Annual Return: 24.14 % | | | | | | | | |
|--|---|---|-----|----------------|---------------|--------------------|-----------------------|--------------------------|
| Stock Portfolio | | | | Trade Stock | Symbol Lookup | More | | |
| | Symbol | Description | Qty | Purchase Price | Current Price | Total Value | Today's Change | Total Gain/Loss |
| + | Sell AAPL | APPLE INC | 15 | \$99.96 | \$114.18 | \$1,712.70 | \$0.00(0.00 %) | \$213.36(14.23 %) |
| + | Sell K | KELLOGG CO | 20 | \$62.22 | \$63.81 | \$1,276.20 | \$0.00(0.00 %) | \$31.80(2.56 %) |
| + | Sell WTW | WEIGHT WATCHERS INTERNATIONAL INC | 10 | \$26.68 | \$27.98 | \$279.80 | \$0.00(0.00 %) | \$13.02(4.88 %) |
| + | Sell SWY | SAFEWAY INC | 36 | \$34.26 | \$34.85 | \$1,254.60 | \$0.00(0.00 %) | \$21.24(1.72 %) |
| + | Sell KGJI | KINGOLD JEWELRY INC | 500 | \$1.24 | \$1.15 | \$575.00 | \$0.00(0.00 %) | -\$43.40(-7.02 %) |
| + | Sell CXDC | CHINA XD PLASTICS CO LTD | 80 | \$5.16 | \$6.33 | \$506.40 | \$0.00(0.00 %) | \$94.00(22.79 %) |
| + | Sell ALSK | ALASKA COMMUNICATIONS SYSTEMS GROUP INC | 300 | \$1.44 | \$1.37 | \$409.50 | \$0.00(0.00 %) | -\$22.50(-5.21 %) |
| + | Sell CSCO | CISCO SYSTEMS INC | 15 | \$23.26 | \$26.32 | \$394.80 | \$0.00(0.00 %) | \$45.90(13.16 %) |
| + | Sell AFOP | ALLIANCE FIBER OPTIC PRODUCTS INC | 20 | \$12.61 | \$13.87 | \$277.40 | \$0.00(0.00 %) | \$25.20(9.99 %) |
| + | Sell DAL | DELTA AIR LINES INC | 30 | \$41.79 | \$43.75 | \$1,312.50 | \$0.00(0.00 %) | \$58.80(4.69 %) |
| + | Sell UPS | UNITED PARCEL SERVICE INC (UPS) | 20 | \$107.46 | \$106.83 | \$2,136.60 | \$0.00(0.00 %) | -\$12.61(-0.59 %) |
| Total: | | | | | | \$10,135.50 | \$0.00(0.00 %) | \$424.81 (4.37 %) |

Figure 3.9.1 Week 7 Portfolio Summary

Cisco (CSCO)

After their first quarter earnings report Wednesday, Cisco shares rose 2.5% (13.16% since purchasing in week 1). Cisco's profit of 35 cents per share with \$12.2 billion in revenue is nearly identical to quarter one last year (37 cents a share and \$12.1 billion in revenue¹²). Cisco

also announced that current Senior VP of Corporate Finance¹³ Kelly Kramer would be replacing CFO Frank Calderoni as the company's CFO after Calderoni's retirement at the end of this year. Calderoni was the company's CFO for the past 10 years, and it is unclear whether this announcement helped increase the share price. You can view Cisco's stock price for this newsworthy day below.

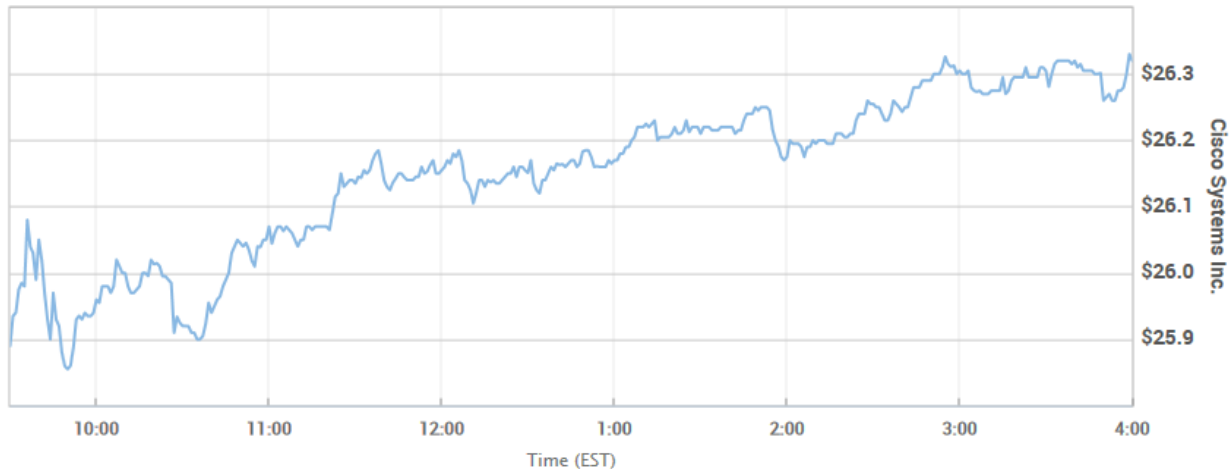


Figure 3.9.2 Cisco (CSCO) 11/12/14

3.10 Week 8

No trades were made this week, as most stocks had seen steady growth over the past few weeks and no major news came from any of the companies in the portfolio. **Apple (AAPL)** continued its rise to over \$116 dollars per share (originally purchased at under \$100). **Kellogg (K)** also finally hit the target we estimated in week one of \$65-66 dollars per share, ending the week at \$65.47. **UPS** has remained stable after hitting a lifetime high two weeks ago.

Account Value (USD): \$10,249.66 Buying Power: \$5,222.68 Cash: \$195.69 Annual Return: 15.62 %

| Stock Portfolio | | Trade Stock | Symbol Lookup | More | | | |
|---|---|-------------|----------------|---------------|--------------------|-----------------------|--------------------------|
| Symbol | Description | Qty | Purchase Price | Current Price | Total Value | Today's Change | Total Gain/Loss |
| Sell AAPL | APPLE INC | 15 | \$99.96 | \$116.47 | \$1,747.05 | \$0.00(0.00 %) | \$247.71(16.52 %) |
| Sell K | KELLOGG CO | 20 | \$62.22 | \$65.47 | \$1,309.40 | \$0.00(0.00 %) | \$65.00(5.22 %) |
| Sell WTW | WEIGHT WATCHERS INTERNATIONAL INC | 10 | \$26.68 | \$27.09 | \$270.90 | \$0.00(0.00 %) | \$4.12(1.55 %) |
| Sell SWY | SAFEWAY INC | 36 | \$34.26 | \$34.82 | \$1,253.52 | \$0.00(0.00 %) | \$20.16(1.63 %) |
| Sell KGJI | KINGOLD JEWELRY INC | 500 | \$1.24 | \$1.09 | \$545.00 | \$0.00(0.00 %) | -\$73.40(-11.87 %) |
| Sell CXDC | CHINA XD PLASTICS CO LTD | 80 | \$5.16 | \$5.51 | \$440.80 | \$0.00(0.00 %) | \$28.40(6.89 %) |
| Sell ALSK | ALASKA COMMUNICATIONS SYSTEMS GROUP INC | 300 | \$1.44 | \$1.30 | \$390.00 | \$0.00(0.00 %) | -\$42.00(-9.72 %) |
| Sell CSCO | CISCO SYSTEMS INC | 15 | \$23.26 | \$26.88 | \$403.20 | \$0.00(0.00 %) | \$54.30(15.56 %) |
| Sell AFOP | ALLIANCE FIBER OPTIC PRODUCTS INC | 20 | \$12.61 | \$12.72 | \$254.40 | \$0.00(0.00 %) | \$2.20(0.87 %) |
| Sell DAL | DELTA AIR LINES INC | 30 | \$41.79 | \$43.09 | \$1,292.70 | \$0.00(0.00 %) | \$39.00(3.11 %) |
| Sell UPS | UNITED PARCEL SERVICE INC (UPS) | 20 | \$107.46 | \$107.35 | \$2,147.00 | \$0.00(0.00 %) | -\$2.21(-0.10 %) |
| Total: | | | | | \$10,053.97 | \$0.00(0.00 %) | \$343.28 (3.54 %) |

Figure 3.10.1 Week 8 Portfolio Summary

3.11 Analysis

After a 5% dip in weeks 1-3, four consecutive weeks of positive return and a slight dip in the final week led our portfolio to a net positive account value of \$10,269.99, just shy of 2nd in the rankings of our four simulations.

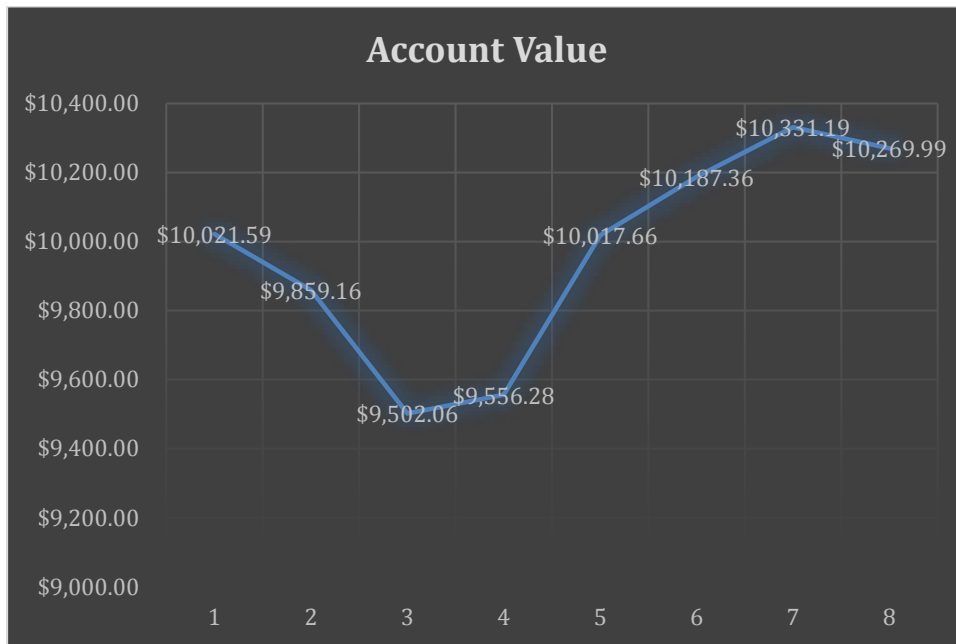


Figure 3.11.1 Chapter 3 Account Value

In our analysis of Value-Based investing over the course of this eight week simulation, we have found areas of strength and weaknesses in using the method, as well as areas where we personally could have improved in conducting the simulation. Starting with strengths, VBI's main attraction is in its simplicity, as the method focuses on two company metrics when analyzing said companies as a potential investment (return on capital and earnings yield). The other main attraction in using VBI is its effectiveness in beating the market by finding "underperforming" companies (in regards to their stock price, not actual company performance). With this method, we have found that there is very little volatility, as companies are required to have a market cap of over \$50 million (encouraged to select companies with a market cap over \$100 million). What

little negative volatility there was lined up closely with the S&P 500, and the positive returns did exceed the S&P 500, even with only an eight week simulation.

I would recommend this method for those who are looking to invest long-term. We would recommend this method as a short-term (2-4 months) option as well, with the understanding that it is very unlikely that there will be significant returns. As stated in the intro to the VBI method (section 3.1), this method tends to lean towards loss minimization. One weakness in investing short term is that the stocks tend to ebb and flow pretty closely with the market (over time they usually increase), which can lead to brief periods of underperformance.

In improving our strategy with the Value-Based investing method, one aspect we would have changed is in the amount we invested into the “core” stocks (**Apple**, **Kellogg**, **Cisco**, and **Weight Watchers**). 3 out of the 4 increased significantly over the course of the simulation, and heavier investments into them could have yielded a higher return, with the Value-Based system indicating less risk in those stocks as well. The one that only increased slightly (and was down for most of the simulation) was **Weight Watchers (WTW)**, and with their profit slopping 37% in Q3, there were warning signs that a dip in their share price could occur. We would have also avoided foreign companies, as those also led to some losses in our portfolio. One example of this is **Kingold Jewelry (KGJI)**, which was responsible for nearly 2% of the losses in our portfolio. With lowering fuel prices, stocks like **Delta (DAL)** and **UPS** could have easily been capitalized on more than they were as well.

Overall, Value-Based investing appears to be an effective strategy in finding strong companies with a high likelihood of having increasing share prices over time. We would recommend riding out any ebbs and flows that a company selected using this method may go through, except in extreme cases.

Chapter 4: Simulation 2 High Frequency Trading

4.1 Introduction

This simulation begins with \$10,000 to invest over the course of eight weeks, where the commissions will be \$1 per sale. The trades that will be made during this simulation will be purchases made at the market closing time and sales that will be made almost immediately following the market opening. This simulation targets stocks that have fallen a significant percentage throughout the day, and are bought at the perceived low point at the market close. When the market opens, the stock goes up or down a small percentage (usually up) and it is sold then to make a small profit off of the decline.

This simulation is a variation of short selling as the stocks are only held onto for a short period of time. Stocks that will not be purchased are stocks that are in their earnings period because those are much too volatile.

Obviously, there are some risks with this strategy where the stock could continue to fall at night and money could be lost in the morning, but statistics say this method works 75% of the time.

The goal of this method is to target stocks that have decreased at least 10% throughout the day, and have a trade value of \$5 or less. This helps to minimize potential losses, but also makes it easier to make a profit. This method requires minimal tracking of stocks, as the research needs to be done just at market close and market opening.

4.2 Company Selection

Mechel SHS Sponsored American Deposit (MTL)

This company was selected because it had fit our algorithm's criteria and it had fallen above 5% throughout the day. It had fallen because it had a failed product. Its one year target had been \$7.40 at the time, and that's why it seemed like a reasonable short term investment.

ALCO Stores, Inc. (ALCS)

ALCO Stores had fallen into our algorithm's criteria as well as it had dropped above 5% during the day. It had filed a SEC form 8K, and that was the cause of its fall, so it seemed that it could come back into the favor of investors and pick up a little bit of momentum to create some profit.

Atossa Genetics, Inc. (ATOS)

Atossa Genetics fit the criteria at the time of its purchase as well. Just as ALCO Stores did, Atossa filed a SEC form 8K, and that's why it fell into the algorithm's purchase zone. Its 1 Year Target Est. is \$8.75, so when it fell it seemed to be a safe bet to make a somewhat strong comeback.

Tonix Pharmaceuticals Holding Corp (TNXP)

Tonix Pharmaceuticals fit the criteria for the same reason as ATOS and ALCO, it had filed a SEC form 8K. The only issue with this company was that its price per stock was above \$5, so it is a bigger risk using the algorithm.

S&W Seed Company (SANW)

S&W Seed Company seemed like a logical buy and fit the criteria. The issue was that we did not look at the volume of the stock before purchasing it in the simulator. At the time of purchase, the volume was around 1000. Again, the stocks 1 year estimate was well above what the stock was purchased at.

Spherix Incorporated (SPEX)

Spherix Inc. was part of the trend where companies had filed a SEC form 8K, and had fallen for that reason. The 1 year target estimate was not much higher than the stock at the time of the purchase, which limits its upside.

IsoRay, Inc. (ISR)

IsoRay, Inc. is another stock that was part of the trend which had fallen into the criteria because of the filing of a SEC form 8K. It seemed that there could be some risk with this stock because its Beta is -3.76, which is extremely low. However, it seemed as if there was some short term potential.

Alibaba Group Holding Limited (BABA)

Alibaba is a stock that will be kept in our portfolio for hopefully the entire period of the simulation. This is a stock that there is much long term potential in because it is considered a more advanced version of Amazon, but in China. There are some risks with Alibaba, as there are with any stock. These risks include a limited upside because it is a company based out of China and they have different laws than other countries do. Another risk is that it just had its IPO, so it could fall some before rising to its true potential.

GT Advanced Technologies Inc. (GTAT)

GT Advanced Technologies is another stock that is a long term investment. This stock was selected because it has fallen about 90% throughout this year after it had reached its 1 year high at \$20.54. It has set its 1 year target estimate at \$9.19 with a Beta of \$3.28, so the potential is there for this stock to increase a solid amount throughout the simulation.

Arrowhead Research Corp. (ARWR)

Arrowhead Research Corporation was selected as another long term investment because it had gone pretty close to its 1 year low, purchased at \$7.03 per share. It dropped so far due to managerial problems, which is not a great reason for it to drop about 50% in one day. To go along with that, its 1 year estimate is set at \$33.50 and its Beta is 3.09. Showing that it has quite a bit of potential to grow a substantial amount throughout the simulation.

Sunesis Pharmaceuticals, Inc. (SNSS)

This company was selected because it had fit the criteria for the companies that should be targeted. It had fallen so far because of a failed drug, and it was at a low price per stock so it seemed like a marginal risk. Also, the highest it had been in the last year was \$8.46, so there was a lot of room to grow.

Innovative Solutions & Support Inc. (ISSC)

Innovative Solutions & Support Inc. was selected because it had fallen a great amount during the day it was bought and fit the criteria that was set. The reason it fell so far was because it had filed a SEC form 8K which had been profitable in previous trading. Its one-year target is \$8 higher than its value when it was purchased, so it seemed like it could have some potential.

Liquid Holdings Group, Inc. (LIQD)

Liquid Holdings Group was selected because it fell a great amount during the day it was bought and did not have much risk. The reason it fell was because had filed a SEC form 8K and its one-year target estimate was much higher than its buying price.

Other Stocks

Other companies will be selected each week, because the method we are using is based on stocks that drop the most throughout the day. We identify which stocks have fallen and then we

will buy one that we think is appropriate at market close. The next morning we sell the stock pretty early after the market opens to make a marginal profit. These stocks will then be added to the company selection section.

4.3 Week 1

Mechel SHS Sponsored American Deposit (MTL)

This trade was a big loss, as it had fell about 30% during the day and we had purchased 6000 shares at \$1.03 per share, assuming it would go up some in the morning. However, during the night it plummeted again and went down \$.2 to cause a total loss of \$1231.2.



Figure 4.3.1 MTL Chart 9/22-9/26

ALCO Stores, Inc. (ALCS)

This stock had fallen about 40% on Tuesday and 2500 shares were purchased at \$2.95 per share. This stock had fallen because of a SEC that was filed, and in the morning the stock's value had increased \$.06 to \$3.01 where it was sold to make \$159.01. After Wednesday morning, this stock had fallen again down past \$2.95, so this method worked on this particular stock.



Figure 4.3.2 ALCS Chart 9/23-9/24

Atossa Genetics, Inc. (ATOS)

This stock had fallen to a one year low on Wednesday, about 75%, because of the filing of an SEC. It's hard for a stock to fall more than 75%, so we saw this as a good chance for an increase in the morning. We bought 6000 shares at \$1.36 per share and ended up selling at \$1.46 per share to make \$600 and almost bring our account back to even after our first loss.



Figure 4.3.3 ATOS Chart 9/24-9/25

Summary

This week Mechel (MTL) had a failed product, which we believed was not going to continue to tank at night. However a second issue caused the stock to continue to fall. Next time, we will have to do more research throughout the day to make sure we are not missing anything. The stocks that worked the best this week are ones that had fallen because they had filed an SEC so we will be buying more of those stocks going forward.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|-----------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|------------|
| 9/22/2014 | MTL | Buy | \$1.03 | 6000 | \$6,180.99 | | | \$3,819.01 |
| 9/23/2014 | MTL | sell | \$0.82 | 6000 | \$4,919.01 | \$ (1,261.98) | \$ (1,261.98) | \$8,738.02 |
| 9/23/2014 | ALCS | Buy | \$2.95 | 2500 | \$7,375.99 | | \$ (1,261.98) | \$1,362.03 |
| 9/24/2014 | ALCS | sell | \$3.01 | 2500 | \$7,524.01 | \$ 148.02 | \$ (1,113.96) | \$8,886.04 |
| 9/24/2014 | ATOS | buy | \$1.36 | 6000 | \$8,160.99 | | \$ (1,113.96) | \$725.05 |
| 9/25/2014 | ATOS | sell | \$1.46 | 6000 | \$8,759.01 | \$ 598.02 | \$ (515.94) | \$9,484.06 |

Figure 4.3.4 Week 1 Transactions

4.4 Week 2

This week we tried to target stocks whose share price had dropped and had filed SECs. It seemed to work overall as we made money throughout the week. The one issue that we encountered this week was that we did not look at the real life volume of a stock we bought on, and bought enough to shift the market, and the simulator does not allow you to sell enough stocks to affect the market, so they did not let us sell until the volume grew later the next day and the value had fallen. From now on, we will have to pay better attention to what the stock's volume is to make sure we do not make that mistake again.

Tonix Pharmaceuticals Holding Corp (TNXP)

This trade ended up losing some money, but it was a very marginal loss as it only dropped another small amount after plummeting about 30% on Monday when it was bought. The issue with this stock was that it was a little greater than the price range we set (\$1-\$5 per share), and we bought because we thought we could afford a little risk. It ended up not working out that poorly, but we should stay within the means we set from now on.



Figure 4.4.1 TNXP Chart 9/29-10/3

S&W Seed Company (SANW)

This was the stock we had the volume issue with. We could have made money had we been able to sell Wednesday morning, we would have made a marginal profit but the simulator would not let me. So we ended up taking a loss on this stock as well.



Figure 4.4.2 SANW Chart 9/29-10/3

Spherix Incorporated (SPEX)

This stock ended up breaking even because we wanted to sell before there was a potential loss. Unfortunately, later in the week it increased about 10% from what we bought it at. However, there will always be “what ifs” so we are glad we sold when we did.



Figure 4.4.3 SPEX Chart 9/29-10/3

IsoRay (ISR)

This stock we sold at the correct time and was able to make about \$150 after it had gone back up a little bit in the morning. This was the one big winner of the week as we make our way back to the starting deposit of \$10,000.



Figure 4.4.4 ISR Chart 9/29-10/3

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|-----------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|---------------|
| 9/29/2014 | TNXP | Buy | \$6.96 | 800 | \$5,568.99 | | \$ (515.94) | \$3,915.07 |
| 9/30/2014 | TNXP | sell | \$6.87 | 800 | \$5,495.01 | \$ (73.98) | \$ (589.92) | \$9,410.08 |
| 9/30/2014 | SANW | buy | \$4.16 | 1500 | \$6,240.99 | | \$ (589.92) | \$3,169.09 |
| 10/1/2014 | SANW | Sell | \$4.20 | 100 | \$419.01 | \$ 2.94 | \$ (586.98) | \$3,588.10 |
| 10/1/2014 | SANW | sell | \$4.02 | 1400 | \$5,627.01 | \$ (197.91) | \$ (784.89) | \$9,215.11 |
| 10/1/2014 | SPEX | Buy | \$1.15 | 6000 | \$6,900.99 | | \$ (784.89) | \$2,314.12 |
| 10/2/2014 | SPEX | Sell | \$1.15 | 6000 | \$6,899.01 | \$ (1.98) | \$ (786.87) | \$9,213.13 |
| 10/2/2014 | ISR | Buy | \$1.43 | 5000 | \$7,150.99 | | \$ (786.87) | \$2,062.14 |
| 10/3/2014 | ISR | Sell | \$1.47 | 5000 | \$7,349.01 | \$ 198.02 | \$ (588.85) | \$9,411.15 |

Figure 4.4.5 Week 2 Transactions

4.5 Week 3

This week we bought 3 stocks that are long-term investments and we bought 3 stocks using our algorithm to make some profit on the side. The first trade of the week made about \$300, which was a good start to the week. The next trade that was made lost only about \$60, which is a pretty marginal risk, and we only bought 3000 shares of ISSC so that there couldn't be too much loss. That same day we also made three long term purchases to create some solid cash flow on the side of the algorithm. The last trade made of the week lost some money as well, but it was a very

marginal loss and we came out of the week with some profit so overall it was a good week of trading.

The following tables show how each of the stocks purchased under our algorithm performed this week:

Liquid Holdings Group, Inc. (LIQD)



Figure 4.5.1 LIQD Chart 10/6-10/10

Innovative Solutions & Support Inc. (ISSC)



Figure 4.5.2 ISSC Chart 10/6-10/10

Sunesis Pharmaceuticals, Inc. (SNSS)



Figure 4.5.3 SNSS Chart 10/6-10/10

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|-----------|--------|--------------|---------|--------|-----------------------|-----------------|-----------------|---------------|
| 10/7/2014 | SNSS | Buy | \$1.43 | 6000 | \$8,580.99 | | \$ (588.85) | \$830.16 |
| 10/7/2014 | SNSS | sell | \$1.48 | 6000 | \$8,879.01 | \$ 298.02 | \$ (290.83) | \$9,709.17 |
| 10/7/2014 | ISSC | buy | \$2.80 | 3000 | \$8,400.99 | | \$ (290.83) | \$1,308.18 |
| 10/8/2014 | ISSC | sell | \$2.78 | 3000 | \$8,339.01 | \$ (61.98) | \$ (352.81) | \$9,647.19 |
| 10/8/2014 | GTAT | buy | \$1.11 | 1500 | \$1,665.99 | | \$ (352.81) | \$7,981.20 |
| 10/8/2014 | BABA | Buy | \$88.18 | 30 | \$2,646.39 | | \$ (352.81) | \$5,334.81 |
| 10/8/2014 | ARWR | Buy | \$6.55 | 200 | \$1,310.99 | | \$ (352.81) | \$4,023.82 |
| 10/8/2014 | LIQD | Buy | \$1.05 | 2000 | \$2,100.99 | | \$ (352.81) | \$1,922.83 |
| 10/9/2014 | LIQD | Sell | \$1.03 | 2000 | \$2,059.01 | \$ (41.98) | \$ (394.79) | \$3,981.84 |

Figure 4.5.4 Week 3 Transactions

4.6 Week 4

Midstates Petroleum Company, Inc. (MPO)

Midstates Petroleum was a company that had fit our criteria, as it had fallen to its 52 week low and was below \$5 per share. This company seemed like it had good potential to grow quickly because its 1 Year Target estimate is \$7.00, and it also has a good beta at 3.18, so this company showed a decent amount of promise.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|------------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|---------------|
| 10/14/2014 | GTAT | sell | \$0.40 | 1500 | \$599.01 | \$ (1,066.98) | \$ (1,461.77) | \$4,580.85 |
| 10/15/2014 | MPO | buy | \$2.33 | 1500 | \$3,495.99 | | \$ (1,461.77) | \$1,084.86 |
| 10/15/2014 | MPO | sell | \$2.25 | 1500 | \$3,374.01 | \$ (121.98) | \$ (1,583.75) | \$4,458.87 |

Figure 4.6.1 Week 4 Transactions

This week we made 3 transactions, one selling a stock that we had selected to be a long-term investment, and one that fit our criteria for trading. Both ended up causing us to lose money. When we purchased the GTAT stock, it had fallen to its 1 year low, and the next day it increased in price by about 50%, which showed us that it could continue to go back up, so we held onto it. This was a mistake, as by Monday it had fallen well past what we had originally purchased it at and caused us to lose quite a bit of money. The MPO trade was a simple trade that fit our algorithm but ended up causing us to lose a marginal amount of money. Clearly, this week was not our best, and brought our account down a fair amount of money.

4.7 Week 5

Celator Pharmaceuticals, Inc. (CPXX)

Celator Pharmaceuticals was chosen because it had fallen due to its filing an SEC form 8-K. In past trading, stocks that had fallen for this reason were marginally profitable so this stock identified well. It had also fallen to \$1.96 per share, and its 1 year target estimate is \$7.00, which shows that it still had a lot of potential to grow.

Blue Earth Inc. (BBLU)

Blue Earth Inc. had fallen because it had allegedly misled shareholders and the company began to be investigated on those allegations. However, the investigation did not uncover anything, which means the stock had the potential to go back up closer to its original price.

Vapor Corp. (VPCO)

Vapor Corporation was purchased because it had fit the criteria and had fallen due to the company filing a SEC form 8-K. The 1 year target estimate is \$6, and the beta is solid as well at 1.35, so this company seemed prime for a strong rebound and some marginal profit to be made.

Pain Therapeutics Inc. (PTIE)

Pain Therapeutics was selected because it had fit the algorithm, and the reason it had fallen was because they filed a SEC form 8-K. This company seemed promising because it had fit the trend where the companies will file these forms and fit the algorithm. This stock was also purchased at \$1.93 per share but had a 1 year target estimate of \$8.00, so it definitely has some potential

Allied Nevada Gold Corp. (ANV)

Allied Nevada Gold was selected because the stock had fit the algorithm. The issue with this company is that it had already surpassed its 1 year target estimate by \$4.00, so this company presents more of a risk.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|------------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|---------------|
| | | | | | | | | |
| 10/21/2014 | CPXX | buy | \$1.96 | 1500 | \$2,940.99 | | \$ (1,583.75) | \$1,517.88 |
| 10/21/2014 | CPXX | sell | \$1.96 | 1500 | \$2,939.01 | \$ (1.98) | \$ (1,585.73) | \$4,456.89 |
| 10/21/2014 | BBLU | buy | \$1.15 | 1500 | \$1,725.99 | | \$ (1,585.73) | \$2,730.90 |
| 10/22/2014 | BBLU | sell | \$1.76 | 1500 | \$2,639.01 | \$ 913.02 | \$ (672.71) | \$5,369.91 |
| 10/23/2014 | VPCO | buy | \$2.13 | 800 | \$1,704.99 | | \$ (672.71) | \$3,664.92 |
| 10/24/2014 | VPCO | Sell | \$2.03 | 800 | \$1,623.01 | \$ (81.98) | \$ (754.69) | \$5,287.93 |
| 10/27/2014 | PTIE | buy | \$1.93 | 1000 | \$1,930.99 | | \$ (754.69) | \$3,356.94 |
| 10/29/2014 | PTIE | sell | \$2.06 | 1000 | \$2,059.01 | \$ 128.02 | \$ (626.67) | \$5,415.95 |
| 10/29/2014 | ANV | buy | \$1.69 | 2000 | \$3,380.99 | | \$ (626.67) | \$2,034.96 |
| 10/30/2014 | ANV | sell | \$1.55 | 2000 | \$3,099.01 | \$ (281.98) | \$ (908.65) | \$5,133.97 |

Figure 4.7.1 Week 5 Transactions

This week there was quite a bit of profit made, as the trade with BBLU made almost \$1000, and brought the account value back up closer to its original level. The trade with VPCO was simply a marginal loss that was basically negligible after the huge gain from the BBLU trade. Our account value continued to rise as well because BABA and ARWR which are our long term stocks have continued to increase since their initial purchase. We had taken a risk with the ANV trade because it had already greatly surpassed its own self-proclaimed potential and it clearly did not work out. That will be something that we will look for going forward as well.

4.8 Week 6

Company Selection

InspireMD, Inc. (NSPR)

InspireMD Inc. was selected as a quick buy and sell because it fit the algorithm. Its purchase price was well below its one year target, which is \$5.17, so it definitely had potential to grow. The reason it had fallen so low is because it had filed a SEC form 8-K which has fit the trend that we have used with our algorithm thus far.

Petr (PBR)

Petr was selected as a long term purchase because its worth had fell a little bit on the day and is a stock that has a high volume and high rate of change. It has a one year target estimate that is \$9 above its purchase price, so it seemed like a solid purchase that could make some money in the long run.

Alexza Pharmaceuticals Inc. (ALXA)

Alexza Pharmaceuticals was selected because it fit the algorithm and its purchase price had fallen well below its 1 year range. This stock had fallen because it missed its earnings estimate by \$.03, but it seemed that there was still a lot of potential for it to go back up as it has a one year target estimate of \$9.50, and a beta of 1.47, both solid marks.

Week 6 Trading

This week's trading ended up creating a significant amount of profit. Not only did the trades from the algorithm create quite a bit of money, but BABA had its earnings period, which they report 53% revenue increase and the stock has increased in price on a daily basis since. All of our long term investments to this point have created a decent amount of profit, allowing us to fail on the algorithm on occasion and still stay pretty close to even.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|-----------|--------|--------------|---------|--------|-----------------------|-----------------|-----------------|------------|
| 11/4/2014 | NSPR | Buy | \$1.25 | 2500 | \$3,125.99 | | \$ (908.65) | \$2,007.98 |
| 11/5/2014 | NSPR | sell | \$1.23 | 2500 | \$3,074.01 | \$ (51.98) | \$ (960.63) | \$5,081.99 |
| 11/5/2014 | PBR | Buy | \$11.16 | 100 | \$1,116.99 | | \$ (960.63) | \$3,965.00 |
| 11/6/2014 | ALXA | buy | \$1.53 | 1500 | \$2,295.99 | | \$ (960.63) | \$1,669.01 |
| 11/7/2014 | ALXA | sell | \$1.60 | 1500 | \$2,399.01 | \$ 103.02 | \$ (857.61) | \$4,068.02 |

Figure 4.8.1 Week 6 Transactions

4.9 Week 7

Company Selection

Resolute Energy Corporation (REN)

Resolute Energy Corporation was purchased because it had fallen to fit the algorithm, and the reason it had fallen was because it reported asset rich, but cash poor. This seemed like a poor reason for it to fall a full \$2 below what it was previously trading at. It also had a one year target estimate of \$7.15, and a good Beta at 2.17, showing its potential for some bounce back after the fall.

Sunlink Health Systems (SYY)

SunLink Health Systems was selected because it had fallen into the range of the algorithm, and like many other companies before it, it had fallen due to its filing of a SEC form 8-K. These companies had success making some profit in the past, and since its one year price range was so low (between \$.75-\$2.95), it seemed like a pretty small risk company.

Local Corporation (LOCM)

Local Corporation was selected as another attempt at making a short term, marginal profit that had fit our algorithm. It had fallen about 20% from what its daily trading price was because of its poor results from its Q3 earnings period. This is the type of company we usually would not purchase

because who knows how other investors will feel about this company not making their earnings, but it seemed somewhat unreasonable for it to drop so far as it did not miss the estimated earnings by that much.

Week 7 Trading

This week was an overall positive week for the transactions that were made through the algorithm, however it was a poor week for the long term stocks that were purchased. At the beginning of the week BABA had hit an all-time high around \$119 per share, but throughout the week it fell a bit and caused our account value to fall with it. ARCP is the other long term stock that we purchased that has raised our account value somewhat, but still had a rough week and caused some short term loss. Our other two long term purchases, ARWR and PBR, both had made us some money in past weeks, but both had very poor weeks and have now both cost us about \$200 total. Hopefully next week they can all bounce back and get our account back closer to even.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|------------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|------------|
| 11/10/2014 | REN | Buy | \$2.81 | 600 | \$1,686.99 | | \$ (857.61) | \$2,381.03 |
| 11/11/2014 | REN | sell | \$2.63 | 600 | \$1,577.01 | \$ (109.98) | \$ (967.59) | \$3,958.04 |
| 11/12/2014 | SSY | Buy | \$1.42 | 1000 | \$1,420.99 | | \$ (967.59) | \$2,537.05 |
| 11/13/2014 | SSY | sell | \$1.54 | 1000 | \$1,539.01 | \$ 118.02 | \$ (849.57) | \$4,076.06 |
| 11/13/2014 | LOCM | buy | \$1.30 | 1000 | \$1,300.99 | | \$ (849.57) | \$2,775.07 |
| 11/14/2014 | LOCM | sell | \$1.35 | 1000 | \$1,349.01 | \$ 48.02 | \$ (801.55) | \$4,124.08 |

Figure 4.9.1 Week 7 Transactions

4.10 Week 8

Company Selection

Novogen Limited (NVGN)

Novogen Limited was selected because of its low purchase price and the fact that it had fit the algorithm. The stock had fallen to a one year low for no notable reason, so it seemed as if it could bounce back the next day. However, it was definitely a risky company to select due to its poor Beta (-1.09) and low volume.

RLJ Entertainment, Inc. (RLJE)

RLJ Entertainment Inc. was a company that had fallen due to its filing of the SEC form 8-K, and due to the past success with these companies we decided to buy the stock close to its one year low. The company's one year target estimate was \$5 higher than its purchase price, showing it had potential for some marginal growth. However, there was some risk presented with this company due to its low volume and poor Beta (-.21).

North Atlantic Drilling Limited (NADL)

North Atlantic Drilling Limited was selected because of its low price per stock and past success. NADL's one year high is \$11.50, and its price per stock on the day it was selected was about \$9 below that. It did not seem that this company's stock price should have dropped so far because there were no major or even minor negatives reported about it. There were also not many risks that came with it as all of its stats were pretty much in the positive and it had a high volume.

This week's trading was very successful in terms of the algorithm trades, as we came out with a little bit more than \$200 of profit. However, there were multiple other things that hurt us this week, all coming from the long-term investments we had made. First of all, PBR had fell so

far below the price we bought it at we felt as if we had to sell before it plummeted even further and we lost more money on it. Another big thing that hurt us this week was after BABA had a great week of incredible growth and made our total assets increase quite a bit; it fell back down to earth this week and brought our total assets down with it. Overall, it was a pretty positive week despite the long term investments letting us down a little bit.

| Date | Symbol | buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Profit | Total Cash |
|------------|--------|--------------|--------|--------|-----------------------|-----------------|-----------------|------------|
| | | | | | | | | |
| 11/17/2014 | NVGN | Buy | \$1.60 | 1500 | \$2,400.99 | | \$ (801.55) | \$1,723.09 |
| 11/18/2014 | NVGN | sell | \$1.60 | 1500 | \$2,399.01 | \$ (1.98) | \$ (803.53) | \$4,122.10 |
| 11/18/2014 | PBR | Sell | \$8.89 | 100 | \$888.01 | \$ (228.98) | \$ (1,032.51) | \$5,010.11 |
| 11/18/2014 | RLJE | buy | \$3.00 | 1000 | \$3,000.99 | | \$ (1,032.51) | \$2,009.12 |
| 11/19/2014 | RLJE | sell | \$3.17 | 1000 | \$3,169.01 | \$ 168.02 | \$ (864.49) | \$5,178.13 |
| 11/19/2014 | NADL | buy | \$3.17 | 1000 | \$3,170.99 | | \$ (864.49) | \$2,007.14 |
| 11/20/2014 | NADL | Sell | \$3.22 | 1000 | \$3,219.01 | \$ 48.02 | \$ (816.47) | \$5,226.15 |

Figure 4.10.1 Week 8 Transactions

4.11 Analysis

This simulation concluded with a net loss due to two major losses using our algorithm. Both transactions lost about \$1,000, so we were very lucky to come back even close to even. The reason both GTAT and MTL lost us so much money is because we drifted away from our algorithm because they had both grown quite a bit during after hours, so we thought we could hold on to them for a little longer to make some more profit, however they ended up falling much farther than the purchase price, causing us to lose a lot of money on both stocks. As a whole, the algorithm worked pretty well for me, as we stayed at least pretty close to even throughout the entire simulation. A few things that we learned were that the stocks that should be targeted the most are those that have fallen because their reported financials were slightly lower than what was predicted. Many of the stocks we traded with had fallen due to not meeting the predictions, but the ones that made the most money were the ones that only missed the predicted earnings by a small

amount. The method we used would be more effective in real life if you started with more money and had the money to risk because the strategy is definitely pretty risky if you are putting a lot of money into one specific stock, especially if it falls. We have used this strategy in real life and it has been pretty effective for me, however we are not using an account with that much money so it's not as risky from our standpoint. The one major long-term investment we made was in Alibaba, which worked out very well for us and we ended up making about \$1,000 on it throughout the simulation.

Chapter 5: Simulation 3 Day Trading

5.1 Introduction

Simulation 3 is given a \$10,000 base amount to invest with over the eight week project period. Day trading involves making multiple transactions throughout the day while market is open and making small profits off of gains through analyzing the trends of the ups and downs of the stock market. This strategy is considered high risk because of the high frequency of trading along with variance in trends that stock can follow. Stocks are held for a short period of time using this strategy but for the initial segment of the simulation various stock has been kept to develop a stronger understanding of how the simulation works and to get better accustomed to following the trends of the market.

This methods objective is to buy stocks that show promise of rising in the early morning with an upward trend of at least 2% or possibly a gradual increase throughout the week and sell them at their highest point throughout the day. Consideration has been taken towards companies that have newly acquired other companies as well as companies that have potential to rise after dropping significantly throughout the year.

5.2 Company Selection

Merck and CO INC. (MRK)

Merck is a German research-driven healthcare company that has recently acquired Sigma-Aldrich (SIAL) for seventeen billion dollars. This recent acquisition had us to believe that Merck would begin to see a quick spike in the overall value of their stock. Trend lines indicated that no drastic rises or dips had taken place in the near future and we were confident that steady growth would take place.

Altera CORP (ALTR)

Altera Corporation is a Silicon Valley manufacturer that has been noted to have potential to be on the rise in a very short period of time. The stock was purchased while on a generally stagnant increase of about 0.5% in hope that the coming weeks would yield good results. Rumors of high demand in Altera steel has us to believe that this stock will soar in the coming months.

PIER 1 Imports INC (PIR)

PIER 1 Imports has reached 52-week lows in stock prices. Shares have lost almost half their value since the year began and are now valued at around 11 times fiscal 2016 profits. This stock shows promise as trend lines suggest that there will be a steady rise quickly.

ChinaNet Online Holdings Inc.

ChinaNet stocks has held relatively stagnant in the past months with only a gradual rise in the month of February. Recently, however, stock has skyrocketed and because of this we feel ChinaNet is on the verge of rapid activity. The stock itself is fairly cheap and the turnaround could show quick profits.

Alimera Science Inc.

Alimera Sciences is an American based biopharmaceutical company that was rumored to make quick gains throughout the week. With its confirmation of its newest drug by ILUVIEN by the FDA the company is expected to see major gains within the coming quarter. Prior to the purchase of this stock it had already jumped 17.97% in pre-market trading.

Aircastle LTD

Aircastle has seen a recent surge in insider buying recently with a total of \$5.5 million in stock being bought within the past two weeks. Long-term earnings per share is predicted to be at

more than 34 percent. The stock has also underperformed other competitors in their industry such as Aercap and Air Lease.

Berry Plastics Group, Inc.

Berry Plastics entered the market with above-average debt which put it at an IPO much lower than typical companies. The stock has shown a strong 56% gain from the IPO price. The company has decreased its initial debt and has a strong long-term growth potential. This along with holding line on operating costs has translated into free cash flow that shows promising results.

Neustar Inc.

Neustar Inc. a Delaware corporation brought to business in 1998 is currently at a 3-year low in stock. The company itself had an annual average earnings growth of 20.80% over the past 10 years. Through this information and the analysis of the current trend lines has us believe that Neustar will be a valuable investment.

5.3 Week 1

Merck and CO INC. (MRK)

With Merck's most recent acquisition in mind, we felt that taking quick initial action would see the most profit on a long term scale. The stock was purchased while it was at a 1.1% rise with the hopes that it would continue to increase. This, however, has not been the case as Merck's stock has continued to fluctuate throughout the past few days and is currently at a loss from when it was first bought. A stock history of Week 1 for MRK can be seen below.



Figure 5.3.1 MRK Chart Week 1

Altera CORP (ALTR)

Altera was also seen as a long term investor and because of this 20 shares were purchased. The stock was purchased while on a generally stagnant increase in hope that the coming days would yield good results. There has been little movement since then and the total current loss now stands at 0.33%. Altera's stock fluctuation is portrayed in Figure 5.3.2.

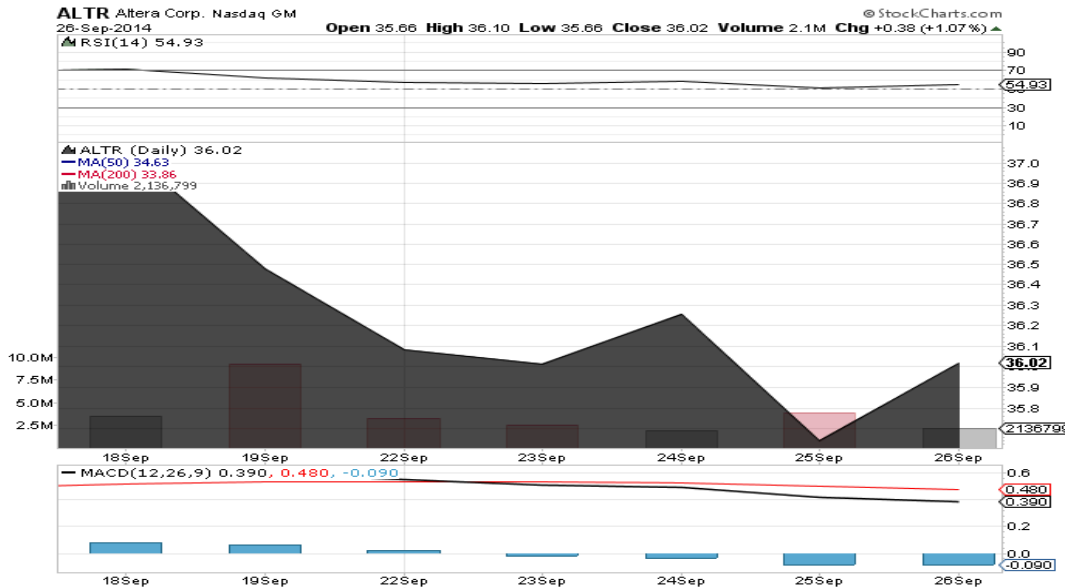


Figure 5.3.2 ALTR Chart Week 1

PIER 1 Imports INC (PIR)

PIER 1 Imports was currently at a low point in stock prices and because of this we felt now was the time to act quickly on the stocks. A total of 120 shares were purchased at \$12.21 per share. After Friday close a total gain of 0.58% had been recovered. This stock shows promise and further trading will be done when the market reopens on Monday. Additional stock history as well as the week's transactions are displayed below.

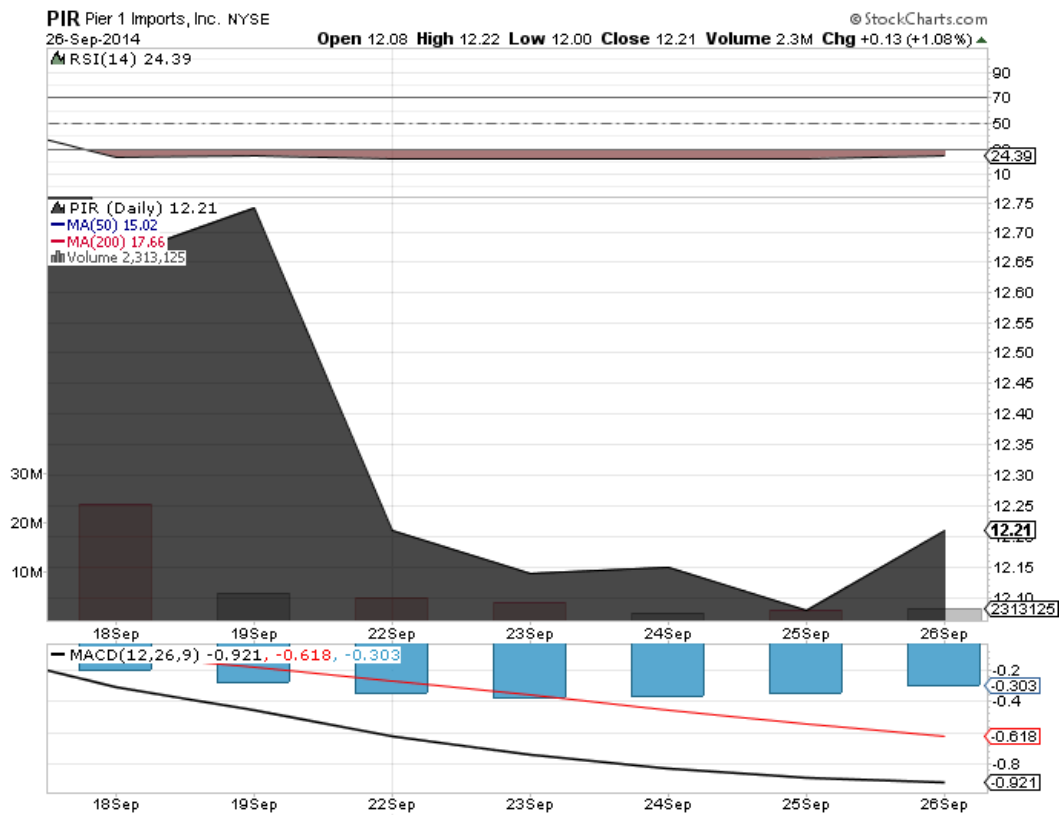


Figure 5.3.3 PIR Chart Week 1

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|-----------------|--------|----------|---------|--------|-------------------|--------|------------|--------------|
| 9/23/2014 12:15 | MRK | Buy | \$60.55 | 15 | \$909.24 | | \$9,090.76 | |
| 9/23/2014 12:15 | ALTR | Buy | \$36.14 | 20 | \$723.79 | | \$8,366.97 | |
| 9/26/2014 10:46 | PIR | Buy | \$12.14 | 100 | \$1,214.99 | | \$7,151.98 | |

Figure 5.3.4: Week 1 Transactions

Summary

Upon reviewing what we have done so far we feel that some changes need to be made in regard to our strategy. Too much emphasis has been placed upon long term weekly outcomes and the use of trend data has been neglected to a point. A higher frequency in the amount of trading that is done could possibly fix this as well as exploring some more low cost seasonal markets that could rise quickly in the coming holidays. We feel that investing in Pier 1 imports may prove to be the most profitable of our decisions due to it being low cost and the quantity at which we purchased the stock. We feel this week has provided valuable input in gauging the frequency at which we will trade in the coming weeks.

5.4 Week 2

Summary

The stocks for which we bought and evaluated this week took a considerable drop in value and because of these dips we saw little profit. We have decided to shy away from larger stocks and buy smaller stocks that have shown more gradual increases throughout the week. We will still try to increase the frequency of our buying we will just adjust the slope height of the stocks that we are buying. We feel that we may have to sell certain stocks soon because they are devaluing too quickly and would provide too much of a loss if we do not take action. Overall we are confident that next week will see rebounds and we will be able to increase our transactions.

Chinanet Online Holdings Incorporated (CNET)

Chinanet Online Holdings was purchased with a net percentage growth of 2.3% and was trending upward at the time of purchase. Shortly after stocks began to plummet and continued to do so throughout the week. As it stands the current total loss of the purchase of the original stock is 19.1%. This drop could be attributed to a number of reasons including that it is a web based

company and because of this performance can change very quickly from week to week. This, along with the current protests in Honk Kong, could sway Chinese stocks in the American Market drastically.



Figure 5.4.1: Stock History of CNET

Alimera Sciences Incorporated (ALIM)

Alimera Sciences is an American based biopharmaceutical company that was rumored to make quick gains throughout the week. The stock was purchase at a growth of 1.2% for the day. The stock itself was relatively cheap at \$5.44 per share. The ending price for the week of Alimera stock was \$5.03 showing a significant loss. No sales were made in hopes that the stock will rebound.

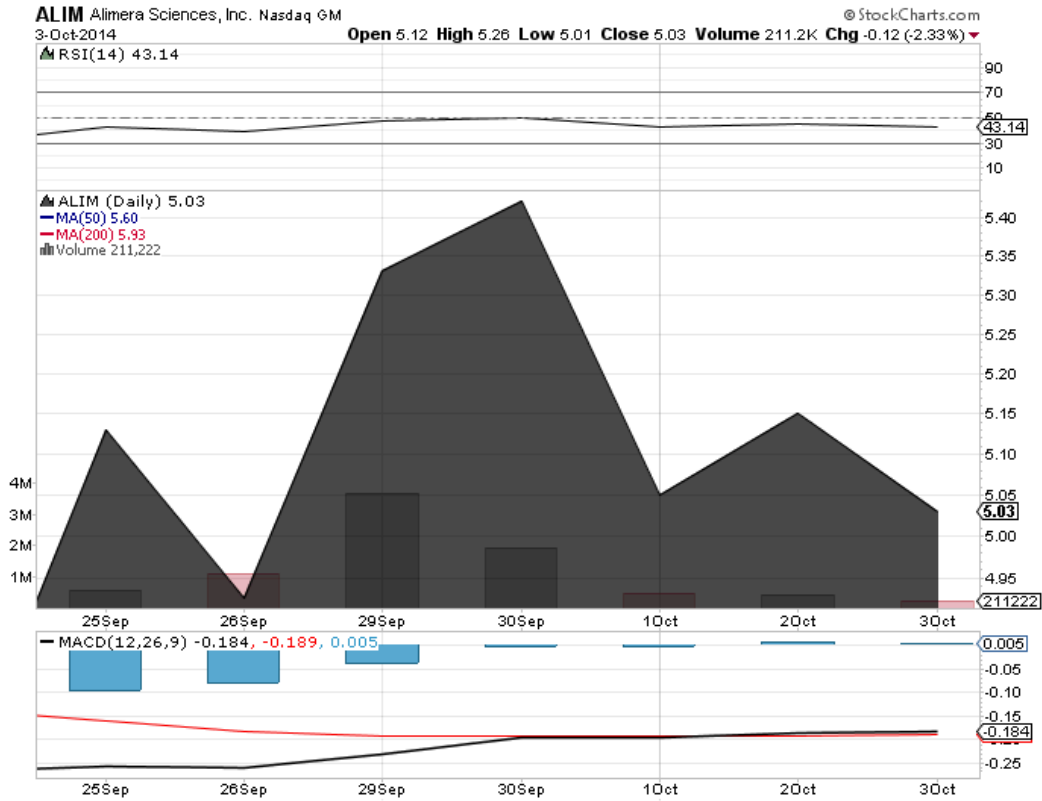


Figure 5.4.2: Stock History of Alimera

Pier 1 Imports Incorporated

Pier 1 Imports had seen a considerable drop through the week until making a steady increase over what it had previously been bought at. Thirty shares of stock were then sold to make a small profit and the remainder was kept to in hopes that stock would continue to increase at the end of the day. The stock was then planned to be sold completely if it continued to rise. Unfortunately the stock the dipped and no further sale was made.



Figure 5.4.3: Stock History of Pier 1

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|-----------------|--------|----------|---------|--------|-------------------|--------|------------|--------------|
| 9/29/2014 13:19 | CNET | Buy | \$3.56 | 200 | \$712.99 | | \$6,438.99 | |
| 9/30/2014 12:15 | ALIM | Buy | \$5.44 | 100 | \$544.99 | | \$5,894.00 | |
| 10/3/2014 13:23 | PIR | Sell | \$12.32 | 30 | \$368.61 | \$4.11 | \$6,262.61 | \$4.11 |

Figure 5.4.4 Week 2 Transactions

5.5 Week 3

Neustar Incorporated

Neustar Incorporated had been at a steady decrease throughout the past few weeks and had historically reached a notable 3-year low within stock value. This low provided an opportune time to purchase stocks in hopes that stocks would soon rise again. Neustar has currently underperformed the S&P 500 by 57% as well further supporting the decision for this purchase. A total of 50 shares were purchased.

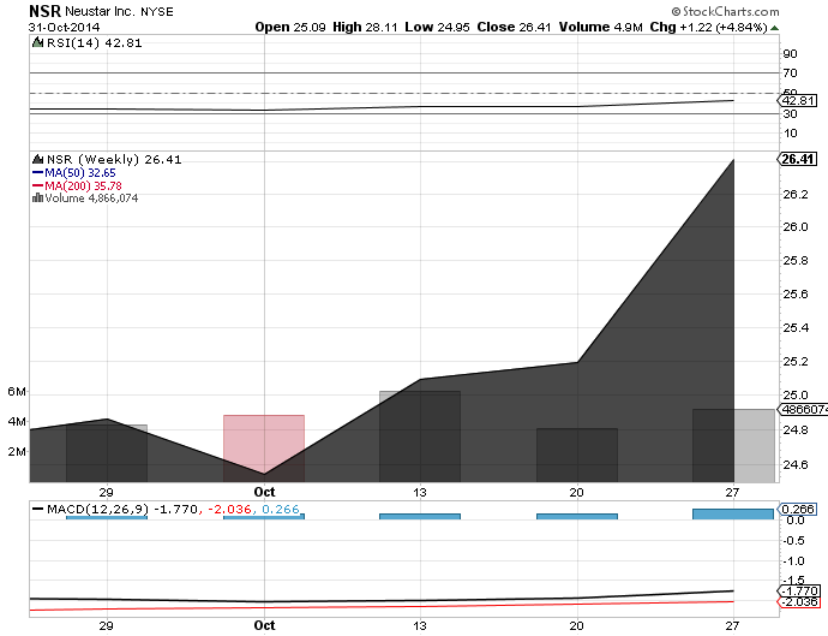
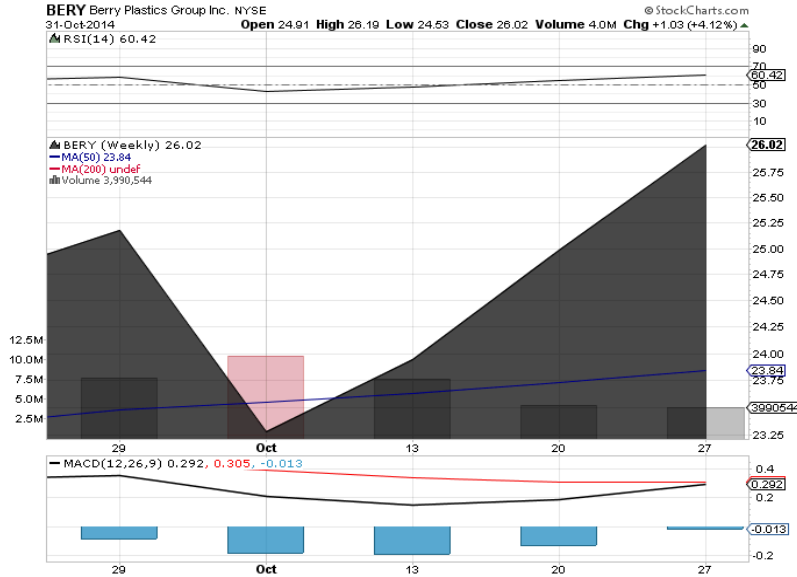


Figure 5.5.1: Stock History of NSR 10-11

Berry Plastics Group

Berry Plastics had been idling throughout the months of September and October and through stock analysis as well as Berry’s most recent acquisition of Rexam Healthcare Containers action was taken to purchase stock. Fifty shares of stock were bought with the expectation that it would rise within the month. The stock showed promise from the onset increasing by a margin of \$0.69 on the first day of purchase. Purchases for the week were then tabulated into the weekly purchase table for Week 3.



5.5.2: Stock History of BERY 10/1-11/1

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|-----------------|--------|----------|---------|--------|-------------------|--------|------------|--------------|
| 10/6/2014 10:48 | AYR | Buy | \$17.03 | 60 | \$1,022.79 | | \$5,239.82 | \$4.11 |
| 10/8/2014 15:06 | NSR | Buy | \$24.80 | 50 | \$1,240.99 | | \$3,998.83 | \$4.11 |
| 10/8/2014 15:06 | BERY | Buy | \$23.87 | 50 | \$1,194.49 | | \$2,804.34 | \$4.11 |

Figure 5.5.3: Week 3 Transactions

5.6 Week 4

Pier One Imports

Pier One Import sales held steady throughout the week and for the most part did not fluctuate. This stagnation led for other areas of the market to be explored and because of this the decision to sell half of the shares of Pier One was made. The decision seems to be of low risk due to the fact that sales of the outfitter most likely will not increase for another few weeks and the number of stocks invested is low to begin with.

Neustar Incorporated

Half of the current shares for Neustar Incorporated were also sold this week in anticipation of increased purchases in the coming week. This decision most likely will not affect much in terms

of overall revenue but the precaution was made in hopes of a quick spike in stock from trend line analysis done throughout the week. The sales were then tabulated in the following graph.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|------------------|--------|----------|---------|--------|-------------------|--------|------------|--------------|
| 10/13/2014 11:45 | NSR | Sell | \$25.16 | 25 | \$628.01 | \$7.51 | \$3,432.35 | \$11.63 |
| 10/17/2014 11:39 | PIR | Sell | \$12.23 | 25 | \$304.76 | \$1.01 | \$3,737.11 | \$12.64 |

Figure 5.6.1: Week 4 Transactions

5.7 Week 5

Alimera Sciences Incorporated

Alimera Sciences garnered steady gains with its marketing approval for diabetes-related vision loss treatment. The proposed method of Iluvien treatment had previously been declined three times before had but the consensus that the benefits of the said treatment would outweigh the current concerns was made this time. An initial sale was made the date of the 24th that produced a solid net gain as stock continued to rise. A few days later another sale was made as the stock peaked at \$6.37. The stock then slowly declined an additional purchase was made to buy back some of the stock and solidify the profit.

Air Castle LTD

The upcoming holiday season has brought in a large quantity of ticket sales for air flights. This has caused Air Castle stocks to rise on the seasonal gains as it most typically does. Two sales were made throughout the week as Air Castle's stock typically fluctuates a great deal.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|------------------|--------|----------|---------|--------|-------------------|---------|------------|--------------|
| 10/20/2014 12:09 | BERY | Buy | \$23.89 | 15 | \$359.34 | | \$3,377.77 | \$12.64 |
| 10/21/2014 13:06 | AYR | Sell | \$18.13 | 20 | \$361.61 | \$20.68 | \$3,739.38 | \$33.32 |
| 10/24/2014 13:18 | ALIM | Sell | \$5.93 | 40 | \$236.21 | \$18.21 | \$3,975.59 | \$51.53 |
| 10/27/2014 13:47 | ALIM | Sell | \$6.37 | 30 | \$190.11 | \$26.61 | \$4,165.70 | \$78.15 |
| 10/27/2014 13:47 | PIR | Buy | \$12.30 | 55 | \$677.49 | | \$3,488.21 | \$78.15 |
| 10/28/2014 13:26 | ALIM | Buy | \$5.95 | 60 | \$357.99 | | \$3,130.22 | \$78.15 |
| 10/29/2014 14:00 | AYR | Sell | \$18.75 | 10 | \$186.51 | \$16.05 | \$3,316.73 | \$94.19 |
| 10/30/2014 13:50 | NSR | Buy | \$25.35 | 50 | \$1,268.49 | | \$2,048.24 | \$94.19 |

Figure 5.7.1: Week 5 Transactions

5.8 Week 6

Chinanet Online Holdings Incorporated (CNET)

Chinanet Online had plummeted over the past weeks due to the multitude of work riots within Hong Kong as well as China's new Government Redevelopment Action plan. The company has recognized this steep decline in stock and have made active efforts in the Fujian Province to bounce back. Results have been mixed in these efforts and its current stocks fluctuate accordingly. The decision to sell a quarter of the shares in order to minimize further loss was taken. The following table shows Chinanet's rebound from the beginning of the month of October.

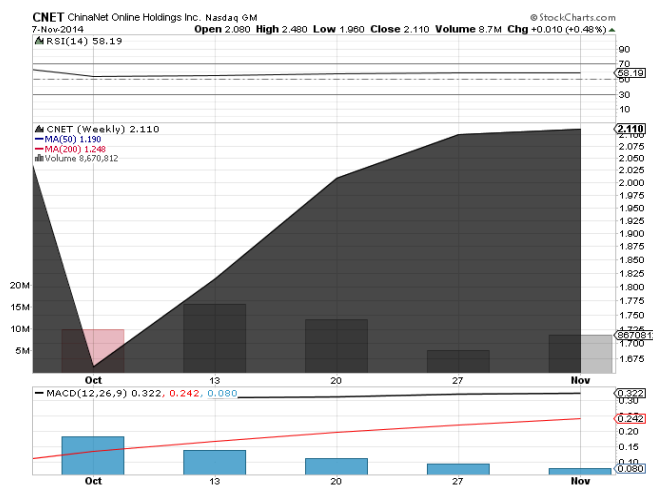


Figure 5.8.1: Chinanet Monthly Overview

Berry Plastics Group Inc.

The Berry Plastics Group has steadily increased throughout the termly quarter. The powder injection molding market as a whole has been profiting from recent research forecasts and the strongest profits are yet to come. Previous accumulations of stock for Berry Plastics has led to the decision that a small sale would provide a solid profit that could then be invested into other stocks as well.

Altera Corporation

Altera has partnered with MathWorks to deliver a unified Model-Based Design system for Altera and all of its subsidiaries. This public relations motive as well as a hopeful increased efficiency within the company will lead to a spike in current stock. Additional shares were made and results for the week were tabulated in the table of transactions for Week 6.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|-----------------|--------|----------|---------|--------|-------------------|-----------|------------|--------------|
| 11/3/2014 13:12 | ALTR | Buy | \$34.75 | 40 | \$1,390.99 | | \$657.25 | \$94.19 |
| 11/5/2014 13:35 | NSR | Sell | \$26.24 | 40 | \$1,048.61 | \$33.82 | \$1,705.86 | \$128.01 |
| 11/5/2014 13:37 | CNET | Sell | \$2.16 | 50 | \$107.01 | (\$71.24) | \$1,812.87 | \$56.77 |
| 11/7/2014 13:45 | BERY | Sell | \$26.34 | 35 | \$920.91 | \$84.77 | \$2,733.78 | \$141.54 |
| 11/7/2014 13:45 | AYR | Buy | \$20.06 | 50 | \$1,003.99 | | \$1,729.79 | \$141.54 |

Figure 5.8.2: Week 6 Transactions

5.9 Week 7

Neustar Incorporated

Neustar Incorporated was recently reported to be one of the top stocks in the Diversified Communication Services Industry with a high gross margin of growth. With this in mind as well as the company's steady increase of value, the decision to purchase more stocks were made. The rationale behind this decision came with the upcoming holiday season in mind and as media outlets require more service with the upcoming college football playoff season garnering millions of viewers.

Aircastle LTD

Aircastle has continued to be a solid contributor to the stock portfolio as a whole. Its typical lifecycle of stock sees a steady growth peaking around mid-week at the middle portion of days. With this in mind it has been a profitable endeavor to sell during the mid-point of the day. This particular week had Aircastle's stock being sold to acquire additional stocks in other places before being purchased again later in the week for a minimally lower price.

Berry Plastics Group

Berry Plastics Group has steadily grown throughout the week before beginning to decline. This led to the decision to sell additional stock for fear that a change in this steady growth would soon lead to a decline. Investments in this branch are now held at a minimum to minimize loss and wait to see what will eventually occur. A chart of the Berry Plastics' stock activity is below.

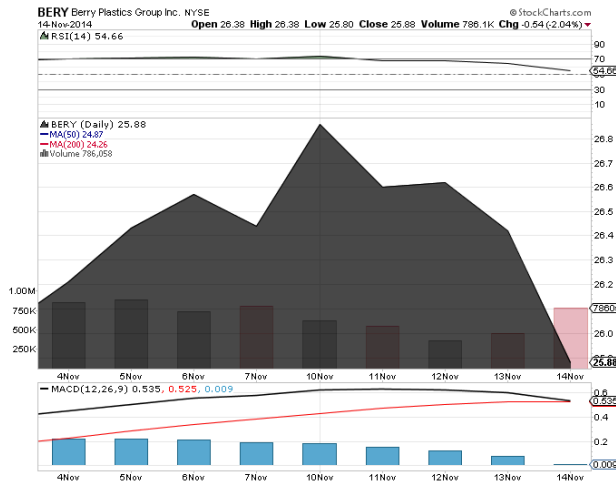


Figure 5.9.1: Stock Activity BERY Week 7

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|------------------|--------|----------|---------|--------|-------------------|---------|------------|--------------|
| 11/10/2014 11:42 | NSR | Buy | \$26.32 | 30 | \$790.59 | | \$939.20 | \$141.54 |
| 11/12/2014 11:09 | PIR | Sell | \$13.37 | 50 | \$667.51 | \$51.61 | \$1,606.71 | \$193.15 |
| 11/12/2014 11:12 | AYR | Sell | \$20.63 | 40 | \$824.21 | \$21.02 | \$2,430.92 | \$214.17 |
| 11/12/2014 13:15 | NSR | Buy | \$27.17 | 35 | \$951.94 | | \$1,478.98 | \$214.17 |
| 11/13/2014 12:36 | AYR | Buy | \$20.61 | 30 | \$619.29 | | \$859.69 | \$214.17 |
| 11/14/2014 14:54 | BERY | Sell | \$25.84 | 25 | \$645.01 | \$46.77 | \$1,504.70 | \$260.94 |

Figure 5.9.2: Week 7 Transactions

5.10 Week 8

Summary

Trades were limited this week seeing as the cash values were distributed among the stocks at an acceptable range. Small investments in Berry Plastics group as well as Aircastle LTD were made in hopes that a quick profit would be made. The week as a whole saw solid gains with a net total profit of \$159.25 for the entire week. This week was much more hands off than other weeks but solid progress was made throughout. Table of Transactions for the week as well as a portfolio summary can be seen below.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit | Total Cash | Total Profit |
|------------------|--------|----------|---------|--------|-------------------|--------|------------|--------------|
| 11/18/2014 12:02 | AYR | Buy | \$20.33 | 30 | \$610.89 | | \$893.81 | \$260.94 |
| 11/20/2014 13:03 | BERY | Buy | \$25.99 | 30 | \$780.69 | | \$113.12 | \$260.94 |

Figure 5.10.1: Week 8 Transactions

5.11 Analysis

After a total drop of 6.38% over the initial three weeks, our stock saw steady growth the remaining five to reach a total profit of roughly 2.9%. This total profit placed the portfolio for Day-Trading investing in second place total among the competing simulations. The graph below represents the history of the account value at the end of each week.

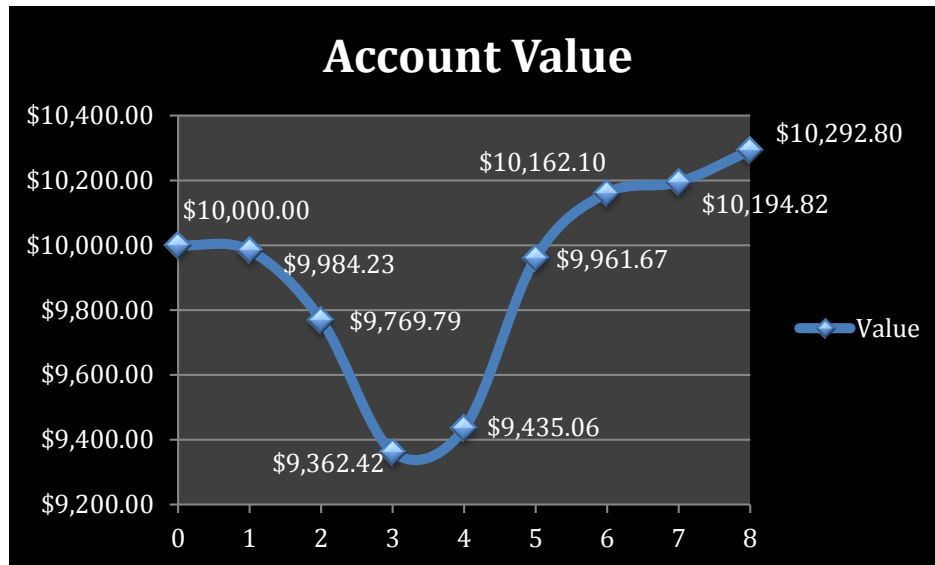


Figure 5.11.1: Account Value History

Day Trading proved to have a number of strengths and weaknesses throughout the simulation. We found that being able to frequently adjust our stocks in multiple areas allowed to minimize losses while being able to make quick profits if we paid close enough attention to trends. Being that Day Trading is one of the most basic practices we were given a larger room of freedom and deviation than other simulations as well. The use of varying trends in the market also allowed for us to categorize when best to buy and sell certain stocks based off when they typically rose and fell throughout the week. A drawback of Day Trading that we felt was evident at certain points is that many trend lines can be misleading and a sudden current event can add so much variation in a trend that a large loss can occur if one is not careful.

This method would best be used as a short-term option for early investors looking to just start getting involved in the market. Short-term investing works well but variation within the market is minimalized and periods of loss can ruin the overall profitability of the strategy as a whole. Long-term investing most typically will survive these periods of loss and a gradual gain over longer periods is more likely. Day Trading provides enough freedom where these periods of loss can be recovered from easier than in other methods.

Some changes that could be made to improve the overall strategy that we used would be to focus stocks more heavily into the major gainers within our simulation. Groups such as **Aircastle LTD. (AYR)** and **Berry Plastics Group (BERY)** saw little to no loss throughout the simulation and both had solid gains. If we had invested heavier during their gradual steady gain, a higher profit would have been seen. We had spread our assets across to far a range and because of this a small gain would typically be overrun by a loss in another market.

In conclusion, Day Trading is a viable option for short term investing and is a valuable teaching tool for beginning investors. The level of freedom it provides allows for proper research and the ambitions of the investor to go as far as they are willing to go.

Chapter 6: Simulation 4 – Margin

6.1 Introduction

Using the Investopedia stock market simulator we are allowed \$10,000 to use as normal trading money. After the initial trading money the simulator allows an additional \$10,000 as buying power which is borrowed money that one can use to buy more shares. This buying power is the extra money that we will use to buy on margin. To buy on margin one would borrow money from an investor in order to buy a certain number of shares. Then once the shares value went up by a good amount the buyer would sell the shares back and pay back the investor, with the buyer keeping the profit for himself. We are looking to have at least an 80% profit increase by the time we buy so that we can ensure we have a sizeable profit from each transaction. In order to buy on margin on the simulator we will first have to spend the initial money given in order to buy shares. We plan on using the first ten thousand dollars to get an idea of which stocks would be good to buy on margin. A good stock to buy on margin is a cheaper stock that will increase a sizeable amount in order to make a large profit after paying back the money we borrowed. Buying on margin can be very dangerous because if the stock we invest in does poorly we will have to pay the money and the difference back to the institution that gave us the loan. Throughout the simulation we plan to buy and trade with 10 to 15 total companies. We will only sell the company if it is absolutely necessary in order to make sure we analyze each company thoroughly throughout the simulation.

6.2 Companies Selected

Apple (AAPL)

Apple is a computer software company that produces phones, mp3 players, computers and many other popular items. With the recent release of the iPhone 6 we thought it would be a profitable stock that we could make a profit on. Apple historically has been a profitable stock when it releases a new product. However, understandably there will be some bugs with the new phone and the stock might take some time to become profitable. Therefore we will be holding onto this stock.

Alibaba (BABA)

Alibaba is an online shopping website that is essentially a shopping search engine. It deals in business to business online web portals, online retail, payment services online, and a data centric cloud computing service. The company mainly deals in online web portals which allow businesses to conduct sales and transactions overseas. In 2012 the company has portals handling over \$170 billion US Dollars. The company went public in 2014 with the highest IPO in history at \$25 billion. We invested in Alibaba in order to sell it at a much higher profit, due to the fact that it is a newer stock it will still be on the rise because of the buzz it has generated. Therefore, we believe it is a safe investment because it will generate a profit that we can exploit and still pay back the money borrowed with.

Nike Inc. (NKE)

Nike is a larger stock that has had continuous success. We only invested in Nike because we wanted a safer stock to keep a continuous profit with. Nike deals in clothing and sports apparel as well as shoes. It is a larger company that is always coming out with newer apparel for the coming

seasons. While Nike has taken some hits after the football season began, we believe it will grow continuously with the start of the basketball season which is their most profitable season.

EG Shares India Infrastructure (INXX)

EG Shares India Infrastructure is an investment firm that focuses on emerging markets. The company provides investors and institutions with the tools necessary to invest in new markets just as they would in developed markets. This Stock was worth taking a risk on because it deals with new markets, if it hits on one of the markets it will yield huge earnings, therefore we thought it was a great low priced company with high reward possibilities.

MannKind(MNKD)

Mankind is a Biotech company that claims to have a treatment for diabetes called Afrezza. At the low cost we thought this would be a great company to take a shot with and possibly make it big with small losses if it doesn't work out due to the low price. The drug shows promise and is being marketed now, therefore we are looking for large returns with this company.

CYS Investments (CYS)

CYS Investments is a real estate company that doesn't own any actual property; it trades in mortgage backed securities. The company is thriving in the low interest rate market that is out there today. While CYS could dip because it is very sensitive to interest rates, but as long as the rates stay low the company will earn a good amount of money for myself while still being able to pay back money borrowed.

IRobot Corp (IRBT):

IRobot is a company that builds household domestic robots for share. They came out with the first original Roomba vacuum robot that came out a couple years ago. IRobot is a good buy right now because they have expanded globally. There is a major demand for their products in

Europe and Asia which is why their share is hot right now and on an upward trend. They also have started developing Robots for the U.S Government giving them a wider product base.

Lockheed Martin Corp. (LMT):

Lockheed Martin is a defense company that deals in all sorts of U.S. defense strategies and weapons. Dealing mainly with planes the company has a lot of black hole military project centers around the country, with its most famous one in California. We bought this company because of the ISIS situation in the Middle East. With the U.S. about to send troops, Lockheed Martin will begin to make profitable gains selling their contracts to the military during war time.

Microsoft Corporation (MSFT):

With the Christmas season coming and Microsoft's release of the Xbox 1 last year this should be a very profitable season for the company. Most gaming consoles are bought during the Christmas time and Microsoft has had a year to work out any bugs in the system. With new games coming out as we get closer to Christmas and children begging their parents for Xboxes, or games if they already own one, we predict that Microsoft will be a profitable investment through the holiday season.

CBIZ Inc. (CBZ):

CBIZ Inc. is a professional services company that helps larger companies and government agencies deal with their payroll and regulation requirements for their workers. During the mini crash of 2008 the company plummeted with the unemployment rate, however, with unemployment at a recent record low of 5.91% the company is taking off again with more business than ever. We believe the country is pulling out of a low period and the unemployment rate will continue to decrease giving CBIZ a chance to be very profitable.

LionBridge Technologies Inc. (LIOX):

LionBridge is a company that deals with language training technologies, and language translation technologies. Recently LionBridge added Google and Microsoft to their client list making them a more enticing company to buy. They have added a lot of companies since those two deals and are now becoming prominent in the language technology field. We predict a steady increase for the company and am excited to see where it goes in the coming months.

Macys (M):

Macys is a department store dealing mostly in clothing. We think this was an easy buy as Macys historically rises as the holiday season approaches. With new clothing lines for the winter and holiday consumer base the stock should be very profitable in the coming months.

6.3 Week 1

During Week 1 we bought three stocks, Nike, Apple, an Alibaba. All three returned profits; however, they were very small profits due to the fact that it is only week 1. weam hoping that Apple will continue its upward trend with the release of the iPhone 6. Alibaba is a hot stock right now rising fast and this is a trend we hope continues for us into the coming weeks. However as seen in Figure 6.3.1, it has dropped recently allowing for us to buy it at a lower price than the absurd ninety nine dollars per share it was selling at earlier in the week. We hope the trend returns to rising prices so we can make a nice profit by selling off some of the shares within the company. Transactions for the week can be seen in Figure 6.3.1 below.

| Date | Symbol | Buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Cash | Total Profit |
|-------------|---------------|----------------------|--------------|---------------|-----------------------------------|-------------------------|-----------------------|-------------------------|
| 9/26/14 | AAPL | Buy | \$99.59 | 10 | \$996.90 | | \$9,003.10 | \$0 |
| 9/26/14 | BABA | Buy | \$89.88 | 10 | \$899.79 | | \$8,103.31 | \$0 |
| 9/26/14 | NKE | Buy | \$88.28 | 10 | \$883.79 | | \$7,219.52 | \$0 |

Figure 6.3.1 Week 1 Transactions

| Date | Open | High | Low | Close | Volume |
|-----------|-------|-------|-------|-------|-------------|
| 9/26/2014 | 89.73 | 90.46 | 88.66 | 90.46 | 18,339,716 |
| 9/25/2014 | 91.09 | 91.50 | 88.50 | 88.92 | 28,597,506 |
| 9/24/2014 | 88.47 | 90.57 | 87.22 | 90.57 | 32,088,108 |
| 9/23/2014 | 88.94 | 90.48 | 86.62 | 87.17 | 39,009,788 |
| 9/22/2014 | 92.70 | 92.95 | 89.50 | 89.89 | 66,657,827 |
| 9/19/2014 | 92.70 | 99.70 | 89.95 | 93.89 | 271,879,435 |

Figure 6.3.2 Alibaba Price History

6.4 Week 2

Figure 6.4.1 gives a summary of our trades for this week. In Figure 6.4.2 you can see that Apple had upward trend this past week, as we had hoped. With the release of the iPhone 6 and 6 plus the price has risen steadily from the start of the week. We hope this trend continues as the company works out many of the bugs in the new phones and releases a new operating system for the phone with updates.

As for Nike, we decided to sell it for a profit of almost 2 dollars per share. As shown in Figure 6.4.3, we saw a fluctuating price throughout the week and so at the first opportunity we sold the company at a high price for the week. We plan to rebuy Nike next week hoping it goes down again to make another profit.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit/Loss | Total Cash | Total Profit |
|---------|--------|----------|---------|--------|-------------------|-------------|------------|--------------|
| 9/29/14 | INXX | Buy | \$13.00 | 50 | \$650.99 | | \$6,568.53 | \$0 |
| 10/3/14 | NKE | Sell | \$89.92 | 10 | \$898.21 | \$14.42 | \$7,466.74 | \$14.42 |
| 10/3/14 | MNKD | Buy | \$5.58 | 100 | \$558.49 | | \$6,908.25 | \$14.42 |
| 10/3/14 | CYS | Buy | \$8.33 | 100 | \$833.49 | | \$6,074.76 | \$14.42 |

Figure 6.4.1 Week 2 Transactions

| Date | Open | High | Low | Close | Volume |
|-----------|--------|--------|--------|--------|------------|
| 10/3/2014 | 99.44 | 100.21 | 99.04 | 99.62 | 43,469,585 |
| 10/2/2014 | 99.27 | 100.22 | 98.04 | 99.90 | 47,757,828 |
| 10/1/2014 | 100.59 | 100.69 | 98.70 | 99.18 | 51,491,286 |
| 9/30/2014 | 100.81 | 101.54 | 100.53 | 100.75 | 55,264,139 |
| 9/29/2014 | 98.65 | 100.44 | 98.63 | 100.11 | 49,766,312 |

Figure 6.4.2 Apple Price History

| Date | Open | High | Low | Close | Volume |
|-----------|-------|-------|-------|-------|-----------|
| 10/3/2014 | 89.76 | 90.45 | 89.17 | 90.29 | 4,399,389 |
| 10/2/2014 | 87.67 | 89.51 | 86.88 | 89.30 | 4,372,095 |
| 10/1/2014 | 88.91 | 89.00 | 87.51 | 87.70 | 4,736,277 |
| 9/30/2014 | 88.69 | 90.29 | 88.40 | 89.20 | 5,792,263 |
| 9/29/2014 | 88.27 | 90.10 | 88.27 | 89.12 | 7,425,478 |

Figure 6.4.3 Nike Price History

6.5 Week 3

During this past week we purchased shares in six companies (as seen in Figure 6.5.1). To this point in the simulation, Alibaba has been our worst investment, losing money on a weekly basis (this can be seen in Figure 6.5.2). It has lost a total of about 3 dollars per share after shooting up 7 dollars per share a week before we bought it. We are hopeful that Alibaba will rise again, but we are starting to wonder if it was only a one time rise in price and if we missed our opportunity to sell for a profit.

This week we also bought back the shares of Nike, as share prices dipped again. We sold for a profit last week but bought again this week at a lower price hoping for another increase in profit so we can repeat this process.

I also noticed a downward trend in Microsoft which has lost us a total of eighty three dollars since we bought it on Wednesday. However IRobot has been a fantastic investment so far netting us a decent sixty three dollars since we invested earlier this week. We are looking for the trends to turn soon with the entire market hopefully getting a holiday bump in the coming weeks.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit/Loss | Total Cash | Total Profit |
|----------|--------|----------|----------|--------|-------------------|-------------|-------------|--------------|
| 10/8/14 | NKE | Buy | \$88.88 | 10 | \$889.79 | | \$5,184.97 | \$14.42 |
| 10/9/14 | CYS | Sell | \$8.77 | 75 | \$656.76 | \$32.01 | \$5,841.73 | \$46.43 |
| 10/9/14 | IRBT | Buy | \$31.39 | 100 | \$3,139.99 | | \$2,701.74 | \$46.43 |
| 10/9/14 | LMT | Buy | \$176.32 | 5 | \$882.59 | | \$1,819.15 | \$46.43 |
| 10/10/14 | MSFT | Buy | \$46.50 | 50 | \$2,325.99 | | -\$506.84 | \$46.43 |
| 10/10/14 | CBZ | Buy | \$7.90 | 100 | \$790.99 | | -\$1,297.83 | \$46.43 |
| 10/10/14 | LIOX | Buy | \$4.12 | 100 | \$412.99 | | -\$1,710.82 | \$46.43 |

Figure 6.5.1 Week 3 Transactions

| Date | Open | High | Low | Close | Volume |
|-----------|-------|-------|-------|-------|------------|
| 10/7/2014 | 87.95 | 89.70 | 87.06 | 87.67 | 12,791,745 |
| 10/6/2014 | 89.15 | 89.65 | 88.06 | 88.31 | 9,276,113 |
| 10/3/2014 | 88.10 | 89.94 | 87.65 | 88.10 | 18,485,725 |
| 10/2/2014 | 86.27 | 88.20 | 85.61 | 87.06 | 21,469,688 |
| 10/1/2014 | 88.70 | 88.94 | 86.04 | 86.10 | 24,029,603 |
| 9/30/2014 | 89.00 | 90.88 | 88.46 | 88.85 | 24,419,426 |
| 9/29/2014 | 89.62 | 89.70 | 88.02 | 88.75 | 25,302,002 |
| 9/26/2014 | 89.73 | 90.46 | 88.66 | 90.46 | 18,339,716 |

Figure 6.5.2 Alibaba Price History

6.6 Week 4

This week, we purchased more of Lockheed Martin because the five shares we bought in week three were performing well (this can be seen in Figure 6.6.1). The price of the stock was higher but the returns will be worth it. The company is a large defense company that will continue to pay dividends with the conflict in the Middle East and ISIS coming to fruition again.

I also bought twenty shares of Macy's; our thinking was that with the holiday season coming up department stores will do well. This is why we bought a few shares of Macy's. If the small amount we bought pay well then we plan to buy more in the coming weeks as we get closer to Christmas Black Friday.

Other than those two companies the week held pretty steady, no major growth or major losses. All of the companies we have invested in are making money however we are waiting for a major return. We believe one is coming and hopefully over the break week we will see the return we are hoping for.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit/Loss | Total Cash | Total Profit |
|----------|--------|----------|----------|--------|-------------------|-------------|-------------|--------------|
| 10/14/14 | LMT | Buy | \$175.34 | 15 | \$2,631.09 | | -\$4,341.91 | \$46.43 |
| 10/14/14 | M | Buy | \$57.28 | 20 | \$1,146.59 | | -\$5,488.50 | \$46.43 |

Figure 6.6.1 Week 4 Transactions

6.7 Week 5:

For week 5 we decided to hold off on buying or selling and see how our portfolio did as a whole over the break week. Figure 6.7.1 is a portfolio summary to this point in the simulation and shows that our portfolio grew immensely. By the end of the week it had a Stock value of \$16,805.75 and a total net asset of \$11,317.25. Every company we have invested in is making gains daily and some are taking off.

I Robot has been our best investment so far as it is steadily on the rise. We bought it at \$31.39 per share for 100 shares and now it is selling for \$35.72 per share netting us almost \$450. we plan to sell some of the shares this coming week to make the profit and then wait to buy them back when the price dips again.

Apple has also been making strides and returning a good dividend. With the bugs worked out of the iPhone 6 and it finally performing as people want it too they are flying off the shelves. With Christmas season coming the price of the shares should continue to increase as it has historically around this time.

| Stock Portfolio | | Trade Stock | Symbol Lookup | More | | | |
|-----------------------------|-----------------------------------|-------------|----------------|---------------|--------------------|-----------------------|----------------------------|
| Symbol | Description | Qty | Purchase Price | Current Price | Total Value | Today's Change | Total Gain/Loss |
| ⊕ Sell AAPL | APPLE INC | 10 | \$99.59 | \$108.00 | \$1,080.00 | \$0.00(0.00 %) | \$84.09(8.44 %) |
| ⊕ Sell BABA | ALIBABA GROUP HOLDING LTD ADR | 10 | \$89.88 | \$98.60 | \$986.00 | \$0.00(0.00 %) | \$87.20(9.70 %) |
| ⊕ Sell INXX | EGSHARES INDIA INFRASTRUCTURE ETF | 50 | \$13.00 | \$13.85 | \$692.50 | \$0.00(0.00 %) | \$42.50(6.54 %) |
| ⊕ Sell MNKD | MANNKIND CORP | 100 | \$5.58 | \$6.01 | \$601.00 | \$0.00(0.00 %) | \$43.50(7.80 %) |
| ⊕ Sell CYS | CYS INVESTMENTS INC | 25 | \$8.33 | \$8.93 | \$223.25 | \$0.00(0.00 %) | \$15.13(7.27 %) |
| ⊕ Sell NKE | NIKE INC | 10 | \$88.88 | \$92.97 | \$929.70 | \$0.00(0.00 %) | \$40.90(4.60 %) |
| ⊕ Sell IRBT | IROBOT CORP | 100 | \$31.39 | \$35.72 | \$3,572.00 | \$0.00(0.00 %) | \$433.00(13.79 %) |
| ⊕ Sell LMT | LOCKHEED MARTIN CORP | 20 | \$175.59 | \$190.57 | \$3,811.40 | \$0.00(0.00 %) | \$299.70(8.53 %) |
| ⊕ Sell MSFT | MICROSOFT CORP | 50 | \$46.50 | \$46.95 | \$2,347.50 | \$0.00(0.00 %) | \$22.50(0.97 %) |
| ⊕ Sell CBZ | CBIZ INC | 100 | \$7.90 | \$9.23 | \$923.00 | \$0.00(0.00 %) | \$133.00(16.84 %) |
| ⊕ Sell LIOX | LIONBRIDGE TECHNOLOGIES INC | 100 | \$4.12 | \$4.83 | \$483.00 | \$0.00(0.00 %) | \$71.00(17.23 %) |
| ⊕ Sell M | MACY'S INC | 20 | \$57.28 | \$57.82 | \$1,156.40 | \$0.00(0.00 %) | \$10.80(0.94 %) |
| Total: | | | | | \$16,805.75 | \$0.00(0.00 %) | \$1,283.31 (8.27 %) |

Figure 6.7.1 Portfolio Summary 1

6.8 Week 6

With iRobot performing so well we decided to sell most of the shares and, as shown in Figure 6.8.1, it paid off. We are able to make a substantial profit on this company. Our return on our initial investment in iRobot yielded almost five hundred dollars making it our most lucrative investment to date.

We also decided to sell Alibaba this week. This company's price has fluctuated the most over this simulation; in fact in an earlier section we even stated that it was our worst investment to that point. Therefore, when we saw a price that would yield a good return we decided to sell all of it. We made almost one hundred fifty dollars on this investment which we consider a win after the unpredictable fluctuation we saw in the company.

We are planning on taking the money gained from these companies and investing it into Macy's. The department store's value is steadily rising with the holiday season, and most importantly Black Friday, approaching. We believe we can make a significant profit with this company, however with the amount we have invested into it now we will not be able to make a substantial profit.

Apple continues to make money with the success of the iPhone 6; at this point in the simulation the company is up a whole ten dollars per share from when we bought it. If it keeps rising at this pace it will yield a favorable return.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit/Loss | Total Cash | Total Profit |
|---------|--------|----------|----------|--------|-------------------|-------------|-------------|--------------|
| 11/4/14 | IRBT | Sell | \$36.33 | 99 | \$3,595.68 | \$488.07 | -\$1,892.82 | \$534.50 |
| 11/4/14 | BABA | Sell | \$104.27 | 10 | \$1,041.71 | \$141.92 | -\$851.11 | \$676.42 |

Figure 6.8.1 Week 6 Transactions

6.9 Week 7

During week seven our portfolio is still on the rise. Therefore, we decided not to make too many trades this week. However, as one can see in Figure 6.9.1, we did decide to sell all of our shares of Apple because it was performing very well. It reached what we believe to be the limit of its growth and will either level off or regress in some amount. We sold it for a net profit of \$145.90 which is a sizeable profit for only ten shares in the company. The iPhone 6 was the reason for this profit; the new product was a driving force for the raise in price of the Apple shares. We are very happy with the profit out of this company and will hopefully be able to re-invest if the price comes back down to a reasonable level before Christmas.

Next week is the last week of the simulation; thus far our portfolio is performing fantastically. We are in the lead of our four members in terms of total account value. Our portfolio is still completely in the green meaning that we are only making profit on every share we have bought to this point. If this keeps up our profit will be exceptional for a margin buying strategy. Margin buying typically can return a low profit, therefore where our entire account is performing well we are quite satisfied with its performance.

| Date | Symbol | Buy/Sell | Price | Shares | Net Cost/Proceeds | Profit/Loss | Total Cash | Total Profit |
|----------|--------|----------|----------|--------|-------------------|-------------|------------|--------------|
| 11/14/14 | AAPL | Sell | \$114.18 | 10 | \$1,141.80 | \$145.90 | \$290.69 | \$822.32 |

Figure 6.9.1 Week 7 Transactions

6.10 Week 8

For week eight our portfolio was still performing very well. There was a major dip in prices around Thursday but the market went back up to its former prices by Friday. Luckily, shown in Figure 6.10.1, we sold the remainder of our CYS and IRBT shares before Thursday and turned a small profit on them. We did this because we saw the shares were at high prices but we also had already sold off some of the original one hundred shares we bought for each. Therefore knowing this sell would only make a small profit we made the sales to take whatever cash we could get from them. Overall, we made around fifty dollars total on the CYS investment and almost five hundred dollars on the IRBT investment. Those are both profits we are happy with. Week eight marks the last week of the simulation and our portfolio came out on top. With a final account value of \$11,685.30 we made a profit of \$1,685.30 which was over \$1,000 more than the second place portfolio. Based on these results we are extremely happy with how our simulation went. We believe we were very smart in choosing which shares to invest in and it paid off with a hefty profit.

| Date | Symbol | Buy/ Sell | Price | Shares | Net Cost/ Proceeds | Profit/ Loss | Total Cash | Total Profit |
|----------|--------|--------------|---------|--------|--------------------------|-----------------|---------------|-----------------|
| 11/18/14 | IRBT | Sell | \$35.35 | 1 | \$35.35 | \$(3.96) | \$326.04 | \$(857.67) |
| 11/18/14 | CYS | Sell | \$9.15 | 25 | \$228.75 | \$(20.50) | \$554.79 | \$(878.17) |

Figure 6.10.1 Week 8 Transactions

6.11 Analysis

In conclusion, we believe that margin buying is an extremely effective method of investing if it is done correctly. It is however, a very dangerous method if done incorrectly. There is a large possibility that the investor will lose a lot of money due to the fact that one cannot make a profit before paying back the money owed to the lender first. If the investor makes a bad investment he will lose the money the shares lose him and still be in debt to the lender meaning that he could lose up to double his or her money. However in this simulation we believe that through careful selection of both big and small companies we are able to make the best of this method and make a hefty profit. Picking the companies took a lot of research and hard work. Through countless hours of studying and looking at trend charts over the past few years we are able to select our companies based on current events and how they historically perform around this time of year. Every company has a different reason for picking it, for example Lockheed martin was chosen because of the ISIS crisis which will call for more military manufacturing which is Lockheed's specialty. However, Macy's was chose strictly for its historical holiday performance.

As for individual performances, iRobot was absolutely our best investment by far. The company began to expand globally opening up markets in japan and it paid huge dividends. The one hundred shares we bought made huge profits for our portfolio. We do not believe we made a bad investment over the course of the simulation because each one was profitable. But, Alibaba was at one point an awful investment that turned itself around eventually. It was losing us money at a rapid rate but we stuck with it and it turned out okay. Apple was also a fantastic investment as the iPhone 6 drove its profit through the roof making us almost ten dollars per share by the end of the simulation.

Luckily we did very well with the margin buying strategy; however our conclusions are that it is still not the best way to invest for risk-averse, or long term investors. At the start of the simulation we lost a lot of money when the market was not performing in our favor and it was almost disastrous. If one were looking to invest short term with the potential to gain substantial profit, margin is a method we would recommend. Trading on margin allows an investor to purchase a greater number of shares than they would have been able to purchase with just their cash, giving the investor more exposure to the market and offering the possibility of greater returns.

Chapter 7: Comparison of Simulations

7.1 Sector Diversification

A sector can be defined as a part or division of an economic market that has similar characteristics. This particular chapter will explore the various investments made in differing sectors by the four simulations. Each simulation invested to different extremes in various markets such as healthcare, industry, and technology. A diverse stock portfolio with smart investments across multiple sectors helps minimize risk and allows for profit to be made even if one sector fails as the other ones will pick up its slack. Some professionals choose to invest in one sector and have seen profit by doing this. This is most typically achieved through use of experience and insider knowledge of the industry. Taking into account the diversity of a stock portfolio is a beneficial tactic that can provide a failsafe method towards profit.

Value Based Investing:

The Value Based Investing simulation consisted of four different sectors with emphasis focused in the service and technology sectors. The technology sector saw the largest variety of purchases and trades as a whole. The technology sector consists of various computer networking, hardware, and scientific equipment companies. This sector regularly profits when hardware is updated and new operating systems are called for production. This year alone has seen further development in the technology sector. The chart below characterizes the breakup of investing for Value Based Investing.

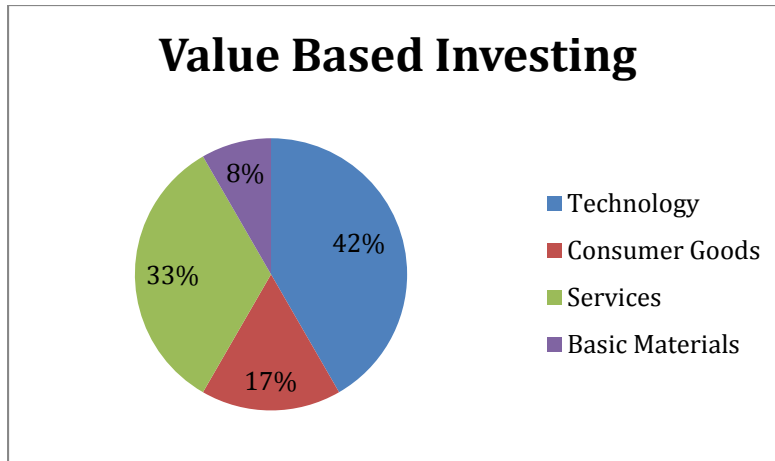


Figure 7.1.1 Value Based Investing

High Frequency Trading:

High Frequency Trading saw the most diversified portfolio of all the simulations. Its main focus was in health care and services leaving the other sectors involved to average about 10% of the total portfolio respectively. Although very diverse, the health care sector did not prove to be profitable under the simulations parameters and a minimal loss was seen at the end of this particular simulation. The Health Care sector consists of pharmaceuticals, medical diagnostics, and hospital services to the public. This sector typically sees steady increase because it is in constant demand no matter what circumstances. With continued growth in health care needs and aging patients this sector will continue to become more lucrative.

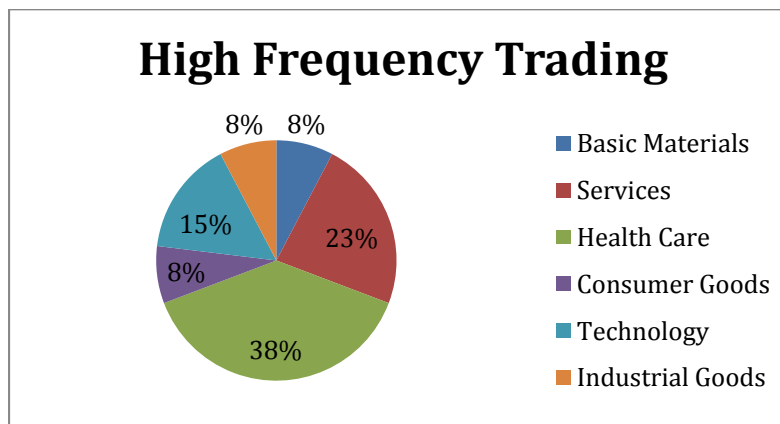


Figure 7.1.2 High Frequency Trading

Day Trading:

Day Trading saw the most simplistic breakup of sectors for all of the simulations. While simple, the strategy used proved to be beneficial for the simulation as a whole and a profit was seen by the end of the simulation. This particular portfolio emphasized the services industry with technology and consumer goods both backing it heavily. The service industry consists of various services be it advising, travel, or manual labor. Overall the industry fluctuates seasonally at a higher frequency than many other sectors. This could prove beneficial to a high risk simulation such as Day Trading as quick profits can be made when the market spikes.

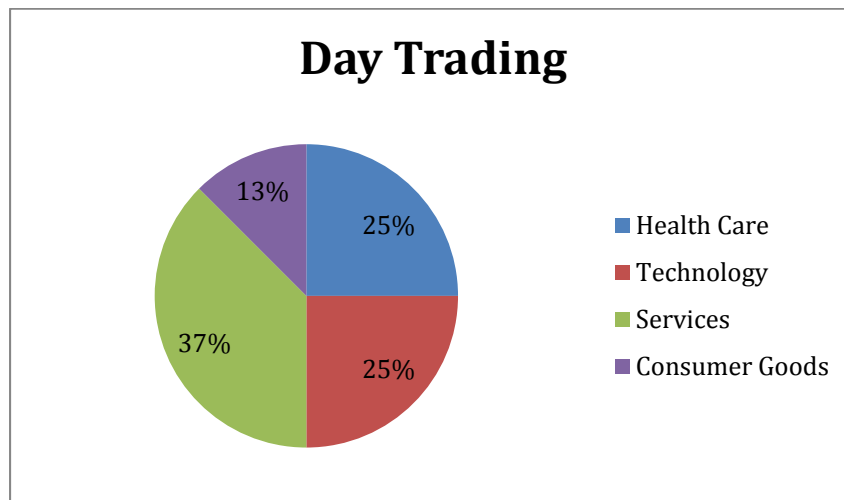


Figure 7.1.3 Day Trading

Margin:

Margin buying also consisted with one of the most diverse portfolios among all of the simulations. Services and consumer goods accounted for approximately 60% of the total portfolio for the rest of the sectors comprising of about 10% each. Consumer goods consist of marketable and perishable consumables. This particular distribution proved to be profitable as Margin buying saw the largest gains among all the simulations.

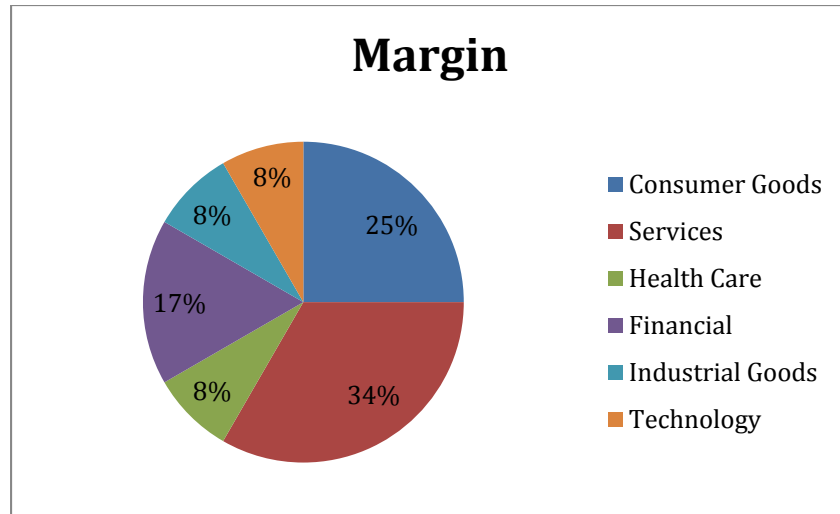


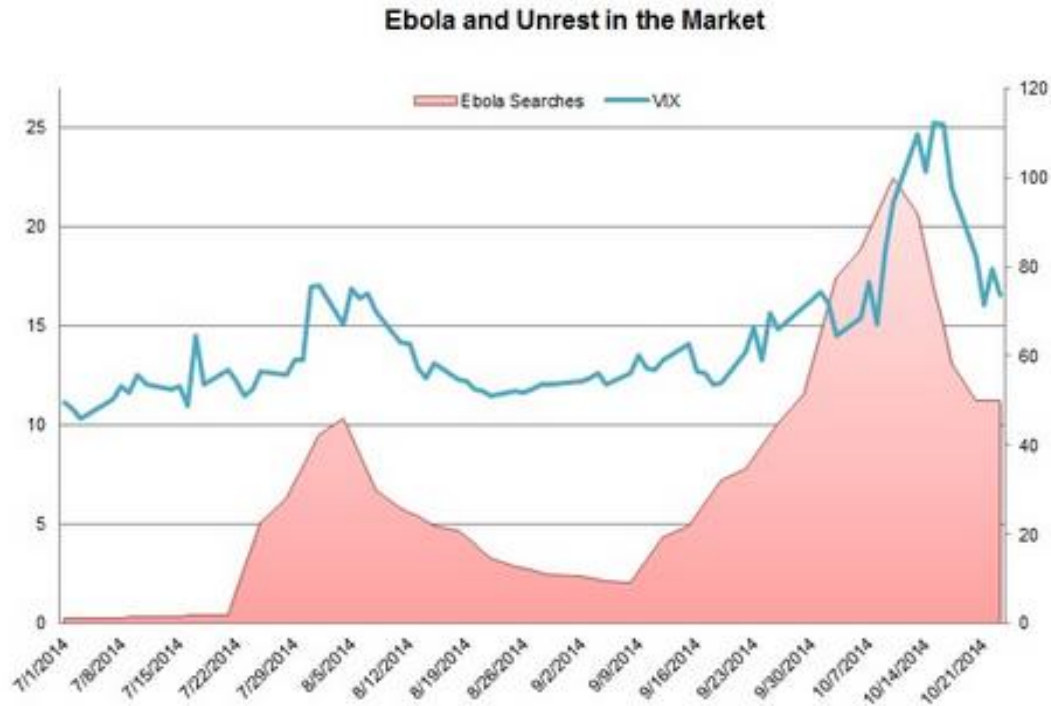
Figure 7.1.4 Margin

Based on our simulations the margin portfolio saw the highest profit. This is justifiable in a short term simulation, as the market spiked in the two areas that this portfolio was heavily invested in. This is a risky strategy but in this case proved to be beneficial due to both the seasonal growths of the service and consumer good industry in the winter months. Overall, a diversified market proved to be beneficial for all the simulations with three out of the four making a profit by the end of their respective simulation.

7.2 Market Influences

Ebola Scare

The Ebola scare in the United States affected many different areas of the stock market, but showed its greatest effect on Airline stocks and Hazmat-suit companies¹⁴. Both United and Delta airlines stocks had been down 16% and 18% during the span of three weeks (Sep 23 to Oct 13), which was when the Ebola scare was at its peak. Ebola has a whole created a lot of unrest in the markets because people were very scared of what could potentially happen, causing a lot of volatility throughout the market.



(Data Sourced from GoogleAnalytics & Yahoo!Finance)

7.2.1 Web searches with "Ebola" and Market Volatility Index

The above graph shows how much unrest there was when people were the most afraid of Ebola and potentially contracting the deadly virus.

The Ebola scare did not have a negative impact on every company in the market. Hazmat-suit companies greatly benefited from the scare, companies such as Lakeland Industries Inc. (LAKE) and Alpha Pro Tech Ltd. (APT) were up 142% and 130% when the scare was at its peak. Since hazmat-suits can only be worn once, the company's success was very sustainable throughout the scare because people would have to buy many at a time or replace the one they bought after they wore it just once.

Falling Oil Prices

For obvious reasons, the entire population of the United States has been very happy with the continuous fall of gas prices throughout the country, however, that does not help the stocks that include oil, materials, and industrial and utilities names in commodity-related businesses¹⁵. Due to the fall of gas prices, between 17% and 18% of the S&P was a loser. Despite the fact that gas prices have fallen, it has not affected consumer spending as much because of the lack of clarity of whether or not the prices will continue to fall, so gas prices falling did not have as much of an effect on the market as a whole as it did on specific sectors of the market mentioned earlier.

The Holiday Effect

The Holidays, mainly the Pre-Holiday Effect is when stock prices rise on the final trading day before the holiday. Most of the stocks that are affected are those that deal in retail, online shopping, and credit because that is the time of year when the most money is being spent. One stock that was greatly affected by Christmas this year was Weyerhaeuser (WY), which is a timber company that grows the most popular kinds of Christmas trees. This stock had climbed a great deal before the Holidays this year as people who did not want to buy their Christmas trees from privately owned companies would more than likely turn to Weyerhaeuser to acquire their tree.

A retail stock that was affected by the Holiday effect was Mattel (MAT), which is a doll company, which had its third-quarter earnings grow much larger than the Wall Street estimates and had about a 28% sales jump in the third-quarter. This company is also the creators of Barbie dolls, which sales were on the rise again by 3% due to the Holiday effect after consecutive quarters of decline¹⁶.

Another category of stocks that was affected by the Holidays was online shopping, specifically Amazon (AMZN). As a whole, the online shopping category grew about 20% before

the Holidays, and Amazon has been on the rise since the beginning of 2014, but had its greatest growth before the Holidays putting its P/E ratio above 150, and raising its price 60% over the last calendar year.

7.3 Modern Portfolio Theory

The saying high risk high reward is applicable to many decisions in everyday life. It is also a concept that is prevalent in the trading industry, the higher a risk you take the higher the reward that is possible. This can be seen in the way our portfolios turned out throughout the simulation. A certain amount of risk was taken in each simulation which was either higher or lower based on the training method that particular simulation used. But before understanding which simulation had higher or lower risk one must first understand the concept of risk and reward from a financial standpoint.

In the 1950's an economist by the name of Harry M. Markowitz tried to explain the idea of risk and reward by searching for a model that would show consistently the best way to maximize returns on minimal risk. This function was called the modern portfolio theory, and it was the first analytical method to determining how to build an optimal stock portfolio.

In the Modern Portfolio Theory a risky stock is defined as a stock with inconsistent returns, the higher the deviation in returns the higher the risk will be. This seems to be a pretty fundamental idea used when building a portfolio, a company that does not hold steady and continually fluctuates in its yearly returns is probably not a company worth investing in. But where is the line on what would be a smart investment with high reward and a dumb investment that can cripple your portfolio? One needs to take risks to make a profit and that means one would have to invest in a stock with high variance in returns every once in a while to be successful. In order to answer this

question Markowitz came up with the efficient frontier which is the standard for an optimum portfolio. The efficient frontier can be seen below in Figure 8.1.

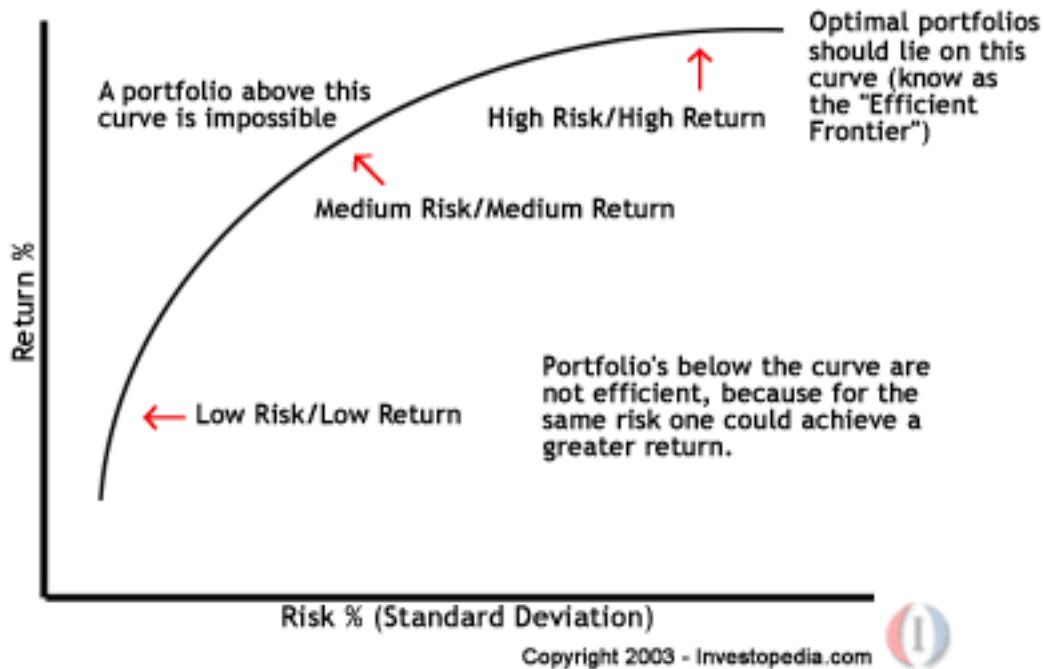


Figure 7.3.1 Risk/Return Graph for Modern Portfolio Theory

The graph shows that in order to be on the efficient frontier one would need to match up companies with high risk and those with low risk to create an optimum portfolio. This means that the most diverse portfolio would be the most efficient and then in turn the least risky.

However, let us think of this theory in terms of volume of trading because some methods of trading trade much more frequently than others. A low risk method would be one that trades at a high volume because they would be trading more often. This would mean trading companies probably multiple times a day which means that profits and losses would never be too significant. On the other hand a method that trades less would have a much higher risk because the stock price

will fluctuate more before a trade is made increasing the chance of losing money but also making the possibility for profit much greater.

In this investigation we monitored four different types of trading, values based, high frequency, day trading, and margin buying. High frequency trading and day trading will be the least risky based on the number of trades that they execute each day. Day trading would be the least risky because all of the transactions happen during the day. There would not be much of a change in price that would yield a high reward. The investor would only make a significant profit if the company they invested in was a very high risk company. Otherwise profits would be minimal which can be seen in our simulation.

In high frequency trading there would be a little more risk than day trading because there are multiple transactions happening but they are not limited to the day time as they are with day trading. Things can happen overnight in a company that causes the stock to plummet and lose the high frequency trader a lot of money. However, more often than not the transactions would not yield a high reward because of the small changes in price between trades.

The next highest risk would be in values based investing which is typically a long term strategy. Over a period of time the investor invests only in companies that fit the investor's values and they then monitor the companies over a period of time. By carefully monitoring the portfolio it can be very risky if a company starts to tank. If a high risk investment is made in this method it can be devastating because the investment will take a lot of time to make back the lost money if it ever does. However, due to the high risk of the method it can return a large profit if done correctly. In our simulation it made a profit but not a large one, meaning the investor didn't take any chances on high risk companies.

The highest risk method we used was that of margin buying. It is a long term strategy that invests very different than the other methods. Due to the fact that margin buying uses borrowed money the investor must take some chances on high risk companies in order to make a profit. If he breaks even the investor makes no money because he has to pay back the lender first. Therefore many margin buyers will have more risky portfolios when compared to other methods. This trend can be seen in our simulation as well with the margin buying strategy taking some risks that ultimately paid off with the highest return of the four simulations.

Chapter 8: Conclusion

We based our IQP around an eight week stock-market simulation that ran from late September to late November. The simulations contained in the report included four different buying strategies. The first was value based investing which is centered around looking at companies that have a market cap over fifty million as well as high earning yields and return on capital. The second was high frequency trading which is centered on targeting stocks that have fallen and trading them the next day at market open to make a profit. The third is day trading which is an investing strategy that analyzes trend lines in each company followed by trading daily at the highs and lows. The fourth and final investing strategy is margin buying, which focuses on buying companies with large growth potential using borrowed money from a lender. Once the shares are yielding an eighty percent return after paying back the lender they will be sold. In addition to the simulations, we also touched upon basic market terminology and a history of the stock market.

Simulation four, margin buying, concluded the simulation as the most profitable investment strategy. The final account value for simulation four was \$11,685.30, which yielded a profit of \$1,685.30. Coming in second place was the day trading method that had an account value of \$10,371.60 which yields a profit of \$371.60. Third place goes to the value based investing strategy which had a final account value of \$10,269.99 which yields a profit of \$269.99. Finishing in last place was the high frequency trading strategy with a final account value of \$9,826.74 which has no profit and actually lost \$173.26.

A vital goal for this project was to identify what types of investors would benefit most from each particular strategy. Looking at value based investing, though profit was made in the short term, this method is more suited for investors looking to make long term investments. Since VBI tend to look at companies that are strong financially but currently underperforming, short term

investors would be susceptible to the ebbs and flows of the market. As for high frequency trading, someone who is looking to make a consistent but marginal profit on a day to day basis is idea. This investor would also have to have a good amount of money to cover potential losses. Ideally the investor would be willing to make trades on an hourly basis and has the time to keep up with the market.

Day trading would ideal for an investor looking for a high amount of freedom within their portfolio. They would need the time to analyze trend lines and be willing to monitor the market on a daily basis. We recommend this method for short term investing only because over the long term there are more variables that can cause fluctuation. At the beginning of day trading the investor would need some prior knowledge before starting with this method or substantial losses may occur. Knowing past histories of companies the investor picks and their current news is also a major part of this strategy. Margin buying is a strategy that only a short term investor who is willing to take on a high risk high reward type of strategy. There is potential for large losses because of the borrowed money aspect of the strategy, therefore if the investor plans to use this strategy for the long term it will not be as profitable. The investor using this strategy cannot be conservative either. They will not make much of a profit with a conservative approach because of the necessity to pay back the lender before making their own profit.

Our main personal goals for the project were to learn how to analyze the stock market effectively and also to learn how to trade using the four methods outlined above. We believe that we effectively achieved this goal because of the research we put into the project as well as the effort put into analyzing our buying strategies. With over two months of research we believe that we all have gained valuable experience in analyzing market trends and evaluating a stock through earnings reports, trend lines and other methods. We also started with the ambitious goal of having

at least one portfolio achieve a 50% return which would end in an account value of \$15,000. Though none of us reached the goal of \$15,000 three out of the four portfolios were profitable and we all gained valuable knowledge in the investing field which will lead to better and more confident decisions in the future.

References

1. *Guru Focus* - Joel Greenblatt Speaking at NYSSA (2005, December). Retrieved September 28, 2014 <http://www.gurufocus.com/news/802/joel-greenblatt-speaking-at-nyssa>
2. "How to Use "Magic Formula Investing" to Beat the Market. via *WikiHow* Retrieved September 29, 2014 [http://www.wikihow.com/Use-\"Magic-Formula-Investing\"-to-Beat-The-Market](http://www.wikihow.com/Use-\)
3. *Investor's Business Daily* - UPS Adds Pickup Locations Ahead of Holiday Season. Retrieved September 29 2015 <http://news.investors.com/100814-720829-ups-adds-pickup-locations-ahead-holiday-season.htm?ven=yahoocp&src=aurilled&ven=yahoo>
4. Peter, Thomas. "Source: Kellogg Evaluating Bid for United Biscuits" via *Reuters* (2014, August). Retrieved September 29 2014. <http://www.reuters.com/article/2014/08/06/us-kellogg-unitedbiscuits-idUSKBN0G61ZZ20140806>
5. Bost, Callie and Renick, Oliver. - "U.S. Stocks Drop amid Hong Kong Protests, Rate Concerns." via *Bloomberg* (2014, September). Retrieved September 29, 2014. <http://www.bloomberg.com/news/2014-09-29/u-s-index-futures-decline-before-housing-consumer-data.html>
6. "US Stocks Surge as Fed Sees More Low Rates" via *Yahoo Finance* (2014, September). Retrieved October 8 2014. <http://finance.yahoo.com/news/us-stocks-surge-fed-sees-200901615.html>
7. Gibson, Kate. "S&P 500 Posts Longest Weekly Loss Streak since 2011." via *CNBC* (2014, October) Retrieved October 17 2014. <http://www.cnbc.com/id/102097314>
8. "UPS Delivers Strong 3Q Results; 3Q EPS Moves 13.8% Higher" via *UPS* (2014, October). Retrieved October 24 2014. <http://www.investors.ups.com/phoenix.zhtml?c=62900&p=irol-newsArticleEarnings&ID=1981266>
9. Levisohn, Ben. "Why Weight Watchers' Stock Is Losing Weight." via *Barrons* (2014, October). Retrieved October 30 2014. <http://blogs.barrons.com/stockstowatchtoday/2014/10/30/why-weight-watchers-stock-is-losing-weight>
10. Hodge, Jamie. "United Parcel Service (UPS) Reaches New Lifetime High Today." via *TheStreet* (2014, November). Retrieved November 4 2014. <http://www.thestreet.com/story/12939992/1/united-parcel-service-ups-reaches-new-lifetime-high-today.html>
11. Reed, Ted. "Delta Airlines Shares Rise on Strong October Traffic Report." via *TheStreet* (2014, November). Retrieved November 4 2014. http://www.thestreet.com/story/12940053/1/delta-airlines-shares-rise-on-strong-october-traffic-report.html?puc=yahoo&cm_ven=YAHOO

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12. Crum, Rex. "Cisco Systems Shares Rise as Results Top Forecasts." via *MarketWatch* (2014, November). Retrieved November 12 2014. <http://www.marketwatch.com/story/cisco-systems-shares-rise-as-results-top-forecasts-2014-11-12>
13. "Kelly A. Kramer Executive Bio." via *Cisco's The Network*. (2014, November). Retrieved November 13 2014. <http://tinyurl.com/CiscoKellyAKramer>
14. Rolph, Duncan. "Ebola & The Stock Market: Repercussions of Panic" via *Forbes* (2014, October). Retrieved January 10 2015. <http://www.forbes.com/sites/duncanrolph/2014/10/28/ebola-the-stock-market-repercussions-of-panic>
15. Rosenberg, Alex. . "The Surprising Impact of Plunging Oil Prices." via *CNBC* (2014, October). Retrieved January 10 2015. <http://www.cnbc.com/id/102054596#>
16. Fraser, Chad. . "4 Christmas Stocks That Shine During the Holiday Season." via *Investing Daily* (2013, December). Retrieved January 10 2015. <http://www.investingdaily.com/19086/4-christmas-stocks-that-shine-during-the-holiday-season/>