## Stock Market Simulation

## An Interactive Qualifying Project Report:

Submitted to the faculty of the

Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science
by


Date:

August 12th, 2007

Approved:

Professor Dalin Tang, Advisor

## Table of Contents

1 Introduction
1.1 Group Objective ..... 5
1.2 History of Stock Market ..... 5
1.3 DOW, S\&P500, NYSE, and NASDAQ ..... 8
1.4 Modes of investment ..... 9
2 Penny Stock Trading
2.1 Introduction ..... 11
2.2 Strategies and Goals ..... 11
2.3 Stocks Chosen ..... 12
2.4 Results ..... 16
2.5 Conclusion of Penny Stock Trading ..... 39
3 Short Term Trading
3.1 Goals of Simulation ..... 47
3.2 Short Term Trading Background ..... 47
3.3 Companies selected ..... 48
3.4 Investments ..... 50
3.5 Results ..... 70
4 Using Zack's Numbers
4.1 Goals of Simulation ..... 78
4.2 What are Zack's Number's? ..... 78
4.3 Stocks Chosen ..... 79
4.4 Trades ..... 84
4.5 Conclusion and Results ..... 90
5 Long Term Trading
5.1 Goals of Simulation ..... 97
5.2 Pros and Cons of Long Term Trading ..... 97
5.3 Long Term Trading ..... 98
5.4 Stocks Chosen ..... 99
5.5 Trades ..... 105
5.6 Results ..... 106
5.7 Conclusion ..... 114
6 Conclusions
6.1 Did We Meet Our Goals ..... 122
6.2 Comparison of Methods ..... 122
References ..... 124

## Acknowledgements

We would like to thank Professor Dalin Tang, Worcester Polytechnic Institute and all of our family members and friends for their support throughout the duration of this project. The final results should provide us with an insight for our future investment strategies.


#### Abstract

A seven-week stock market simulation was performed to learn general knowledge and trading experience about investment in the stock market. Four different trading methods were used with the final goal of determining the method which provided the highest return.


## 1. Introduction

### 1.1 Group Objective

The goal of this project is to gain a fundamental understanding of the stock market and basic techniques for trading. We will be picking 4 companies each to follow in our 7 week period. We will be taking our individual companies and each of the group members will apply their own methods of trading to them. At the end of the 7 week term we will compare the results of our stocks based on profits gained and lost during the simulation period. From this we will be able to compare and contrast our approaches to trading and use this information make a more educated decision when trading in the real stock market.

### 1.2 History of Stock Market

In the 1700s groups of brokers in Philadelphia, Pennsylvania, and New York City began to meet in parks and coffeehouses to buy and sell securities. In open auctions, traders called out names of companies and numbers of shares available. Shares went to the highest bidders. In 1800 the Philadelphia Board of Brokers drew up regulations and a constitution and set up central offices where trading could take place. The organization they created, the Philadelphia Stock Exchange, is the oldest exchange in the United States. In 1817 brokers in New York formed the New York Stock and Exchange Board (renamed the New York Stock Exchange in 1863). As the United States grew and prospered during the 19 th century, many more companies began to issue stocks and bonds. More people began to invest, and dozens of exchanges were formed across the country. Some of these are still in existence, but many others were short-lived. For
example, the California gold rush of 1849 gave birth to a number of small exchanges where the public could buy shares in the new mining companies. As the gold rush subsided, these companies went out of business and the exchanges closed.

During the 1920s millions of Americans began to purchase stocks for the first time. Stock prices rose steadily as inflated market demand outpaced increases in the value of the real assets of these businesses as well as their profits. Investors eventually realized that a large imbalance existed between stock prices and the real assets available to back them up, including profits, and decided to sell. On October 29, 1929, great numbers of people tried to sell their stocks all at once. Prices tumbled so drastically on the NYSE and other exchanges that the event became known as the crash of 1929. Millions of investors lost their savings in the crash, and many found themselves deeply in debt because they could not repay the money they had borrowed to buy stocks. During the years immediately following the crash, most investors refused to put any more money in stocks. The lack of investment funds contributed to the Great Depression of the 1930s, an economic crisis that left one of every four American workers unemployed and resulted in widespread poverty.

In the 1980s and 1990s stock exchanges achieved new levels of market efficiency through their increased use of fast and inexpensive computers. Computer networks allowed exchanges to connect to each other, both within countries and internationally. Electronic exchanges fostered the growth of an open, global securities market. In 1987 the stock market experienced a brief, but major crash, marked by a more than 20 percent decline; over one day's trading, in the Standard \& Poor's index of stock prices. Markets in other countries have experienced periods of severe decline as well. Economists linked
the 1987 U.S. crash to the use by traders of new markets for low-margin stock index futures.

The period from 1990 to early 2000 saw a significant rise in stock prices. The growth resulted in the longest period of average increases in stock prices in the history of the United States. The market value of the outstanding shares of domestically issued stock rose from about $\$ 3.5$ trillion to approximately $\$ 20$ trillion. But then stock prices began to decline. By the middle of 2002 the market value of the outstanding shares of domestically issued stock stood at about $\$ 13.3$ trillion. The earlier period of rising stock prices, from 1990 to the first part of 2000, was known as a bull market. The bull market was linked to the strong national economy. A continued expansion of production and employment made investors optimistic about business profits and increased the demand for securities. This growth in demand was especially true for technology companies. In the latter half of the bull market the dot.com phenomenon developed. Small startup companies specializing in sales on the Internet began to issue stock. The prices of these stocks rose rapidly with strong demand, based on the belief that this new way of doing business would generate enormous profits.

The end of the bull market in 2000 and the beginning of a bear market (period of declining stock prices) was marked by several factors. One was the end of the national economic expansion with a decline in production and a rise in unemployment. Another was the end of the dot.com phenomenon when investors recognized that it was going to be much more difficult than originally forecast for these companies to become profitable. In 2001 the September 11 attacks by terrorists on the World Trade Center and the Pentagon also had predictable negative consequences for securities markets. ${ }^{7}$

### 1.3 DOW, S\&P500, NY and NASDAQ comparison

At a first glance the NYSE and NASDAQ markets may be very hard to find a difference between them because they seem very similar. The NYSE is defined as an actual physical place unlike NASDAQ. NYSE uses an auction market floor located in New York City on Wall Street, which uses floor traders to make most of their transactions. Every stock that is listed in the NYSE has a special holder which facilitates and oversees every trade made for that particular stock. In order to buy a stock on the NYSE you have to tell your broker which will then call the broker on the floor, or enter it into the DOT system. Like I said with NASDAQ though, there is no physical placed that it exists unlike the NYSE. NASDAQ uses an over the counter market method and relies on broker dealer firms in order to maintain and trade its stocks. NASDAQ is not an auction market like the NYSE but rather a communications network between thousands of computers. Broker dealer firms, or market makers, places there names on a list of buyers and sellers and then NASDAQ proceeds to distribute this information in a split second to thousands of computers. At anytime if you wish to buy or sell your stocks on NASDAQ all you have to do is call your market maker, example would be Microsoft which has several, and they will enter the information of your trade or you can enter your order in a NASDAQ online execution system. In conclusion, NYSE is a physical place where you trade stocks on a market floor with floor brokers, NADAQ on the other hand is an online communications system that uses brokers and market makers in order to sell and trade stocks. ${ }^{5,4}$

The Dow Jones Industrial Average is traditionally the most watched index however the most technical analysts use the S\&P 500 to examine the US economy. The major difference between the Dow and the S\&P 500 indexes is how they're calculated. The Dow is price-weighted while the S\&P 500 is value-weighted. The S\&P 500 index is calculated by taking the number of shares in circulation of each company and multiplying them by the share value and the sum is the index. In the Dow average only one share from each company is used and the sum is divided by the number of companies. The problem with the Dow index is stocks with higher share prices are given far more weight than cheaper stocks. An example of this problem, General Electric and Microsoft, some of the most valued companies in the index, have a small weighted value (GE stands around \$35 and MSFT at \$29, against Johnson \& Johnson at \$65). Another problem with a price-weighted index is that each dollar change of a component affects the average by the same amount. One can have a situation where an equivalent percentage change in the most expensive stock, say IBM, can be worth around five times the lowest priced constituent, such as Intel.

### 1.4 Modes of investment

There are two main ways to invest in the stock market. An investor can choose to place money through the Internet at a website such as etrade.com, or they can physically go to a stockbroker. Each method has its strengths and weaknesses. Internet investing has a few pros and cons, however the investor interprets them. All trading is left up to the user, there is no advice given, and all trades are done at the investor's discretion. A commission fee is automatically applied when a trade is made, usually about 10 dollars,
although this amount can vary based on a number of factors such as the type of account you have with the internet firm, how often you make trades, and how much money, if any you pay as a subscription fee.

Trading with a broker is slightly different. With a broker you have an expert with experience who can guide you with your trades and assist you when purchasing your stocks. The broker is someone who you can count on to give you an unbiased honest opinion, something the Internet option lacks. However, a brokerage firm will charge you based on a percentage of your earnings instead of a commission fee per trade. That means if you make more money, you owe the broker more, unlike the Internet where regardless of how much you make, you only have to pay the commission fee. These descriptions obviously have their exceptions, but in general this is the way brokerage firms work. ${ }^{7,5}$

## 2. Penny Stock Trading

### 2.1 Introduction

Penny Stocks are traditionally stocks with share prices around or under $\$ 5.00$. The basic idea around penny stocks is that they don't cost much and therefore you are able to buy more penny stock shares than you would be able to with big corporations like Microsoft where share prices can break $\$ 100$. Profit is made by change in the share price from your buy price and sell price multiplied by the number of stocks you own. Using the formula: Delta*Shares=Proceeds, there are two ways to maximize your proceeds, either by maximizing the delta of the share price or by maximizing the number of shares you are invested in. Penny stocks take the latter maximizing strategy.

### 2.2 Strategies and Goals

Since large proceeds may be attained even through small price changes, a close watch is essential for the Penny Stock trading strategy. It is necessary to attempt to catch the stock at a local minimum when buying and to sell at local maximums. Since it is difficult to predict changes simply by looking at a graph, company research will aid me in predicting when a chosen stock will rise or fall in share price.

Another thing that will help in maximizing my profits is making sure that I pick stocks that tend to fluctuate with greater amplitude than other stocks. One industry that is saturated with penny stocks and seems to fluctuate somewhat rapidly is the mining industry. New mineral deposit discoveries result in a quick and large increase in share price which are great for selling while inevitable droughts allow for a time to buy at a
safe price near rock bottom. Luckily google reports these discoveries as soon as they are released to the public which will help me exploit this strategy. ${ }^{7}$

### 2.3 Stocks Chosen

## Snap-On Incorporated (Public, NYSE, SNA)

Snap-on Incorporated (Snap-on) is a manufacturer and marketer of tools, diagnostics and equipment solutions for professional users. The Company's product lines include hand and power tools, tool storage, diagnostics software, information and management systems, shop equipment and other solutions for vehicle manufacturers, dealerships and repair centers, as well as customers in industry, government, agriculture and construction. Snap-on also derives income from various financing programs to facilitate the sales of its products. The Company operates in four segments: the Snap-on Tools Group (formerly the Snap-on Dealer Group), the Commercial \& Industrial Group, the Diagnostics \& Information Group and Financial Services. Snap-on markets its products and brands through multiple distribution sales channels in more than 125 countries. On November 28, 2006, Snap-on acquired the ProQuest Business Solutions business and certain net assets from ProQuest Company. ${ }^{4}$

## MoSys Inc. (Public, NASDAQ, MOSY)

MoSys Inc. designs, develops and markets semiconductor memory products and technologies used by the semiconductor industry and electronic product manufacturers. The company has developed a semiconductor memory technology, called 1T-SRAM that
offers a combination of consumption and performance. It licenses this technology to companies that incorporate, or embed, memory on complex integrated circuits, such as system-on-chip (SoCs). The Company offers its technology on a worldwide basis to semiconductor companies, electronic product manufacturers, foundries, intellectual property companies and design companies through product development, technology licensing and joint marketing relationships. ${ }^{5}$

## Duke Energy Corporation (Public, NYSE, DUK)

Duke Energy Corporation (Duke Energy) is an energy company located in the Americas with a real estate subsidiary. Duke Energy operates in six business units: U.S. Franchised Electric and Gas, Natural Gas Transmission, Field Services, Commercial Power, International Energy and Duke Energy's 50\% interest in the Crescent joint venture (Crescent). In May 2005, Duke Energy and Cinergy announced they entered into a definitive merger agreement. On May 4, 2006, it sold Duke Energy North America's (DENA) fleet of wholesale power generation assets outside the Midwest to a subsidiary of LS Power Equity Partners (LS Power). In August 2006, Vectren Corporation purchased Duke Energy's interest in Miller Pipeline Corporation. In April 2006, it merged with Cinergy. In October 2006, Fortis N.V. completed the acquisition of Cinergy Marketing \& Trading, LP, a limited partnership, and Cinergy Canada, Inc, from Duke Energy. In January 2007, Spectra Energy Corp. completed its spin-off from Duke Energy.

## China Petroleum \& Chemical Corp (Public, NYSE, SNP)

China Petroleum \& Chemical Corporation (Sinopec Corp.) is an energy and chemical company, which through its subsidiaries, engages in integrated oil and gas, and chemical operations in the People's Republic of China. Oil and gas operations consist of exploring for, developing and producing crude oil and natural gas; transporting crude oil, natural gas and products by pipelines; refining crude oil into finished petroleum products, and marketing crude oil, natural gas and refined petroleum products. Chemical operations include the manufacture and marketing of a range of chemicals for industrial uses. Sinopec Corp.'s operating segments are exploration and production, refining, marketing and distribution, chemicals, and corporate and others. During the year ended December 31, 2006, it produced and processed approximately 40 and 146.3 million tons, respectively, of crude oil, distributed 112 million tons of refined oil products and sold approximately 29.56 million tons of chemical products. ${ }^{4}$

## Entrée Gold Inc. (Public, AMEX)

Entree Gold Inc. (EntrEe) is an exploration-stage resource company engaged in exploring mineral resource properties. Its mineral properties consist of five mineral exploration licenses. All of these mineral exploration licenses have been registered in the name of its Mongolian subsidiary EntrEe LLC. EntrEe LLC is the owner of five mineral exploration licenses (Javhlant, Shivee Tolgoi and Togoot comprising the Lookout Hill property, and the Manlai and Khatsavch properties) permitting mineral exploration on five parcels of land located in Mongolia. Three of these parcels, Javhlant, Shivee Tolgoi
and Togoot, are contiguous. The Company entered into an arm's-length equity participation and earn-in agreement dated October 15, 2004, with Ivanhoe Mines Ltd. (Ivanhoe), which owns a mineral exploration property known as Oyu Tolgoi, or Turquoise Hill, which is located adjacent to its Lookout Hill property. ${ }^{4}$

## Crystallex International Corp. (Public, AMEX)

Crystallex International Corporation (Crystallex) is engaged in the production of gold and related activities, including exploration, development, mining and processing in Venezuela. The Company's principal asset is its interest in the Las Cristinas Project located in Bolivar State, Venezuela. Crystallex's other assets include the Tomi operations, the Lo Increible properties, which include the La Victoria deposit, the Revemin mill and the Albino project, all of which are located in Bolivar State, Venezuela. For the year ended December 31, 2006, the Company had gold production of 47,000 ounces of gold being produced from the Tomi open-pit and underground mines, the La Victoria open-pit mine and ore purchased from third parties.

## Miramar Mining Corp. (USA) (Public, AMEX)

Miramar Mining Corporation is engaged in the exploration and development of gold bearing mineral properties. The Company's business is focused in northern Canada in Nunavut and the Northwest Territories. It has two wholly owned subsidiaries: Miramar Hope Bay Ltd. (MHBL) and Miramar Con Mine Ltd. (Con Ltd). MHBL owns the Hope Bay gold exploration project in Nunavut, Canada. The Hope Bay Project is an 80 kilometers long greenstone belt, on which three deposits have been discovered: Doris,

Boston and Madrid. Con Ltd. owns the Con Mine, a former producing underground gold mine located near Yellowknife, Northwest Territories, Canada. ${ }^{5}$

## Northgate Minerals Corp. (USA) (Public, AMEX)

Northgate Minerals Corporation (Northgate) is a gold and copper concentrate producer. Northgate owns and acquires properties, explores for precious and base metals. Northgate is in the business of mining and exploring for gold and copper, with a focus on opportunities in North and South America. The Company's principal asset is its $100 \%$ interest in the Kemess South open pit mine and its associated infrastructure and mineral rights (Kemess South) located in north-central British Columbia. The mineral rights cover an area of 34,735 hectares and are held as four Mining Leases covering the Kemess South (one lease) and Kemess North (three leases) deposits, 64 mineral claims surround the Mining Leases. One mineral claim (NOR 1) is held under an option agreement. In addition, Northgate focuses its exploration activities within its land position surrounding the Young-Davidson property in Ontario. ${ }^{5}$

### 2.4 Results

## Week 2

$\$ 50,000$ was distributed amongst the four stocks I choose for penny trading on Friday the $1^{\text {st }}$ of June, however because I was not allowed to simply invest $\$ 12.5 \mathrm{k}$ in each company, my grand total came out to $\$ 49,400.95$. This is not a problem because in the end it will be the total percentage gain that we compare rather than the total money gained. I tried to pick companies that have a frequent and dramatic magnitude of flux to
optimize the penny trading strategy, so I picked two companies with the help of PennyStocks.com, as well as two energy companies. MoSys was bought at an extreme local minimum as was Duke, this will most likely lead to a huge gain in the near future. Snap-on and China Petroleum are both on a steady rise but have both also had recent huge gains.

## Trading History

|  | Buy/ |  |  |  |  | Profit/ |  | Total |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Date | Syml | Sell | Price | Shares | Proceeds | Loss | Total Cash | Asset |
| $06 / 05 / 07$ | SNA | Buy | 54.22 | 227 | 12307.94 | -10.00 | $\$ 37,692.06$ | $\$ 50,000$ |
| $06 / 05 / 07$ | MOSY | Buy | 8.01 | 1560 | 12495.6 | -10.00 | $\$ 25,196.46$ | $\$ 50,000$ |
| $06 / 05 / 07$ | DUK | Buy | 19.41 | 625 | 12131.25 | -10.00 | $\$ 13,065.21$ | $\$ 50,000$ |
| $06 / 05 / 07$ | SNP | Buy | 110.32 | 113 | 12466.16 | -10.00 | $\$ 599.05$ | $\$ 50,000$ |

Table 2.4.1, Initial Trades

## Week 3

This week was pretty rough for the stock market; most of my investments reached a local minimum share price. Luckily, early in the week they had also reached a local maximum share price where I sold a lot of MOSY and SNP while I bought almost 1000 shares of DUK since it was at a pretty extreme low.

Unfortunately, the stocks that Pennystocks.com recommended me are not traditional penny stocks. A traditional penny stock share is under $\$ 5.00$ while the stocks I was recommended were all between $\$ 8$ and $\$ 112$. So in order to give the penny stock strategy justice, I had to pick 4 different traditional penny stocks. These companies are primarily some sort of mineral mining companies.

## EGI



Figure 2.4.1, EGI at the close of week three

## NXG



Figure 2.4.2, NXG at the close of week three

KRY


Figure 2.4.3, KRY at the close of week three

## MNG



Figure 2.4.4, MNG at the close of week three

I will not completely discard my initial investments but rather I will use them as a control to the penny stock trading strategy. At the end of week 3 , here is the overall
summary. My initial investments came to a total of $\$ 49,859.56$ and are currently at $\$ 48,780.01$ for a net loss of $\$ 1079.55$ or $2.17 \%$. My new investment total is $\$ 49,982.55$. Once again when we are comparing net gains at the end of the experiment, we will be using percentages to account for the initial investment differences.

## Trading History

| Date | Symbol | Buy/ <br> Sell | Price | Share | Cost/ <br> Proceeds | Profit/ <br> Loss | Total Cash | Total Asset |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/11/2007 | KRY | Buy | \$4.12 | 3034 | \$12,500.08 | -\$10.00 | \$37,489.90 | \$49,990.00 |
| 6/11/2007 | NXG | Buy | \$3.06 | 4085 | \$12,500.10 | -\$10.00 | \$24,979.80 | \$49,980.00 |
| 6/11/2007 | EGI | Buy | 2.06 | 6060 | \$12,483.60 | -\$10.00 | \$12,486.20 | \$49,970.00 |
| 6/11/2007 | MNG | Buy | 4.19 | 2983 | \$12,498.77 | -\$10.00 | -\$32.57 | \$49,960.00 |

Table 2.4.2, Trades of week three

## Week 4

This week was a really good one for my stocks; they did so well that I ended up selling about $\$ 32,000$ in my newly acquired stocks. In all this trade netted a $\$ 4,000$ gain, almost a $10 \%$ return for the first week. I sold shares of all of these new stocks except for KRY but it is also currently on the rise and I will probably sell some of it next week. There were some dramatic daily gains that you will see in the following charts.

## NXG



Figure 2.4.5, NXG at the close of week four
Note the massive jump before the market closed on $6 / 15$, nearly a $4 \%$ gain.

## MNG



Figure 2.4.6, MNG at the close of week fours

## EGI



Figure 2.4.7, EGI at the close of week four

If you look at the long-term chart EGI is close to an annual high.


Figure 2.4.8, KRY at the close of week four

KRY had a big jump this week on 6/14

## Trading History

| Date | Symbol | Buy/ <br> Sell | Price | Shares | Proceeds | Profit/ <br> Loss | Total <br> Cash | Total <br> Asset |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6 / 11 / 2007$ | KRY | Buy | $\$ 4.12$ | 3034 | $\$ 12,500.08$ | $-\$ 10.00$ | $\$ 37,489.90$ | $\$ 49,990.00$ |
| $6 / 11 / 2007$ | NXG | Buy | $\$ 3.06$ | 4085 | $\$ 12,500.10$ | $-\$ 10.00$ | $\$ 24,979.80$ | $\$ 49,980.00$ |
| $6 / 11 / 2007$ | EGI | Buy | 2.06 | 6060 | $\$ 12,483.60$ | $-\$ 10.00$ | $\$ 12,486.20$ | $\$ 49,970.00$ |
| $6 / 11 / 2007$ | MNG | Buy | 4.19 | 2983 | $\$ 12,498.77$ | $-\$ 10.00$ | $-\$ 32.57$ | $\$ 49,960.00$ |
| $\mathbf{6 / 1 3 / 2 0 0 7}$ | EGI | Sell | $\mathbf{\$ 2 . 1 7}$ | $\mathbf{5 0 0 0}$ | $\mathbf{\$ 1 0 , 8 5 0 . 0 0}$ | $\$ 540.00$ | $\mathbf{\$ 1 0 , 8 0 7 . 4 3}$ | $\mathbf{\$ 5 0 , 5 0 0 . 0 0}$ |
| $\mathbf{6 / 1 5 / 2 0 0 7}$ | NXG | Sell | $\mathbf{\$ 3 . 1 5}$ | $\mathbf{3 0 0 0}$ | $\mathbf{\$ 9 , 4 5 0 . 0 0}$ | $\mathbf{\$ 2 6 0 . 0 0}$ | $\mathbf{\$ 2 0 , 2 4 7 . 4 3}$ | $\mathbf{\$ 5 0 , 7 6 0 . 0 0}$ |

Table 2.4.3, Trades of week four

## Week 5

This week was quite uneventful, NXG dropped down to my original buy price of $\$ 3.06$ so I decided to buy back the 3000 shares I sold the previous week at $\$ 3.15$. Unfortunately NXG is still dropping and closed at $\$ 3.04$ at the end of the week.

NXG


Figure 2.4.9, NXG at the close of week five

KRY has been slowly depreciating since its spike last week and after careful consideration I finally decided to sell at $\$ 4.41$, a $6.5 \%$ total gain from my buy price of $\$ 4.12$.

## KRY



Figure 2.4.10, KRY at the close of week five

I'm still waiting for EGI to drop a bit more before I buy back some of the 5000 shares I sold last week at $\$ 2.17$, I could've made a lot more if I had only held out for a little longer before I sold them because EGI is my cheapest and most plentiful stock which causes even the slightest increase or decrease in price to most greatly affect my assets. I originally bought 6060 shares of EGI which meant any change at all in share price would be multiplied by 6000 in my total assets. For this reason I must be most careful with this company because it has the greatest potential to make or break my net outcome.

## EGI



Figure 2.4.11, KRY at the close of week five

Last week I sold 2500 of my 2983 shares of MNG at $\$ 4.37$. MNG closed at $\$ 4.39$ this week so I will have to wait a little longer before I buy any shares back but hopefully the share value will continue to decrease into next week, if so I plan to buy around 1000 at the mean between my original buy price of $\$ 4.19$ and my latest sell price of $\$ 4.37$ so around $\$ 4.26$. I will have to keep a close eye on MNG so I can try to buy close to an inflection point instead of halfway down a depreciative slope.

## MNG



Figure 2.4.12, MNG at the close of week five

## Trading History

| Date | Symbol | Buy/ <br> Sell | Price | Share | Proceeds | Profit/ <br> Loss | Total Cash | Total Asset |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6 / 11 / 2007$ | KRY | Buy | $\$ 4.12$ | 3034 | $\$ 12,500.08$ | $-\$ 10.00$ | $\$ 37,489.90$ | $\$ 49,990.00$ |
| $6 / 11 / 2007$ | NXG | Buy | $\$ 3.06$ | 4085 | $\$ 12,500.10$ | $-\$ 10.00$ | $\$ 24,979.80$ | $\$ 49,980.00$ |
| $6 / 11 / 2007$ | EGI | Buy | 2.06 | 6060 | $\$ 12,483.60$ | $-\$ 10.00$ | $\$ 12,486.20$ | $\$ 49,970.00$ |
| $6 / 11 / 2007$ | MNG | Buy | 4.19 | 2983 | $\$ 12,498.77$ | $-\$ 10.00$ | $-\$ 32.57$ | $\$ 49,960.00$ |
| $6 / 13 / 2007$ | EGI | Sell | $\$ 2.17$ | 5000 | $\$ 10,850.00$ | $\$ 540.00$ | $\$ 10,807.43$ | $\$ 50,500.00$ |
| $6 / 15 / 2007$ | NXG | Sell | $\$ 3.15$ | 3000 | $\$ 9,450.00$ | $\$ 260.00$ | $\$ 20,247.43$ | $\$ 50,760.00$ |
| $\mathbf{6 / 2 0 / 2 0 0 7}$ | KRY | Sell | $\$ 4.41$ | $\mathbf{2 0 3 4}$ | $\mathbf{\$ 8 , 9 6 9 . 9 4}$ | $\$ 579.86$ | $\mathbf{\$ 2 9 , 2 0 7 . 3 7}$ | $\mathbf{\$ 5 1 , 3 3 9 . 8 6}$ |
| $\mathbf{6 / 2 0 / 2 0 0 7}$ | NXG | Buy | $\mathbf{\$ 3 . 0 6}$ | $\mathbf{3 0 0 0}$ | $\mathbf{\$ 9 , 1 8 7 . 2 0}$ | $\mathbf{- \$ 1 0 . 0 0}$ | $\mathbf{\$ 2 0 , 0 1 0 . 2 0}$ | $\mathbf{\$ 5 1 , 3 2 9 . 8 6}$ |

Table 2.4.4, Trades of week five

## Week 6

This week all of my stocks had a local minimum share price, some of them close to the lowest they've been over the duration of this simulation.

I sold the remainder of my shares in EGI when it reached a near peak share price of $\$ 2.45$, 39 cents over my original buy price of $\$ 2.06$ which resulted in a $\$ 413.40$ net profit. Luckily I didn't sell all of my shares two weeks ago, but on the other hand I mistakenly neglected the share price drop from $\$ 2.30$ to $\$ 2.15$ between the $26^{\text {th }}$ and the $27^{\text {th }}$ because I believed it was going to drop even further down to the same level as my original buy price.

## EGI



Figure 2.4.13, EGI at the close of week six

I was lucky enough to catch NXG at close to the lowest price it has been this entire simulation at $\$ 2.87$, a full 19 cents under my original buy price of $\$ 3.06$. Hopefully it will rise next week so I may sell again soon.

## NXG



Figure 2.4.14, NXG at the close of week six

I bought back about $2 / 3$ of my original investment proportion of KRY this week at $\$ 4.13$, one penny more than my original buy price. Hopefully it will be as active as it was last week and will at least raise past the $\$ 4.25$ mark.

## KRY



Figure 2.4.15, KRY at the close of week six

MNG rose from my original buy price of $\$ 4.19$ and has been sticking in the $\$ 4.20+$ range for the last couple weeks until this week when it dropped back down to $\$ 4.20$, I caught it on its way up to the closing price of $\$ 4.29$ at $\$ 4.28$. Once again hopefully it continues to rise and oscillates around $\$ 4.30-\$ 4.40$ like it has been recently.

## MNG



Figure 2.4.16, MNG at the close of week six

## Trading History

| Date | Symbol | Buy/ <br> Sell | Price | Share | Proceeds | Profit/ Loss | Total Cash | Total Asset |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/11/2007 | KRY | Buy | \$4.12 | 3034 | \$12,500.08 | -\$10.00 | \$37,489.90 | \$49,990.00 |
| 6/11/2007 | NXG | Buy | \$3.06 | 4085 | \$12,500.10 | -\$10.00 | \$24,979.80 | \$49,980.00 |
| 6/11/2007 | EGI | Buy | 2.06 | 6060 | \$12,483.60 | -\$10.00 | \$12,486.20 | \$49,970.00 |
| 6/11/2007 | MNG | Buy | 4.19 | 2983 | \$12,498.77 | -\$10.00 | -\$32.57 | \$49,960.00 |
| 6/13/2007 | EGI | Sell | \$2.17 | 5000 | \$10,850.00 | \$540.00 | \$10,807.43 | \$50,500.00 |
| 6/15/2007 | NXG | Sell | \$3.15 | 3000 | \$9,450.00 | \$260.00 | \$20,247.43 | \$50,760.00 |
| 6/20/2007 | KRY | Sell | \$4.41 | 2034 | \$8,969.94 | \$579.86 | \$29,207.37 | \$51,339.86 |
| 6/20/2007 | NXG | Buy | \$3.06 | 3000 | \$9,187.20 | -\$10.00 | \$20,010.20 | \$51,329.86 |
| 6/28/2007 | KRY | Buy | \$4.13 | 2179 | \$9,004.50 | -\$10.00 | \$10,995.67 | \$51,319.86 |
| 6/28/2007 | NXG | Buy | \$2.87 | 2000 | \$5,740.00 | -\$10.00 | \$5,245.67 | \$51,309.86 |
| 6/28/2007 | EGI | Sell | \$2.45 | 1060 | \$2,597.00 | \$403.40 | \$7,832.67 | \$51,713.26 |
| 6/28/2007 | MNG | Buy | \$4.28 | 1000 | \$4,280.00 | -\$10.00 | \$3,542.67 | \$51,703.26 |

Table 2.4.5, Trades of week six

## Week 7

All of my stocks rose towards the end of the week this week. Unfortunately I was not expecting this for some stocks so I was unable to buy and sell again before the end of the simulation.

EGI has been on the rise since last week and it continues to rise this week, my original buy price was $\$ 2.06$ and it closed on the $6^{\text {th }}$ at $\$ 3.25$, by far the biggest price gain of any investment I made during this simulation. ${ }^{4}$

## EGI



Figure 2.4.17, EGI at the close of week seven

NXG's share price increased as I had hoped to 3 cents above my original buy price of $\$ 3.06$ but 16 cents over my latest buy at $\$ 2.90$. I sold all 6,085 shares $7 / 6$.

NXG


Figure 2.4.18, NXG at the close of week seven

KRY went up 15 cents from my buy at $\$ 4.15$ where I sold my remaining 3,179 shares.

## KRY



Figure 2.4.19, KRY at the close of week seven

MNG rose 40 cents from my last buy price of $\$ 4.28$ when I bought 1,000 shares. I sold all 1483 remaining shares when the market closed this Friday 7/6.

## MNG



Figure 2.4.20, MNG at the close of week seven

## Trading History

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds | Profit/ Loss | Total Cash | Total Asset |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/11/2007 | KRY | Buy | \$4.12 | 3034 | \$12,500.08 | -\$10.00 | \$37,489.90 | \$49,990.00 |
| 6/11/2007 | NXG | Buy | \$3.06 | 4085 | \$12,500.10 | -\$10.00 | \$24,979.80 | \$49,980.00 |
| 6/11/2007 | EGI | Buy | 2.06 | 6060 | \$12,483.60 | -\$10.00 | \$12,486.20 | \$49,970.00 |
| 6/11/2007 | MNG | Buy | 4.19 | 2983 | \$12,498.77 | -\$10.00 | -\$32.57 | \$49,960.00 |
| 6/13/2007 | EGI | Sell | \$2.17 | 5000 | \$10,850.00 | \$540.00 | \$10,807.43 | \$50,500.00 |
| 6/15/2007 | NXG | Sell | \$3.15 | 3000 | \$9,450.00 | \$260.00 | \$20,247.43 | \$50,760.00 |
| 6/20/2007 | KRY | Sell | \$4.41 | 2034 | \$8,969.94 | \$579.86 | \$29,207.37 | \$51,339.86 |
| 6/20/2007 | NXG | Buy | \$3.06 | 3000 | \$9,187.20 | -\$10.00 | \$20,010.20 | \$51,329.86 |
| 6/28/2007 | KRY | Buy | \$4.13 | 2179 | \$9,004.50 | -\$10.00 | \$10,995.67 | \$51,319.86 |
| 6/28/2007 | NXG | Buy | \$2.87 | 2000 | \$5,740.00 | -\$10.00 | \$5,245.67 | \$51,309.86 |
| 6/28/2007 | EGI | Sell | \$2.45 | 1060 | \$2,597.00 | \$403.40 | \$7,832.67 | \$51,713.26 |
| 6/28/2007 | MNG | Buy | \$4.28 | 1000 | \$4,280.00 | -\$10.00 | \$3,542.67 | \$51,703.26 |
| 7/9/2007 | KRY | Sell | \$4.30 | 3179 | \$13,669.70 | \$540.43 | \$17,202.37 | \$52,243.70 |
| 7/9/2007 | NXG | Sell | \$3.09 | 6085 | \$18,802.65 | \$552.55 | \$35,995.02 | \$52,796.25 |
| 7/9/2007 | MNG | Sell | \$4.68 | 1483 | \$6,940.44 | \$626.67 | \$42,925.46 | \$53,422.92 |

Table 2.4.6, Trades of week seven

Week 8

I was under the impression that this simulation only lasted for the first seven weeks and then the remaining weeks would be spent polishing our final report. For that reason I made no trades this week and will replace my normal trade update report with a seven week evaluation report as well as new purchases for the next few weeks.

These graphs portray the progress of my chosen stocks over the past seven weeks.
Because I made no trades this week, there will be no weekly graphs for this week.

## MNG



Figure 2.4.21, MNG at the close of week eight

NXG


Figure 2.4.22, NXG at the close of week eight

## KRY



Figure 2.4.23, KRY at the close of week eight

7 Week Price History

|  |  | $7 \mathbf{W}$ <br> Symbol | Original Price | High |
| :--- | :--- | :--- | :--- | :--- |
| KRY | $\$ 4.12$ | $\$ 4.50$ | $\$ 3.85$ | $\$ 0.65$ |
| NXG | $\$ 3.06$ | $\$ 3.28$ | $\$ 2.86$ | $\$ 0.42$ |
| EGI | $\$ 2.06$ | $\$ 3.27$ | $\$ 2.06$ | $\$ 1.21$ |
| MNG | $\$ 4.19$ | $\$ 4.88$ | $\$ 4.12$ | $\$ 0.76$ |

Table 2.4.7, seven week price history

At the end of this seven week period here are some important numbers.
Original Investment: \$49,982.60
Current Assets: \$54,005.50
Net Gain: \$4,022.91 (8.05\%)

## Individual Trading Histories

| Symbol | Date | Buy/Sell | Shares | Price | Trade <br> VRY |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  | Profit/Loss |  |  |  | Net Gain/Loss

Table 2.4.8, individual trade history

## Week 9

This week actually contained the only loss I experienced over the course of this simulation. Although the loss was minimal (\$257.16) it is unfortunate that it had to be a loss at all. The reason for this loss is because I bought EGI while it was basically at an all time high because I was unaware that the simulation was a week longer than I had thought. Over the entire week EGI never went higher than my buy price of $\$ 3.15$ and in
the end I was forced to sell at $\$ 3.09$. Fortunately, all of my other investments did very well this last week and resulted in nearly $5 \%$ net gain each.

## Trading History

| Date | Symbol | Bell/ | Price | Share | Cost/ <br> Proceeds | Profit/ <br> Loss | Total Cash | Total Asset |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6 / 11 / 2007$ | KRY | Buy | $\$ 4.12$ | 3034 | $\$ 12,500.08$ | $-\$ 10.00$ | $\$ 37,489.90$ | $\$ 49,990.00$ |
| $6 / 11 / 2007$ | NXG | Buy | $\$ 3.06$ | 4085 | $\$ 12,500.10$ | $-\$ 10.00$ | $\$ 24,979.80$ | $\$ 49,980.00$ |
| $6 / 11 / 2007$ | EGI | Buy | 2.06 | 6060 | $\$ 12,483.60$ | $-\$ 10.00$ | $\$ 12,486.20$ | $\$ 49,970.00$ |
| $6 / 11 / 2007$ | MNG | Buy | 4.19 | 2983 | $\$ 12,498.77$ | $-\$ 10.00$ | $-\$ 32.57$ | $\$ 49,960.00$ |
| $6 / 13 / 2007$ | EGI | Sell | $\$ 2.17$ | 5000 | $\$ 10,850.00$ | $\$ 540.00$ | $\$ 10,807.43$ | $\$ 50,500.00$ |
| $6 / 15 / 2007$ | NXG | Sell | $\$ 3.15$ | 3000 | $\$ 9,450.00$ | $\$ 260.00$ | $\$ 20,247.43$ | $\$ 50,760.00$ |
| $6 / 15 / 2007$ | MNG | Sell | $\$ 4.37$ | 2500 | $\$ 10,925.00$ | $\$ 440.00$ | $\$ 31,162.43$ | $\$ 51,200.00$ |
| $6 / 20 / 2007$ | KRY | Sell | $\$ 4.41$ | 2034 | $\$ 8,969.94$ | $\$ 579.86$ | $\$ 40,122.37$ | $\$ 51,779.86$ |
| $6 / 20 / 2007$ | NXG | Buy | $\$ 3.06$ | 3000 | $\$ 9,187.20$ | $-\$ 10.00$ | $\$ 30,925.17$ | $\$ 51,769.86$ |
| $6 / 28 / 2007$ | KRY | Buy | $\$ 4.13$ | 2179 | $\$ 9,004.50$ | $-\$ 10.00$ | $\$ 21,910.67$ | $\$ 51,759.86$ |
| $6 / 28 / 2007$ | NXG | Buy | $\$ 2.87$ | 2000 | $\$ 5,740.00$ | $-\$ 10.00$ | $\$ 16,160.67$ | $\$ 51,749.86$ |
| $6 / 28 / 2007$ | EGI | Sell | $\$ 2.45$ | 1060 | $\$ 2,597.00$ | $\$ 403.40$ | $\$ 18,747.67$ | $\$ 52,153.26$ |
| $6 / 28 / 2007$ | MNG | Buy | $\$ 4.28$ | 1000 | $\$ 4,280.00$ | $-\$ 10.00$ | $\$ 14,457.67$ | $\$ 52,143.26$ |
| $7 / 9 / 2007$ | KRY | Sell | $\$ 4.30$ | 3179 | $\$ 13,669.70$ | $\$ 540.43$ | $\$ 28,117.37$ | $\$ 52,683.69$ |
| $7 / 9 / 2007$ | NXG | Sell | $\$ 3.09$ | 6085 | $\$ 18,802.65$ | $\$ 552.55$ | $\$ 46,910.02$ | $\$ 53,236.24$ |
| $7 / 9 / 2007$ | MNG | Sell | $\$ 4.68$ | 1483 | $\$ 6,940.44$ | $\$ 626.67$ | $\$ 53,840.46$ | $\$ 53,862.91$ |
| $7 / 17 / 2007$ | KRY | Buy | $\$ 3.98$ | 3392 | $\$ 13,500.16$ | $-\$ 10.00$ | $\$ 40,330.30$ | $\$ 53,852.91$ |
| $7 / 17 / 2007$ | NXG | Buy | $\$ 3.22$ | 4206 | $\$ 13,543.32$ | $-\$ 10.00$ | $\$ 26,776.98$ | $\$ 53,842.91$ |
| $7 / 17 / 2007$ | EGI | Buy | $\$ 3.15$ | 4286 | $\$ 13,500.90$ | $-\$ 10.00$ | $\$ 13,266.08$ | $\$ 53,832.91$ |
| $7 / 17 / 2007$ | MNG | Buy | $\$ 4.79$ | 2792 | $\$ 13,373.70$ | $-\$ 10.00$ | $-\$ 117.62$ | $\$ 53,822.91$ |
| $7 / 18 / 2007$ | MNG | Sell | $\$ 4.98$ | 2500 | $\$ 12,450.00$ | $\$ 455.00$ | $\$ 12,322.38$ | $\$ 54,277.91$ |
| $7 / 19 / 2007$ | KRY | Sell | $\$ 4.19$ | 2000 | $\$ 8,380.00$ | $\$ 410.00$ | $\$ 20,692.38$ | $\$ 54,687.91$ |
| $7 / 19 / 2007$ | NXG | Sell | $\$ 3.33$ | 1000 | $\$ 3,330.00$ | $\$ 100.00$ | $\$ 24,012.38$ | $\$ 54,787.91$ |
| $7 / 21 / 2007$ | KRY | Sell | $\$ 4.06$ | 1392 | $\$ 5,652.00$ | $\$ 101.36$ | $\$ 29,654.38$ | $\$ 54,889.27$ |
| $7 / 21 / 2007$ | NXG | Sell | $\$ 3.38$ | 3206 | $\$ 10,836.28$ | $\$ 502.96$ | $\$ 40,480.66$ | $\$ 55,392.23$ |
| $7 / 21 / 2007$ | EGI | Sell | $\$ 3.09$ | 4286 | $\$ 13,243.74$ | $\$ 267.16$ | $\$ 53,724.40$ | $\$ 55,125.07$ |
| $7 / 21 / 2007$ | MNG | Sell | $\$ 5.04$ | 292 | $\$ 1,471.68$ | $\$ 63.00$ | $\$ 55,186.08$ | $\$ 55,186.08$ |

Table 2.4.9, Trades of the simulation
Original Investment: \$49,982.60
Current Assets: \$55,186.08
Net Gain: \$5,203.48

Week 9 resulted in a $2.89 \%$ net asset increase even with my first loss in this simulation.

## Trading History

| $\begin{aligned} & \text { Symbol } \\ & \text { KRY } \end{aligned}$ | Date | Buy/Sell | Shares | Price | Trade Value | Profit/Loss | Net <br> Gain/Loss |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  | 6/11/2007 | Buy | 3034 | \$4.12 | \$12,500.08 |  |  |
|  | 6/20/2007 | Sell | 2034 | \$4.41 | \$8,969.94 | \$569.86 | \$569.86 |
|  | 6/28/2007 | Buy | 2179 | \$4.13 | \$9,004.50 |  |  |
|  | 7/9/2007 | Sell | 3179 | \$4.30 | \$13,669.70 | \$510.43 | \$1,100.29 |
|  | 7/17/2007 | Buy | 3392 | \$3.98 | \$13,500.16 |  |  |
|  | 7/19/2007 | Sell | 2000 | \$4.19 | \$8,380 | \$400.00 | \$1,500.29 |
|  | 7/21/2007 | Sell | 1392 | \$4.06 | \$5,652 | \$91.36 | \$1,591.65 |
| NXG |  |  |  |  |  |  |  |
|  | 6/11/2007 | Buy | 4085 | \$3.06 | \$12,500.10 |  |  |
|  | 6/15/2007 | Sell | 3000 | \$3.15 | \$9,450.00 | \$250.00 | \$250 |
|  | 6/20/2007 | Buy | 3000 | \$3.06 | \$9,187.20 |  |  |
|  | 6/28/2007 | Buy | 2000 | \$2.87 | \$5,740.00 |  |  |
|  | 7/9/2007 | Sell | 6085 | \$3.09 | \$18,802.65 | \$542.55 | \$792.55 |
|  | 7/17/2007 | Buy | 4206 | \$3.22 | \$13,543.32 |  |  |
|  | 7/19/2007 | Sell | 1000 | \$3.33 | \$3,330.00 | \$90.00 | \$882.55 |
|  | 7/21/2007 | Sell | 3206 | \$3.38 | \$10,836.28 | \$492.96 | \$1,375.51 |
| EGI |  |  |  |  |  |  |  |
|  | 6/11/2007 | Buy | 6060 | \$2.06 | \$12,483.60 |  |  |
|  | 6/13/2007 | Sell | 5000 | \$2.17 | \$10,850.00 | \$530.00 | \$530.00 |
|  | 6/28/2007 | Sell | 1060 | \$2.45 | \$2,597.00 | \$393.40 | \$923.40 |
|  | 7/17/2007 | Buy | 4286 | \$3.15 | \$13,500.90 |  |  |
|  | 7/21/2007 | Sell | 4286 | \$3.09 | \$13,243.74 | (\$277.16) | \$646.24 |
| MNG |  |  |  |  |  |  |  |
|  | 6/11/2007 | Buy | 2983 | \$4.19 | \$12,498.77 |  |  |
|  | 6/15/2007 | Sell | 2500 | \$4.37 | \$10,925.00 | \$430.00 | \$430.00 |
|  | 6/28/2007 | Buy | 1000 | \$4.28 | \$4,280.00 |  |  |
|  | 7/9/2007 | Sell | 1483 | \$4.68 | \$6,940.44 | \$626.67 | \$1,046.67 |
|  | 7/17/2007 | Buy | 2792 | \$4.79 | \$13,373.70 |  |  |
|  | 7/18/2007 | Sell | 2500 | \$4.98 | \$12,450.00 | \$455.00 | \$1,501.67 |
|  | 7/21/2007 | Sell | 292 | \$5.04 | \$5,651.52 | \$53.00 | \$1,574.67 |

Table 2.4.10, Trades of the simulation

### 2.5 Conclusion

## KRY



Figure 2.5.1, KRY three-month performance history

In the end KRY made me the most money out of all of my investments at $\$ 1,591.65$. This is testimony to the advantage of penny stock trading because while KRY never had any dramatic price jumps or drops (at least that I was able to take advantage of), it shows that as long as you buy low and sell high you will still make money. KRY stuck between $\$ 3.85$ and $\$ 4.50$ and my most profitable trade was at the beginning where I bought at $\$ 4.12$ and sold at $\$ 4.41$ for a $\$ 570$ profit, my second most profitable trade over the course of this simulation. ${ }^{5}$


Figure 2.5.2, KRY Profit versus Time

NXG


Figure 2.5.3, NXG three-month performance history

NXG ended up in third place for total profit and was overall quite mediocre in comparison to my other investments. I made $\$ 1,375.51$ off of NXG with frequent trades although the profit was only large because of the number of shares I was holding while the price change was very minimal. I would say NXG best represents the penny stock
trading method for a couple reasons. Because of its cheap share prices I was able to buy a lot of shares of NXG, and I discussed earlier in 2.1 how that is ideal for penny stocks trading in that maximizing the number of shares you attempt to maximize your profit (or possible loss) without gambling as much on the price range. If you look at the trading history NXG had the least dramatic price changes but the sheer number of shares that I held accounted for my success in making the same magnitude of profit as my other investments.

## NXG Trading History

| NXG |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $6 / 11 / 2007$ | Buy | 4085 | $\$ 3.06$ | $\$ 12,500.10$ |  |  |
| $6 / 15 / 2007$ | Sell | 3000 | $\$ 3.15$ | $\$ 9,450.00$ | $\$ 250.00$ | $\$ 250$ |  |
| $6 / 20 / 2007$ | Buy | 3000 | $\$ 3.06$ | $\$ 9,187.20$ |  |  |  |
| $6 / 28 / 2007$ | Buy | 2000 | $\mathbf{\$ 2 . 8 7}$ | $\$ 5,740.00$ |  | $\$ 792.55$ |  |
| $7 / 9 / 2007$ | Sell | 6085 | $\$ 3.09$ | $\$ 18,802.65$ | $\$ 542.55$ |  |  |
| $7 / 17 / 2007$ | Buy | 4206 | $\$ 3.22$ | $\$ 13,543.32$ |  | $\$ 882.55$ |  |
| $7 / 19 / 2007$ | Sell | 1000 | $\$ 3.33$ | $\$ 3,330.00$ | $\$ 90.00$ | $\$ 1,375.51$ |  |

Table 2.5.1, NXG trading history


Figure 2.5.4, NXG Profit versus Time

## EGI



Figure 2.5.5, EGI three-month performance history

EGI was by far the most dramatic of all my investments but unfortunately made me the least money. If you look at Fig 2.5 .5 you will notice how at the beginning of the simulation it started out at $\$ 2.06$ and ended the simulation at $\$ 2.75$. On the ninth of July

EGI hit an all time high of $\$ 3.47$ making EGI's price range $\$ 1.41$, potential for massive profit considering how cheap it started out at. If I had only held on to the 6,060 shares I originally bought at $\$ 2.06$ I could have made a massive profit of $\$ 8,544.60$ in one trade. Unfortunately this is an ideal and would have not fit the penny stock trading strategy very well. In the end EGI made me $\$ 646.24$ after my only loss in a trade in this simulation where I bought 4,286 shares at $\$ 3.15$ and sold them all at $\$ 3.06$ for a loss of $\$ 277.16$. EGI also had the least amount of trades because of its rapid increase in share price.

## EGI Trading History

| EGI |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $6 / 11 / 2007$ | Buy | 6060 | $\$ 2.06$ | $\$ 12,483.60$ |  |
| $6 / 13 / 2007$ | Sell | 5000 | $\$ 2.17$ | $\$ 10,850.00$ | $\$ 530.00$ | $\$ 530.00$ |
| $6 / 28 / 2007$ | Sell | 1060 | $\$ 2.45$ | $\$ 2,597.00$ | $\$ 393.40$ | $\$ 923.40$ |
| $7 / 17 / 2007$ | Buy | 4286 | $\$ 3.15$ | $\$ 13,500.90$ |  |  |
| $7 / 21 / 2007$ | Sell | 4286 | $\$ 3.09$ | $\$ 13,243.74$ | $(\$ 277.16)$ | $\$ 646.24$ |

Table 2.5.2, EGI trading history


Figure 2.5.6, EGI Trading history

## MNG



Figure 2.5.6, MNG three-month performance history

MNG made me the second most money of my investments at $\$ 1,574.67$, and had the most profitable trade, selling 483 shares I bought at $\$ 4.19$ and 1000 shares I bought at $\$ 4.28$ for $\$ 4.68$ resulting in $\$ 626.67$ net profit. MNG was my most consistent profit
maker and you can see by Fig 2.5.6 that it also had the most consistent fluctuation, an essential trait of an ideal penny stock. ${ }^{7}$


Figure 2.5.7, MNG Profit versus Time

This is my overall profit vs. time graph and if you take a look back at the individual profit vs. time graphs you'll notice that week 5 was my most profitable week, including massive profits from every investment with the exception of EGI. The only thing that I would say really hindered my profits was EGI because it simply rose too rapidly and my "buy low sell high" strategy kept me from making more trades and therefore more profit.


Figure 2.5.8, Overall profit versus time

## 3. Short Term Trading

### 3.1 Goals of Simulation

My initial and personal goal for this stock market simulation is for me to learn the fundamentals of the stock market, and discover the best method to go about short term trading during the seven week period. In order to consider myself successful, I have set a standard for myself that I will need to make at least a 10 percent profit off my initial investment. Another goal I have set for myself is to find the preeminent and most profitable method to go about short term trading during the simulation. I believe I will be able to find a method that works for me and that will show a significant amount of profit within three to four weeks prior to the start of the simulation. With these goals in mind I plan to and believe that I will be successful, make a decent profit, and find the best method to go about short term trading.

### 3.2 Short Term Trading Background

After researching and learning what short term trading in the stock market really is, I believe I will be fairly successful using this method. Short term trading is very simple to understand and does not require an immense amount of knowledge about the stock market. Seeing as I never really paid attention or knew much about the stock market prior to this simulation I think this method is going to work very well for me. In short term trading all you have to do is buy shares of stock when you believe the stock is at its lowest point and then sell back the stock when you believe it's at its highest point. Like I said, this method is very easy to understand and use, and since it is all done in such
a short period of time there is very little room for you to have a great loss of income in any of your investments.

There are a few ways and methods to go about short term trading, which I plan to try out and test during the course of the simulation. The first method I plan on using is called swing trading which entails the process of buying any number of shares you can afford and then checking every few days to see if you want to sell them at that point. The next method I will try will be checking on a daily basis once a day for an entire week. The method that I believe will be the smartest and most successful is checking your stocks again everyday, but instead of only checking them once I will set aside about 2 to 3 time periods throughout the day in which I will see if I want to buy or trade my stocks. This would be a great opportunity and method to make a decent amount of money quickly if your job required you to sit at a computer all day to work. The last method of short term trading I will try will require me to set an hour out of any or even everyday of the week and continually trade my stocks during that hour on a minute to minute basis. I believe with short-term trading I will be decently successful since there is very little chance in losing money through this method. Short term trading seems to me to be the most profitable and smartest way to trade stock, without really having to know and understand how the stock market really works. ${ }^{7}$

### 3.3 Companies Selected

## Microsoft Corporation

Microsoft Corporation develops, manufactures, licenses and supports a range of software products for computing devices. The Company's software products include
operating systems for servers, personal computers and intelligent devices; server applications for distributed computing environments; information worker productivity applications; business solution applications; high-performance computing applications, and software development tools. It provides consulting and product support services, and trains and certifies computer system integrators and developers. It has seven segments: Client, Server and Tools, Information Worker, Microsoft Business Solutions, MSN, Mobile and Embedded Devices, and Home and Entertainment. ${ }^{4}$

## Northrop Grumman Corporation

Northrop Grumman Corporation (Northrop Grumman), along with its subsidiaries, provides products, services and solutions in information and services, aerospace, electronics and shipbuilding. As prime contractor, principal subcontractor, partner, or preferred supplier, the Company participates in many defense and non-defense technology programs in the United States and abroad. Northrop Grumman conducts most of its business with the United States Government, principally the Department of Defense (DoD). The Company is aligned into seven segments categorized into four primary businesses: Information \& Services, Aerospace, Electronics and Ships. ${ }^{5}$

## The Home Depot, Inc.

The Home Depot, Inc. is home improvement retailer. As of January 28, 2007, it operated 2,147 stores, most of which are The Home Depot stores. It operates in two segments, Retail and HD Supply. The Home Depot stores sell an assortment of building materials, home improvement and lawn and garden products and provide a number of
services. In addition to its retail stores, its business includes HD Supply, which distributes products and sells installation services primarily to business-to-business customers, including home builders, professional contractors, municipalities and maintenance professionals. ${ }^{5}$

## American Eagle Outfitters

American Eagle Outfitters, Inc. is a retailer that designs, markets and sells its own brand of clothing targeting 15 to 25 -year-olds in its United States and Canadian retail stores. The Company's collection includes standards, such as jeans and graphic T-shirts, as well as essentials, such as accessories, outerwear, footwear, basics and swimwear that are marketed under its American Eagle Outfitters, American Eagle and AE brand names. American Eagle Outfitters, Inc. also distributes merchandise via its e-commerce operation, ae.com, which offers additional sizes, colors and styles of AE merchandise. ${ }^{4}$

### 3.4 Investments

## Week 2

Each of the tables in section 3.4 show every trade I had made during the week indicated

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total <br> Profit |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6 / 1 / 07$ | MSFT | Buy | $\$ 30.59$ | 200 | $\$ 6,128.00$ | 0 | $\$ 12,500$ | 0 |
| $6 / 1 / 07$ | NOC | Buy | $\$ 76.19$ | 150 | $\$ 11,438.50$ | 0 | $\$ 12,500$ |  |
| $6 / 1 / 07$ | HD | Buy | $\$ 39.12$ | 200 | $\$ 7,852.00$ | 0 | $\$ 12,500$ | Total <br> Asset |
| $6 / 1 / 07$ | AEO | Buy | $\$ 27.20$ | 200 | $\$ 5,450.00$ | 0 | $\$ 12,500$ | $\$ 50,000$ |

Table 3.4.1, Week two trades

I evenly distributed $\$ 50,000$ between Northrop Grumman Corporation, Home Depot, Inc., American Eagle Outfitters, and Microsoft Corporation on Friday June $1^{\text {st. }}$ I deciding to use a method of swing trading, which entails the buying of my four stocks on June $1^{\text {st }}$ and waiting a number of days before checking to see if you want to buy or sell. We have decided to add in a $\$ 10$ commission to all of my proceedings and profits. I'll wait until Tuesday June $5^{\text {th }}$ to check again. Each stock that $I$ had purchased was at a current gain in the market when the market closed on June $1^{\text {st }}$. This will not be the only method I will be using for short term trading throughout the process of the simulation; I will also attempt to use methods of entering and exiting shares within minutes to see what type of profits I can gain. I will access all of my stocks gains and losses again on Tuesday June $5^{\text {th }}$.

Week 3

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/ Loss | Asset | Total Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/4/2007 | MSFT | Sell | \$30.72 | 200 | \$6,133.00 | \$5.00 | $\begin{array}{r} \$ 12, \\ 505.00 \end{array}$ | \$5.00 |
|  |  |  |  |  |  |  | \$12, |  |
| 6/7/2007 | MSFT | Buy | \$29.62 | 400 | \$11, 858.00 | 0 | 505.00 |  |
|  |  |  |  |  |  |  | \$12, |  |
| 6/4-6/7 | NOC | ---- | ---- | ---- | ---- | 0 | 500.00 |  |
|  |  |  |  |  |  |  | \$12, |  |
| 6/4-6/7 | HD | ---- | ---- | ---- | ---- | 0 | 500.00 | Total Asset |
|  |  |  |  |  |  |  | \$12, |  |
| 6/4-6/7 | AEO | ---- | ---- | ---- | ---- | 0 | 500.00 | \$50,505.00 |

Table 3.4.2, Week three trades

This week I continually watched my stocks on a day to day basis and traded them based on my predictions of the rise and fall of company's stock worth. I decided to buy 200 shares of MSFT, HD, AE and 150 shares of NOC on Friday June $1^{\text {st }}$. Since then I have been selling those shares and purchasing more. When I bought my shares for MSFT the stock was priced at 30.59 . The total amount of money spent on my purchase was
\$6118. On Monday I had noticed the stock rising higher then most weeks and decided to sell all 200 shares of my stock at 30.715 . The amount made after selling my stock was $\$ 6143$ and the total profit I had made since Friday is now $\$ 5$. On June $7^{\text {th }}$ I noticed that MSFT had fallen considerably low and decided to buy 400 shares at 29.62 , which came to a total of $\$ 11,848$. The cost of NOC stock on June $1^{\text {st }}$ was 76.19 and after buying 150 shares it cost me $\$ 11,428.5$. I have not decided to sell any NOC stock yet based on my predictions of NOC previous weeks stock history. After buying 200 shares of HD stock the total came to $\$ 7842$ when I bought the stock at 39.12 . There was no significant increase in HD stock this week so I have decided not to sell any of my shares. AEO stock costs 27.2 on June $1^{\text {st }}$ and I decided to buy 200 shares of the stock totaling $\$ 5440$. AEO did not have a good week this week and my shares barley went over my purchase price all week. After a week of watching the stock market using Google Financial as a major tool to watch my shares, I have noticed some patterns in my shareholders and realized that purchasing AEO stock on Friday June $1^{\text {st }}$ was a bad investment since that was a high point for the stock. I spent a total of $\$ 36558.50$ my first week of trading and currently have $\$ 13441.50$ left to trade with.

## Week 4

|  |  |  |  |  | Total |  |  |  |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | :--- |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Profit |
| $6 / 11 / 2007$ | MSFT | Sell | $\$ 30.13$ | 400 | $\$ 12,042.00$ | $\$ 184.00$ | $\$ 12,689.00$ | $\$ 570.00$ |
| $6 / 12 / 2007$ | MSFT | Buy | $\$ 29.83$ | 400 | $\$ 11,942.00$ | 0 | $\$ 12,689.00$ |  |
| $6 / 15 / 2007$ | MSFT | Sell | $\$ 30.71$ | 400 | $\$ 12,274.00$ | $\$ 332.00$ | $\$ 13,021.00$ |  |
| $6 / 13 / 2007$ | NOC | Sell | $\$ 77.53$ | 150 | $\$ 11,619.50$ | $\$ 181.00$ | $\$ 12,681.00$ | Asset |
|  | HD | ---- | --- | ---- | --- | 0 | $\$ 12,500.00$ |  |
| $6 / 15 / 2007$ | AEO | Sell | $\$ 26.64$ | 200 | $\$ 5,318.00$ | $\$ 132.00$ | $\$ 12,368.00$ | $\$ 50.00$ |
| $6 / 15 / 2007$ | AEO | Buy | $\$ 26.33$ | 100 | $\$ 2,633.00$ | 0 | $\$ 12,368.00$ |  |

Table 3.4.3, Week four trades

Now that I am getting more familiar with the stock market, I am noticing patterns in my companies. Looking back at previous week's performances I now have a slight perception of when my companies stock will rise and fall. This week I decided to set a time every morning in which I would watch the market using Google Finance. The time was from 9:30 to 10:30 A.M. Microsoft seems the most interesting of the companies so far since it rises and falls rapidly and at large amounts. On Monday June $11^{\text {th }}$ I sold all 400 shares of my stock at 30.13 . I made a total of $\$ 204$ off that transaction. On Tuesday June $12^{\text {th }}$ I bought 400 shares of MSFT stock at 29.83 . Wednesday was not very productive, but on Thursday I noticed a slight increase and based on previous rises in MSFT's stock it takes at least a day to peak, so I decided to wait and sell the stock. On Friday June $15^{\text {th }}$ I sold all 400 shares at 30.71 and have now made a total profit of $\$ 581$ off the MSFT stock in the last two weeks. I also noticed that it takes NOC's stock about a day to peak when it begins to rise. On Tuesday I noticed a slight rise in the stock and waited until the next morning. On Wednesday June $13^{\text {th }}$ I sold all 150 shares of NOC stock at 77.53. I have made $\$ 201$ off NOC stock in the past two weeks. I noticed that when I had bought my HD and AEO stock on June $1^{\text {st }}$ that it was a little high for the stock
at the time and was a bad investment. HD made no improvement this week and decided not to sell or buy any stock this week. If there is no significant increase next week then I will sell my HD stock at a reasonable price. Seeing the bad decision I also made with AEO I sold all 200 shares at 26.64. The same day I bought 100 shares at 26.33 noticing that the stock was low for previous weeks.

## Week 5

|  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | :--- |
| Date | Symbol | Buy/ | Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total Profit

Table 3.4.4, Week five trades

This week I watched the stock market repetitively during the day checking every 2 to 3 hours. On Monday I noticed that MSFT was particularly high and based on charts and graphs from previous weeks, I've noticed that it usually remains on a high for about two to three days, so I decided to watch it closely making no transactions to see if I was right. After a couple days of watching MSFT's stock closely I noticed a decrease in the graph and decided to buy 150 shares at 30.24 around 10 AM , which cost $\$ 4536$. At around 12 PM the same day I noticed a slight increase in which I would be able to make a quick profit off of and decided to sell all 150 shares at 30.36 , which totaled a profit of $\$ 4554$ and made me a quick $\$ 18$. On Friday June $22^{\text {nd }}$ I noticed a very large decrease in

MSFT's stock and bought 425 shares at 29.52 , which totaled $\$ 12,546$. I predict that MSFT stock will begin to rise on Tuesday and make a great increase between Wednesday and Thursday. NOC's stock could see significant rises and falls in the coming weeks depending on how their products turn out in testing. On Monday June $18^{\text {th }}$ I noticed a slight decrease in NOC stock around 4:30 PM and bought 160 shares at 76.63 , which totaled $\$ 12,260.80$. I checked my NOC stock again periodically on Tuesday and was luckily to find at about 12 PM NOC had risen to 77.50 and decided to sell all 160 shares at that price, making me a profit of $\$ 12,400$. On Friday June $22^{\text {nd }}$ the stock had fallen to 76.50 around 4 PM so I decided to buy another 160 shares, which totaled $\$ 12,240$. After reading an article from MSN.com through Google Finance, I have learned that HD has decided to buy back $\$ 22.5$ billion of its stock, which is definitely a concern for HD's investors. I decided to get rid of all 200 shares of my HD stock at 38.22 around 10 AM on Monday, which came to a total of $\$ 7644$. Around 4 PM the same day I bought 315 shares at 37.91 , which came to $\$ 11941.65$. After watching the stock periodically throughout the week I saw a dramatic rise in HD on Wednesday. After seeing the stock rise to 40.95 around 10 AM on I sold all 315 shares of HD stock and made $\$ 12899.25$. On Monday I also decided to sell all 100 of my shares of AEO stock at 26.97, which came to $\$ 2697$. At 3 PM the same day I bought 400 shares of AEO stock at 26.81 . On Wednesday I noticed a large rise in AEO stock around 12 PM and sold all 400 shares of it at 27.27 , which came to a total profit of $\$ 10,908$. After five weeks in the stock market simulation I have seen that checking your stock hourly throughout the day is the best method of short term trading that I have used so far and has made me the most profit compared to other weeks.

## $\underline{\mathrm{NOC}}$

Each of the figures in section 3.4 shows the profit/loss over time of the stock during the week indicated.


Figure 3.4.1, NOC Week 5


Figure 3.4.2, AEO Week five

MSFT


Figure 3.4.3, MSFT Week five

## Week 6

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total Profit |
| :--- | :--- | :--- | :---: | ---: | ---: | ---: | :--- | :--- |
| $6 / 27 / 2007$ | MSFT | Sell | $\$ 29.92$ | 425 | $\$ 12,706.00$ | $\$ 150.00$ | $\$ 13,169.00$ | $\$ 2,348.55$ |
| $6 / 29 / 2007$ | MSFT | Buy | $\$ 29.17$ | 425 | $\$ 12,407.25$ | 0 | $\$ 13,169.00$ |  |
| $6 / 29 / 2007$ | NOC | Sell | $\$ 78.21$ | 160 | $\$ 12,503.60$ | $\$ 263.60$ | $\$ 13,063.80$ |  |
| $6 / 26 / 2007$ | HD | Buy | $\$ 39.06$ | 315 | $\$ 12,313.90$ | 0 | $\$ 13,229.60$ | Total Asset |
| $6 / 27 / 2007$ | HD | Sell | $\$ 40.07$ | 315 | $\$ 12,612.05$ | $\$ 298.15$ | $\$ 13,527.75$ |  |
| $6 / 27 / 2007$ | AEO | Buy | $\$ 25.35$ | 400 | $\$ 10,150.00$ | 0 | $\$ 12,586.00$ | $\$ 52,346.55$ |

Table 3.4.5, Week six trades

Seeing the success that I have had from my method last week, I have decided to use the same method again and periodically check the status of my stock shares hourly throughout the day. Like last week I checked my stock each morning around 10 AM , again around 12PM, again around 2 PM , and again for the last time around 3:30 PM. My prediction about MSFT's stock from last week that it would rise around Tuesday this week did not work out as I had thought it would have. I did see an increase around Tuesday, but it never maintained the increase I thought it would have building up to Friday. Even though my predictions were not very accurate I still was able to make a decent profit off MSFT this week, and was able to make a very good investment on Friday that I hope will make me a very large profit next week. Around 3:30 PM on Wednesday June $27^{\text {th }}$, I sold all 425 shares of MSFT stock at 29.92, totaling \$12, 716 and making me a profit of $\$ 170$ from last week's transaction. On Friday again at around 3:30 PM I saw a very exciting drop in MSFT's stock and bought 425 shares at 29.17, totaling a loss of $\$ 12$, 397.25. Buying such a low stock from MSFT will definitely bring me a large profit next week. There was no significant increase for NOC's stock earlier in the week and decided to just wait and see if the stock would rise by the end of the week. My patience paid off and on Friday June $29^{\text {th }}$ there was a very large rise in NOC's stock.

Around 12 PM on Friday I sold all 160 of my shares at 78.21 , which gave me a total profit of $\$ 12,513.60$. This made me $\$ 273.60$ from last week's transaction. On Monday I saw no significant increase or decrease in AEO's stock and decided to wait. On Tuesday June $26^{\text {th }}$ patience once again paid off for me this week as HD's stock fell at a large rate. I bought 315 shares at 39.06 which made total loss of $\$ 12,303.90$. On Thursday June $27^{\text {th }}$ around 12 PM I again caught a very large increase in HD stock and took advantage by selling all 315 shares at 40.07 , which totaled $\$ 12,622.05$. This gave me a profit of $\$ 318.15$ from this week's transaction. AEO's stock had a significant decrease in the middle of the week and I decided to once again take advantage of my findings and around 12 PM I bought 400 shares at 25.35 , which made a total loss of $\$ 10$, 140. I saw no significant rise in AEO stock and have decided to hold on to my current shares until there is another large rise. ${ }^{5}$


Figure 3.4.4, MSFT Week six


Figure 3.4.5, HD Week six


Figure 3.4.6, AEO Week six

## Week 7

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | \$13, | \$3, |
| 7/3/2007 | MSFT | Sell | \$30.01 | 425 | \$12, 744.25 | \$337.00 | $\begin{array}{r} 506.00 \\ \$ 13, \end{array}$ | 555.75 |
| 7/2/2007 | NOC | Buy | \$78.31 | 160 | \$12, 539.60 | 0 | $\begin{array}{r} 063.80 \\ \$ 13, \end{array}$ |  |
| 7/3/2007 | NOC | Sell | \$78.78 | 160 | \$12, 594.80 | \$55.20 | 119.00 |  |
| 7/2/2007 | HD | Buy | \$39.43 | 315 | \$12, 430.25 | 0 | $\$ 13$, 527.75 | Total Asset |
|  |  |  |  |  |  |  | \$13, |  |
| 7/6/2007 | HD | Sell | \$40.33 | 315 | \$12, 693.25 | \$263.00 | 790.75 |  |
| 7/6/2007 | AEO | Sell | \$26.78 | 400 | \$10, 702.00 | \$552.00 | $\$ 13$, 138.00 | $\begin{aligned} & \$ 53, \\ & 553.75 \end{aligned}$ |

Table 3.4.6, Week seven trades

On Tuesday July $3^{\text {rd }}$ at around 10 in the morning I saw a rise in MSFT stock and sold 425 shares at 30.01 , which came to a total profit of $\$ 12754.25$. Seeing as the stock market was closed on Wednesday July $4^{\text {th }}$ there was not much activity for MSFT stock and turned out to be a very slow and even week. Around 2 PM on Monday July $2^{\text {nd }} \mathrm{I}$ decided to buy 160 shares of NOC stock at 78.31 , which came to a loss $\$ 12,529.6$. When I checked my stock at 10 AM , which I have been doing in my past few previous weeks, I noticed a large rise in NOC stock and sold all 160 shares at 78.78 , which made me a total profit of $\$ 12,604.8$. NOC had a very slow week after July $4^{\text {th }}$. Around 10 AM on Monday I bought 315 shares of HD stock at 39.34 . Home Depot had a very good week for there stores since many people were on vacation for the week of July $4^{\text {th }}$, and most likely did some sort of house work. That proved to be true because on Friday HD stock raised a significant amount and when I checked my stock again that day around 12 PM I sold all 315 shares at 40.33, giving me a profit of $\$ 12703.95$. Holiday's bring sales and sales bring more business which I believed caused AEO stock to rise a large amount on Friday. I took advantage of this rise and sold all 400 shares at 26.78 around 10 AM on Friday morning. This gave me a total profit of $\$ 10,712 .{ }^{4}$


Figure 3.4.7, MSFT Week seven


Figure 3.4.8, NOC Week seven


Figure 3.4.9, HD Week seven

## Week 8

|  |  | Buy/ |  |  | Proceeds/ |  |  | Total Profit |
| :--- | :--- | :--- | :--- | ---: | :--- | ---: | ---: | ---: |
| Date | Symbol | Sell | Price | Shares | Cost | Profit/Loss | Asset | 0 |
| $7 / 10 / 2007$ | MSFT | Buy | $\$ 29.32$ | 425 | $\$ 12,471.00$ | $\$ 13,506.00$ | $\$ 4529.90$ |  |
| $7 / 12 / 2007$ | MSFT | Sell | $\$ 29.88$ | 425 | $\$ 12,689.00$ | $\$ 218.00$ | $\$ 13,724.00$ |  |
| $7 / 10 / 2007$ | NOC | Buy | $\$ 76.22$ | 160 | $\$ 12,195.20$ | 0 | $13,119.00$ |  |
| $7 / 10 / 2007$ | HD | Buy | $\$ 40.31$ | 315 | $\$ 12,697.65$ | 0 | $\$ 13,790.75$ | Total Asset |
| $7 / 13 / 2007$ | HD | Sell | $\$ 40.92$ | 315 | $\$ 12,889.80$ | $\$ 192.15$ | $\$ 13,982.90$ |  |
| $7 / 10 / 2007$ | AEO | Buy | $\$ 26.31$ | 400 | $\$ 10,534.00$ | 0 | $\$ 13,138.00$ | $\$ 54,527.90$ |
| $7 / 12 / 2007$ | AEO | Sell | $\$ 27.77$ | 400 | $\$ 11,098.00$ | $\$ 564.00$ | $\$ 13,702.00$ |  |

Table 3.4.7, Week eight trades

This week I was unable to access my computer as much as I was in previous weeks for my exchanges and was unable to make my trades at an hourly basis. Therefore, I decided to use the method of swing trading this week once again, and see if I
can make any decent profit. I chose to check my stock around 12 PM and 3 PM on Tuesday, Thursday, and Friday of this week. This week turned out to be a great week to do this since all of my stocks had fallen a considerable amount in the beginning of the week, and all once again kept rising until Friday's close. Around 3 PM on Tuesday I bought 425 shares of MSFT stock at 29.32 , which made me a loss of $\$ 12461$. I saw a slight rise in MSFT stock around 3 PM on Thursday of this week and sold 425 shares at 29.88, making a profit of $\$ 12,699$. Around 3 PM on Tuesday of this week I bought 160 shares of NOC stock at 76.22, which made me a loss of \$12, 195.20. NOC stock remained at a constant the rest of the week so I have decided to wait to next week to make any trades knowing that the stock should be able to rise at least a dollar before I sell it. Around 3 PM on Tuesday I bought 315 shares of HD stock at 40.31 , which made a loss of $\$ 12$, 697.65. On Friday at about $3: 15$ PM I sold all 315 shares at 40.92 , which made a profit of $\$ 12,889.80$. AEO had a very interesting, productive, and profitable week for me. On Tuesday there stock had dropped considerably low and I decided to buy 400 shares at 26.31 around 12 PM, which came to a loss of $\$ 10,524$. On Thursday there stock jumped about a dollar up from where it was on Wednesday and around 3 PM I sold all 400 shares at 27.77 , which made a profit of $\$ 11,108$. This week was once again a very productive week. I am finding that Short Term trading has been very profitable to me. I have been using a system of never selling my stock cheaper then it was bought so I only make a profit with every trade even if it's small.


Figure 3.4.10, MSFT Week eight


Figure 3.4.11, AEO Week eight

## Week 9

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MSFT | ---- | ---- | ---- | ---- | 0 | \$13, 724.00 | \$4, 719.90 |
| 7/19/07 | NOC | Sell | 77.47 | 160 | \$12, 385.20 | \$190.00 | \$13, 309.00 |  |
|  | HD | ---- | ---- | ---- | ---- | 0 | \$13, 982.90 |  |
|  | AEO | ---- | ---- | ---- | ---- | 0 | \$13, 702.00 | Total Asset |
|  |  |  |  |  |  |  |  | \$54, 717.90 |

Table 3.4.8, Week nine trades

This is the final week of the simulation and since I have not been able to access a computer constantly this week I decided to trade only twice this week picking Tuesday and Thursday as the two days that I will make any trades. On Tuesday I checked my stocks around 10 AM, and on Thursday I checked my stocks around 12 PM. Seeing as this was the final week any trades could be made, on Thursday I had to trade any shares I currently owned. MSFT, HD, and AEO all had very uneventful weeks and because of
this I decided to not risk any of the money I had already made and did not make any trades this week for those stocks. On Thursday I sold all 160 shares of the NOC stock I had currently owned at 77.47 around 12 PM, which gave me a total profit of $\$ 12,395.20$. With that trade, I have ended my stock market simulation, and have now made a profit of $\$ 5,136.75$ off my original amount of $\$ 50,000$ giving me a total of $\$ 55,136.75$.

### 3.5 Results

Figures 3.5.1-3.5.5 shows the stock market graphs of each of my chosen stocks during the 9 week simulation.

## MSFT



Figure 3.5.1, MSFT three-month performance


Figure 3.5.2, NOC three-month performance


Figure 3.5.3, HD three-month performance


Figure 3.5.4, AEO three-month performance

In the beginning of the simulation I tried a few approaches that seemed to make a decent profit, but not of the caliber that I had wanted. Swing trading didn't seem to work well with the stocks I had chosen since it was very hard to predict which days my companies would be on a high or low point. Checking my stocks everyday, threes times a day proved to be the smartest and most profitable method. I made the most money during the weeks that I had used this method. I find short term trading to be a very convenient and easy way to trade stocks. If you were first starting out with the stock market I would suggest trying this method out first if you want to make some quick profits.

Microsoft did fairly well compare with the other stocks. I made a profit of $\$ 1$, 224 which was the second largest out of my four stocks. In the beginning of the simulation I had predicted that it would either be the most profitable stock or close to it. MSFT trend during the weeks proved to be very helpful for short term trading since their were so many random rises and falls. The graph below shows the profit of my assets that I had made over time.


Figure 3.5.5, MSFT Simulation performance

I wasn't really sure how I would fare when I chose NOC for my stock. During the simulation they remained pretty constant, though I did have a couple of interesting weeks with them. In the end I made a total of $\$ 809$ in profit off of NOC. Below shows a graph of NOC assets over the time period of the simulation.


Figure 3.5.6, NOC three-month performance

Home Depot at first seemed to surprise me with how well they were doing, but I quickly realized it was the perfect time of the season to be investing stocks into HD. Most people are attempting to fix whatever needs to get done around their homes during the summer, which brings it a lot of business. The week of July $4^{\text {th }}$ was a great week for investors in HD stock. I made a total of $\$ 1,482$ which was the most out of all of my stocks. Below shows a graph of my assets over time.


Figure 3.5.7, HD three-month performance

Even AEO turned out to be a better investment then NOC. The main reason I chose AEO was so I could see how well a clothing company would do during the beginning of the summer and to see how much it's stock would be worth on a weekend like July $4^{\text {th }}$. My interest paid off for me that week as I made $\$ 552.00$ alone off one trade. I made a total of $\$ 1,202$ which was only $\$ 20$ away from tying with MSFT. Below shows a graph of AEO assets over time.


Figure 3.5.8, AEO three-month performance

Short term trading does have its flaws since every transaction made causes a $\$ 10$ fee for commission during the trades. If you looked at the trends in the stocks of MSFT and HD you will see it would have been better to use a method of long term trading by buying there stocks in June when they were low and selling them in July when they were at there peak. That would have saved me all the commission lost through all of my quick transactions. When it came down to the companies that I had chosen, HD made the most profit and was the best choice of my companies. I believe this was mainly because of the time period that I had traded my stocks is perfect for HD seeing that most people use this time to fix up there house and do any yard work necessary during the summer, bringing
many new customers and more profit to HD. Considering these techniques I devised a little formula that you could use to help your buy/sell strategy. Total Profit(in year) = sum of $\{\mathrm{P}\}-\mathrm{n} *$ fee. Where $\mathrm{P}=$ profit from transaction $\mathrm{I}, \mathrm{n}=$ number of transaction per year, and fee $=$ fee for transaction. Using this formula you can go back and look at previous trends in the stock of your choice and decide which method would be more liable for the current stock that you own. Using the methods that I had chosen for short term trading I made a total profit of $\$ 4,719.90$, which is under my goal of $\% 10$, but still a decent profit to have made during the simulation.

## 4. Using Zack's Numbers

### 4.1 Goals of the simulation

My goals for this simulation are fairly straight forward; firstly the goal is to gain valuable experience that will help me in the future to make wise decisions with my financial responsibilities. Secondly, for this simulation I would like to examine the so called "expert advice" which the average consumer takes without a second thought; Zack's is a respected and trusted investment firm, I would like to determine exactly how accurate their advice is at providing positive results to consumers. Lastly I want to take the information I gained from the second goal and use it to provide consumers with a method for investment or advice when choosing an investment firm. Financially I would like to see a $10 \%$ profit from the 7 weeks of trading. This is a lofty aspiration, however I believe, an attainable one. This chapter will explain what Zack's Numbers are, the trading style associated with them, the actual trades made based upon this style, and finally an analysis and recommendations about Zack's Trading.

### 4.2 What are Zack's Numbers?

Zack's Investment Firm is an Internet based investment research firm. They analyze a company's performance relative to current market trends and predict the company's 90 day earnings in the stock market. Zack's offers multiple different investment research products, ranging from "Zack's numbers to" "Zack's Top Ten Pick's" which boasts a $38 \%$ earning potential ${ }^{6}$. I decided to go with the "Zack's Numbers" system because of its simplicity to the average consumer and ease of use. The actual system of numbers is very simple; every day stocks are assigned a number between
one and five, picked by a Zack's stock market analyst. A rating of one means strong buy, a rating of five means strong sell. The idea behind this is completely contingent on the analyst predicting the market properly, and hoping that people buy your stock exactly when you do, sending the price higher so you can sell at the top. I have assigned a percentage to each number. A strong buy (1) means to increase my share in that stock by $50 \%$, funds for which will be evenly distributed from my other stocks and available cash. A buy (2) is the same except with $25 \%$. The numbers apply to the sell and strong sell numbers the same.

### 4.3 Stocks Chosen

## GlaxoSmithKline (GSK)

The first stock I chose was GlaxosmithKline (GSK). GSK is a global healthcare group, which is engaged in the creation and discovery, development, manufacture and marketing of pharmaceutical products, including vaccines, over-the-counter (OTC) medicines and health-related consumer products. The Company operates in two segments: prescription pharmaceuticals and vaccines, and Consumer Healthcare (over-the-counter medicines, oral care and nutritional healthcare). The major markets for the Company's products are the United States, France, Japan, the United Kingdom, Italy, Germany and Spain. GlaxosmithKline's main competitors are Pfizer and Merck, all of who are considered to be among the top five pharmaceutical companies. Some of GSK's drugs include Advair, a leading asthma therapy, an oral herpes treatment called Valtrex, and the anti-depressant Paxil. ${ }^{5}$

I decided to choose this stock because my personal interest lies in the healthcare industry, and I am familiar with the work that GSK has done, and is doing. The drugs they make are widely prescribed and effective, for this reason, along with the fact that they are producing almost 20 new pharmaceuticals per year (not all of which are approved by the FDA) I decided upon GSK. My main driving reason for choosing GSK however was the introduction of CERVARIX to the market, which has shaken the very foundation of the healthcare industry as the world's first cancer vaccine.


Figure 4.3.1. Three-month performance of GSK versus NASDAQ

## McDonald's (MCD)

In an effort to introduce breadth and variety to my stocks, I chose to add McDonalds to my portfolio. McDonalds is the worlds largest chain restaurant, with an annual market of 58.2 Billion dollars. Their restaurants serve a varied, yet limited, valuepriced menu in more than 100 countries around the world. All restaurants are operated
either by the Company, by independent entrepreneurs under the terms of franchise arrangements (franchisees), or by affiliates and developmental licensees operating under license agreements. McDonald's restaurants offer a uniform menu, although there may be geographic variations. In addition, McDonald's tests products on an ongoing basis. McDonald's menu includes hamburgers and cheeseburgers, Big Mac, Quarter Pounder with Cheese, Filet-O-Fish, several chicken sandwiches, Chicken McNuggets, Chicken Selects, French fries, premium salads, shakes, McFlurry desserts, sundaes, soft serve cones, pies, cookies, soft drinks, coffee and other beverages. ${ }^{4}$

I decided to go with McDonald's because they are a time-tested company, which was recently ranked the largest chain food company in the world. My hope was that any promotion or event that drew more customers would result in a significant rise in stock price.


Figure 4.3.2. Three-month performance of MCD versus NASDAQ

Motorola, Inc. (MOT)
Motorola, Inc. builds, markets and sells products, services and applications that connect people, information and entertainment through broadband, embedded systems and wireless networks. It is comprised of three segments: Mobile Devices, Networks and Enterprise, and Connected Home Solutions. It provides wireless handsets, which transmit and receive voice for both consumers and emergency services, text, images, multimedia and other forms of information, communication and entertainment. It offers a family of point-to-point and point-to-multipoint wireless broadband products to serve wireless fidelity and digital subscriber line operators. Motorola is the sole supplier and designers of the system used to connect emergency personnel such as firefighters and EMT's while on duty. ${ }^{4}$

I chose this stock because I have used Motorola products in the past in many situations and am impressed with their quality. They are constantly coming out with new devices, many of which become the "trendy" product to have. My hope when purchasing this stock was the announcement of any new device which would be highly anticipated by consumers.


Figure 4.3.3. Three-month performance of MOT versus NASDAQ

## Apple, Inc. (AAPL)

Apple Inc., founded on January 3, 1977, designs, manufactures and markets personal computers and related software, services, peripherals and networking solutions. The Company also designs, develops and markets a line of portable digital music players along with related accessories and services, including the online sale of third-party audio and video products. Their products and services include the Macintosh line of desktop and notebook computers; the iPod line of portable digital music players; the Xserve server; the Mac OS X operating system; the iTunes Store, and multipule peripherals that accompany the Macintosh and iPod product lines. The Company sells its products worldwide through its online stores, retail stores, direct sales force, and third-party wholesalers and resellers. ${ }^{5}$


Figure 4.3.4, three-month performance of AAPL versus NASDAQ

### 4.4 Trades

All my initial investments were made on June $1^{\text {st }}$, 2007. The amount to be invested was $\$ 50,000$. I came as close to this as I could without going over $\$ 12,500$ in any individual stock and ended up investing $\$ 49,942.92$. According to the Zack's number on June $1^{\text {st }}$, I was to buy $25 \%$ more stock in McDonald's (MCD). I made the decision to not do this considering that I purchased all my shares on a Friday and it was the first day of the simulation. We made the decision to include a $\$ 10$ commission with each trade that is factored into my profit and proceedings.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $6 / 1 / 07$ | AAPL | BUY | $\$ 121.19$ | 103 | $\$ 12,492.57$ | 0 | $\$ 12,482.57$ | $\$ 0.00$ |
| $6 / 1 / 07$ | GSK | BUY | $\$ 52.18$ | 243 | $\$ 12,689.74$ | 0 | $\$ 12,679.74$ |  |
| $6 / 1 / 07$ | MCD | BUY | $\$ 50.55$ | 243 | $\$ 12,293.65$ | 0 | $\$ 12,283.65$ | Total Asset |
| $6 / 1 / 07$ | MOT | BUY | $\$ 18.19$ | 687 | $\$ 12,506.53$ | 0 | $\$ 12,496.53$ | $\$ 49,942.49$ |

Table 4.4.1, Week one trading performance

I quickly learned that Zack's is not updated daily as they had advertised, and the recommendations maintained their status for the whole week. I had originally planned on trading on a daily basis corresponding to the change in Zack's numbers. Doing this would have resulted in all my stock being moved to McDonald's (MCD) however, thus I decided to make all trades at the conclusion of the week. On June $8^{\text {th }}$ I preformed the $25 \%$ reallocation, resulting in a cost of $\$ 3,139.67$ for McDonalds.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | :--- |
| $6 / 8 / 07$ | AAPL | Sell | $\$ 126.00$ | 9 | $\$ 1,124.00$ | $(\$ 33.29)$ | $\$ 11,844.00$ | $(\$ 22.69)$ |
| $6 / 8 / 07$ | GSK | Sell | $\$ 51.37$ | 20 | $\$ 1,017.40$ | $\$ 26.20$ | $\$ 11,455.51$ |  |
| $6 / 8 / 07$ | MCD | Buy | $\$ 51.47$ | 61 | $\$ 3,129.67$ | $(\$ 46.12)$ | $\$ 15,646.88$ | Total Asset |
| $6 / 8 / 07$ | MOT | Sell | $\$ 17.83$ | 57 | $\$ 1,006.31$ | $\$ 30.52$ | $\$ 11,232.90$ | $\$ 50,179.29$ |

Table 4.4.2, Week two trading performance

On June $15^{\text {th }}$ I made the decision to allow myself some leeway with trades, and decided to hold all my stocks instead of buying more McDonald's (MCD). This resulted in $\$ 593.00$ more asset from the increase in stock price.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $6 / 15 / 07$ | AAPL | Hold | $\$ 123.28$ | 94 | $\$ 0.00$ | $\$ 0.00$ | $\$ 11,588.32$ | $(\$ 22.69)$ |
| $6 / 15 / 07$ | GSK | Hold | $\$ 52.53$ | 223 | $\$ 0.00$ | $\$ 0.00$ | $\$ 11,714.19$ |  |
| $6 / 15 / 07$ | MCD | Hold | $\$ 52.07$ | 304 | $\$ 0.00$ | $\$ 0.00$ | $\$ 15,829.28$ | Total Asset |
| $6 / 15 / 07$ | MOT | Hold | $\$ 18.35$ | 630 | $\$ 0.00$ | $\$ 0.00$ | $\$ 11,560.50$ | $\$ 50,692.29$ |

Table 4.4.3, Week three trading performance

On June $22^{\text {nd }}$ I again purchased $25 \%$ more shares of McDonald's (MCD), amounting to $\$ 3,612.84$ more asset in McDonald's.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $6 / 22 / 07$ | AAPL | Sell | $\$ 123.00$ | 11 | $\$ 1,343.00$ | $(\$ 9.91)$ | $\$ 10,209.00$ | $\$ 15.66$ |
| $6 / 22 / 07$ | GSK | Sell | $\$ 51.83$ | 8 | $\$ 404.64$ | $\$ 12.80$ | $\$ 11,143.45$ |  |
| $6 / 22 / 07$ | MCD | Buy | $\$ 50.42$ | 82 | $\$ 4,124.44$ | $\$ 20.66$ | $\$ 19,462.12$ | Total Asset |
| $6 / 22 / 07$ | MOT | Sell | $\$ 17.89$ | 16 | $\$ 276.24$ | $\$ 14.80$ | $\$ 10,984.46$ | $\$ 51,799.03$ |

Table 4.4.4, Week four trading performance

Continuing with my modified trading plan, On June $29^{\text {th }}$, I used my instincts to purchase 42 more shares of Apple (AAPL) by redistributing money from my other stocks. This was done because on June $29^{\text {th }}$ the highly anticipated Apple iPhone which debuted after the market closing hour, and I expected to see a large increase in price as reviews came out over the weekend and initial sales figures were released. The iPhone shattered all industry analyst predictions and resulted in a large increase in stock price as I had predicted.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $6 / 29 / 07$ | AAPL | Buy | $\$ 122.04$ | 42 | $\$ 5,115.68$ | $(\$ 25.70)$ | $\$ 15,255.00$ | $\$ 49.41$ |
| $6 / 29 / 07$ | GSK | Sell | $\$ 52.37$ | 55 | $\$ 2,870.35$ | $(\$ 0.45)$ | $\$ 8,379.20$ |  |
| $6 / 29 / 07$ | MCD | Sell | $\$ 50.76$ | 34 | $\$ 1,715.84$ | $\$ 2.86$ | $\$ 17,867.52$ | Total Asset |
| $6 / 29 / 07$ | MOT | Sell | $\$ 17.70$ | 96 | $\$ 1,689.20$ | $\$ 57.04$ | $\$ 9,168.60$ | $\$ 50,670.32$ |

Table 4.4.5, Week five trading performance

On July $6^{\text {th }}$ I again decided to hold all of my shares, Apple stock was rising and everything else remained steady, the hold resulted in $\$ 2,307.49$ in increased assets, apple stock accounted for $\$ 1,302.50$ of this.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | :---: | ---: | ---: | ---: | ---: | ---: |
| $7 / 6 / 07$ | AAPL | Hold | $\$ 132.30$ | 125 | $\$ 0.00$ | $\$ 0.00$ | $\$ 16,537.50$ | $\$ 49.41$ |
| $7 / 6 / 07$ | GSK | Hold | $\$ 51.80$ | 160 | $\$ 0.00$ | $\$ 0.00$ | $\$ 8,288.00$ |  |
| $7 / 6 / 07$ | MCD | Hold | $\$ 51.43$ | 352 | $\$ 0.00$ | $\$ 0.00$ | $\$ 18,103.36$ | Total Asset |
| $7 / 6 / 07$ | MOT | Hold | $\$ 17.84$ | 518 | $\$ 0.00$ | $\$ 0.00$ | $\$ 9,241.12$ | $\$ 52,169.98$ |

## Table 4.4.6, Week six trading performance

After very dismal news reports concerning Motorola (MOT) on July $13^{\text {th }} \mathrm{I}$ decided to sell all my shares of Motorola (MOT) and invest it directly into Apple (AAPL).

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $7 / 13 / 07$ | AAPL | Buy | $\$ 137.73$ | 67 | $\$ 9,217.91$ | $(\$ 1,098.18)$ | $\$ 26,444.16$ | $(\$ 888.55)$ |
| $7 / 13 / 07$ | GSK | Hold | $\$ 52.54$ | 160 | $\$ 0.00$ | $\$ 0.00$ | $\$ 8,406.40$ |  |
| $7 / 13 / 07$ | MCD | Hold | $\$ 51.91$ | 352 | $\$ 0.00$ | $\$ 0.00$ | $\$ 18,272.32$ | Total Asset |
| $7 / 13 / 07$ | MOT | Sell | $\$ 17.90$ | 518 | $\$ 9,262.20$ | $\$ 160.22$ | $\$ 0.00$ | $\$ 53,122.88$ |

Table 4.4.7, Week seven trading performance

My decision to sell Motorola is largely the reason for my $7.91 \%$ increase in overall assets. In the last week of trading, July $21^{\text {st }}$, I decided to hold all my stocks as Apple (AAPL) continued to rise.

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Market Value | Total Profit |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| $7 / 21 / 07$ | AAPL | Hold | $\$ 140.00$ | 192 | $\$ 0.00$ | $\$ 0.00$ | $\$ 26,880.00$ | $(\$ 888.55)$ |
| $7 / 21 / 07$ | GSK | Hold | $\$ 52.97$ | 160 | $\$ 0.00$ | $\$ 0.00$ | $\$ 8,475.20$ |  |
| $7 / 21 / 07$ | MCD | Hold | $\$ 52.67$ | 352 | $\$ 0.00$ | $\$ 0.00$ | $\$ 18,539.84$ | Total Asset |
| $7 / 21 / 07$ | MOT | Hold | $\$ 18.22$ | 0 | $\$ 0.00$ | $\$ 0.00$ | $\$ 0.00$ | $\$ 53,895.04$ |

Table 4.4.8, Week eight trading performance

Below is a summary of the trades I made; please note that in this chart total shares corresponds to the amount of shares I have in my possession, not the amount of shares traded.

| Date | Stock | Buy/Sell | Price | Total Shares | Proceedings/Cost | Profit/Loss |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: |
| $6 / 1 / 07$ | AAPL | Buy | $\$ 121.19$ | 103 | $\$ 12,482.57$ | 0 |
| $6 / 1 / 07$ | GSK | Buy | $\$ 52.18$ | 243 | $\$ 12,679.74$ | 0 |
| $6 / 1 / 07$ | MCD | Buy | $\$ 50.55$ | 243 | $\$ 12,283.65$ | 0 |
| $6 / 1 / 07$ | MOT | Buy | $\$ 18.19$ | 687 | $\$ 12,496.53$ | 0 |
| $6 / 8 / 07$ | AAPL | Sell | $\$ 126.00$ | 94 | $\$ 1,124.00$ | $(\$ 33.29)$ |
| $6 / 8 / 07$ | GSK | Sell | $\$ 51.37$ | 223 | $\$ 1,017.40$ | $\$ 26.20$ |
| $6 / 8 / 07$ | MCD | Buy | $\$ 51.47$ | 304 | $\$ 3,129.67$ | $(\$ 46.12)$ |
| $6 / 8 / 07$ | MOT | Sell | $\$ 17.83$ | 630 | $\$ 1,006.31$ | $\$ 30.52$ |
| $6 / 22 / 07$ | AAPL | Sell | $\$ 123.00$ | 83 | $\$ 1,343.00$ | $(\$ 9.91)$ |
| $6 / 22 / 07$ | GSK | Sell | $\$ 51.83$ | 215 | $\$ 404.64$ | $\$ 12.80$ |
| $6 / 22 / 07$ | MCD | Buy | $\$ 50.42$ | 386 | $\$ 4,124.44$ | $\$ 20.66$ |
| $6 / 22 / 07$ | MOT | Sell | $\$ 17.89$ | 614 | $\$ 276.24$ | $\$ 14.80$ |
| $6 / 29 / 07$ | AAPL | Buy | $\$ 122.04$ | 125 | $\$ 5,115.68$ | $(\$ 25.70)$ |
| $6 / 29 / 07$ | GSK | Sell | $\$ 52.37$ | 160 | $\$ 2,870.35$ | $(\$ 0.45)$ |
| $6 / 29 / 07$ | MCD | Sell | $\$ 50.76$ | 352 | $\$ 1,715.84$ | $\$ 2.86$ |
| $6 / 29 / 07$ | MOT | Sell | $\$ 17.70$ | 518 | $\$ 1,689.20$ | $\$ 57.04$ |
| $7 / 13 / 07$ | MOT | Sell | $\$ 17.90$ | 0 | $\$ 9,217.91$ | $(\$ 1,098.18)$ |
| $7 / 13 / 07$ | AAPL | Buy | $\$ 137.73$ | 192 | $\$ 9,262.20$ | $\$ 160.22$ |

Table 4.4.9, Summary of Trades

The graph below shows my overall change in asset as a function of time. I finished the simulation with a $\$ 3,952.55$ profit after closing out on all of my stocks, or $7.91 \%$. I missed my goal of $10 \%$ by $\$ 1,041.70$.


Figure 4.4.1, Asset versus time

### 4.5 Conclusion and Results

The first stock I had chosen was GlaxosmithKline (GSK). When performing my research for this project, GSK seemed to be holding steadily, however there was news of the introduction of their cervical cancer drug CARVARIX to the market. This news gave me a false optimism of the stock's future. CERVARIX in fact had no significant result on the price of the stock over the 7-week trading period and only ended up hovering around its initial purchase price of $\$ 52$. According to the Zack's numbers, GSK was listed as a 3 for the entirety of the simulation. From this we can infer that the industry analysts are expecting no huge gains or losses from this stock. That is exactly what I saw, no huge gains or losses. Due to trades my final profit with GSK was $\$ 126.40$, however I lost an
overall $\$-4,184.54$ in assets from GSK due to trades. This is a graph of GSK's closing price over the simulation period.

GSK Closing Price Vs Ti


Figure 4.5.1, GSK Closing price versus time

My second chosen stock, McDonalds fared almost the same as GSK. Each had a purchase price around $\$ 52$ and neither gained or lost a lot during the simulation. With the exception of one day of trading when it downgraded to a 3 , or hold, Zack's ranked McDonalds a 2 for the entirety of the simulation. A 2 indicates a stock will likely rise in the near future and that purchasing more in that stock would be a wise move. Following this advice I kept dumping money into McDonald's, this resulted in my other stocks suffering and no net gain in profit from the trades. McDonalds did not rise as Zack's had
expected and merely maintained its price over the 7 weeks. I had initially chosen this stock because of the recent news reports that they are in fact the world's largest chain restaurant, and had plans of expanding beyond the already occupied 100 countries with over 230 more stores. This unfortunately did not result in the rise in price that I had hoped for. Zack's disappointed me in their prediction for McDonald's, while purchasing more stock in them did not result in a loss of profit, the loss of shares from my other stocks did result in a loss of potential profit. My overall increase in assets for McDonald's over the trading period was $\$ 6,276.19$ because of trades. The overall profit from McDonald's was $\$ 746.24$. The graph below shows the price of McDonald's over the simulation period.


Figure 4.5.2, MCD Closing price versus time

My third stock chosen was Motorola, Inc. (MOT). Zack's listed Motorola as a 3 (hold) for the entirety of the simulation. Motorola by far was the least expensive of my stocks, purchased at $\$ 18.19$ with 687 shares. Motorola did not beat the market predictions and began to sink very quickly as the simulation continued. After the introduction of the Apple iPhone, a product that directly rivals a large component of Motorola sales, shares began to fall more and more. On July $13^{\text {th }}$ I made the decision to sell all of my shares in Motorola and reinvest them all into Apple stock. This move proved to be profitable, although had I left the money in Motorola, I would have broken even. When I decided to sell the stock, it had hit an all time low of $\$ 17.62$ just two days previous, and I did not want to risk a loss when I had a stock (AAPL) which I knew was increasing. Prior to sale, my profit in Motorola was $-\$ 181.30$. I sold it for a value of $\$ 9,261.12$, which was invested into apple ( 67 additional shares) and gave me a remaining cash value of $\$ 33.05$ in Motorola. The following graph shows the closing price of Motorola over the 7-week trading period.

MOT Closing Price Vs Time


Figure 4.5.3, MOT Closing price versus time

My final stock purchased was Apple (AAPL). Apple beat out any analyst prediction, and is the main reason for my doubt in Zack's Numbers. Apple was listed as a 3 (hold) for the entirety of the simulation. This surprised me from the beginning because the companies newest highly anticipated product, the iPhone was announced in January, and was slated for release on June $29^{\text {th }}$. Following the release of the iPhone the stock began to rise dramatically as people flooded the stores to purchase the iPhone resulting in a one-weekend sale of over 300,000 units. Following this news I decided to invest all of my Motorola stock into Apple, this increased my assets in apple by $\$ 9,886.66$, and considering an initial investment of only $\$ 9,261.12$, that means the move resulted in a
profit of $\$ 3,611.52$. The following graph shows the closing price of apple over the 7week trading period.


Figure 4.5.4, AAPL Closing price versus time

To sum up this portion of our project, I would have to say I was less than impressed with the Zack's method of trading. When I started this simulation I chose my stocks based on meticulous research that factored in the history of the company, the current news surrounding the company, any new products or services being offered now or in the near future, and the experience I have had with that particular company. The stock I chose spanned a wide range of markets, and each was a powerhouse within its own realm. When I finally was able to gain access to the "Zack's Numbers" at the beginning of the simulation, I was shocked to see the lack of attention paid to the stocks I
had chosen. When big news did come out about a company, such as with Apple and the iPhone, there were no signs of interest shown by Zack's. In the end I had to use my own judgment to trade so that I could make the most profit possible. In the case of Apple, I had believed it to be an obvious choice to buy more stock. While I have done research into the stock market, I am by no means an expert, and the subtleties of the market which only the so called expert would be able to recognize were ignored in the case of my other stocks such as Motorola, which should have been sold well before I made the decision to sell it. I set my goal at the beginning of this simulation to have a $10 \%$ profit. This is a large amount to aim for, and had I followed my initial plans and traded according to Zack's, I would not have gained more than $5 \%$. I did not reach my goal unfortunately, however I did come close, with $7.91 \%$, a total cash net of $\$ 3,952.55$. Any investor would be happy with a return of this amount. One of the main reasons for this large return however was luck; I was very fortunate to have my stock in Apple. Had it not been for Apple, I would have barely broken even. As for my goals of this simulation, I believe that I have accomplished all of them. I now have a thorough understanding of the stock market, and a good idea of what is risky and what is safe. I have determined that Zack's is not a trustworthy source of investment information, and I would not recommend using them for any sort of investment strategies. From these two things as I had stated in my goals, I have come up with a recommendation for investment; it all lies in the stock you choose. If I had to come up with a strategy for investment, it would be to invest in the company that is making the "popular brand" right now, or who is in high demand.

## 5. Long Term Trading

### 5.1 Goals of Simulation

The goal of this simulation is to educate myself about the stock market by imitating a real life ownership of stocks. I choose four companies that I will watch over a month's time and make trades and decisions based on knowledge gathered from research. I hope that by participating in this artificial stock market assignment I will gain a valuable understanding of the stock market and use it later in my life to make informed investments.

In addition to learning about the stock market, I am aiming to make a $10 \%$ return. With an initial investment of $\$ 49985.46$, that would be a total profit of $\$ 4998.55$.

### 5.2 Pros and Cons of Long Term Trading

Long Term Trading is the strategy of waiting and watching the market for a long period of time before making a trade. Many experts say that the biggest mistake that investors make is that they sell or buy too quickly, giving in to a gut instinct or a rumor about a company's next move in the market. The stock market is an incredibly unsystematic beast in that it is almost impossible to predict it. There have been many attempts to try and understand the market better, but in the end there is really no mathematical way to predict the way people will spend their money. On top of that, natural disasters, large-scale company fraud and outbreaks of war can sway the markets dramatically. In the end, a smart investor is looking for a long term investment that will pay out a large profit over time. Basically, I am looking for good stocks that I think that
even though they might be losing money in the beginning that the market will turn around and pay out. ${ }^{2}$

Although long term trading is the more advised method of managing your stocks, there are indeed some disadvantages to it. For one thing, by not hopping on hot trades that can occur at anytime it can be easy to miss out on huge profits. Certain stocks with momentum bring the possibility of gaining as much as $100 \%$ on the same trading day. Some may only rise $20 \%$ on a few minutes, which means that you could make $\$ 200$ on a $\$ 1000$ investment on the same day. ${ }^{2}$ By holding off for the long haul you could not only miss out on huge profits, but you could even begin to lose money.

### 5.3 Long Term Trading

Because of the short length of this simulation, it really wouldn't be fair to use a strict long-term trading policy but rather a long term swing trading strategy. This strategy is much like Swing Trading, but typically focuses on holding stocks for several weeks to a few months and beyond. This type of trading strategy focuses on trading the indexes, timing of mutual funds or focusing on the technical and fundamental analysis of those stocks purchased. By focusing on the longer-term, it makes it easier to filter out some of the 'noise' common in virtually all trading markets. Because I will be focusing on the long-term profits, a small move against the trend isn't as much of a concern. The profit objective of this stock trading method can be quite large with 20,30 or even 50 percent or greater not being out of the norm. The main thing to consider when looking into investing over the long term is the success of a certain company. I plan to find companies that will make tremendous gains over the course of the simulation. Using fundamental analysis of
the market and interpreting past performances by these companies, I hope for huge gains with little loss due to trading expenses. ${ }^{1}$

### 5.4 Stocks Chosen

## Viacom (VIA)

Viacom is a leading global entertainment content company, with prominent and respected brands in focused demographics. Offering programming and content for television, motion pictures and digital platforms, Viacom's world-class brands include MTV Networks (MTV, VH1, Nickelodeon, Nick at Nite, Comedy Central, CMT: Country Music Television, Spike TV, TV Land, Logo and more than 130 networks around the world), BET Networks, Paramount Pictures, Paramount Home Entertainment, DreamWorks and Famous Music. ${ }^{5}$

In 2006 Viacom split into two corporations, Viacom and the former Viacom known now as the CBS Corporation. The new Viacom is considered to be the "highgrowth" side of the much larger former Viacom and therefore a promising investment. Viacom has made many strides since developing their new company. A prime example of this occurred in February of 2007 In February, Viacom ordered leaked copyrighted video clips be taken off of the video sharing service Youtube due to claims of no compensation for the violation of their own copyright. On February 21st Viacom publicly announced they would be offering free online access to their own material through Silicon Valley's distributor joost thanks to a thorough content licensing deal. In addition, Viacom entered into a 50-50 joint venture with Indian media company Global Broadcast News to form Viacom-18 which will house Viacom's existing channels in India - MTV, VH1 and Nick as well as Network-18's Bollywood movie business. All future Viacom content for India
and new ventures such as a Hindi entertainment channel and a Hindi movie channel would be housed in this JV. Looking at this data from earlier this year, I conclude that this company will not only profit, but that it is a great investment for Long Term Trading because it is such a successful corporation. ${ }^{5}$

## Exxon Mobile Corporation (XOM)

Exxon Mobil Corporation, formerly Exxon Corporation, through its divisions and affiliates is engaged in exploration for, and production of, crude oil and natural gas, manufacture of petroleum products and transportation and sale of crude oil, natural gas and petroleum products. It is a manufacturer and marketer of commodity petrochemicals, including olefins, aromatics, polyethylene and polypropylene plastics and a range of specialty products. It also has interests in electric power generation facilities. Affiliates of Exxon Mobil conduct research programs in support of these businesses. It has several divisions and affiliates, many with names that include Exxon Mobil, Exxon, Esso or Mobil. It operates in three segments: Upstream, Downstream and Chemicals. ${ }^{5}$

Both the Exxon Corporation and the Mobil Corporation trace their roots to the Standard Oil Company, which was founded by American industrialist John D. Rockefeller in 1870 and which dominated the U.S. energy industry in the early 20th century. Rockefeller and his associates created the Standard Oil Trust in 1882 to unify many oil companies throughout the United States (see Trusts). Standard Oil soon owned 90 percent of the oil refineries in the United States and held a virtual monopoly on marketing facilities. In 1892 the Ohio Supreme Court ordered the Standard Oil Company of Ohio to separate from the trust and become an independent business. As a result, the
trust dissolved and the executives of the Standard Oil conglomerate reorganized and consolidated their enterprise into 20 companies. These included Standard Oil of New Jersey, also known as Jersey Standard, which changed its name in 1892 to Standard Oil Company (New Jersey), and Standard Oil Company of New York, also known as Socony. In 1899 Jersey Standard became the central holding company for the entire organization. The Exxon Corporation evolved from Jersey Standard. In 1919 Jersey Standard bought half of Humble Oil \& Refining Company of Texas. Humble grew into a major U.S. oil company and merged with Jersey Standard in 1959. From 1917 to 1937 Jersey Standard significantly expanded its oil-production facilities and its holdings in South America, Europe, Africa, and Asia. Beginning in the 1920s, Jersey Standard used the name Esso (derived from the initials of Standard Oil) for many of its products and service stations. Eventually, many of the original affiliates of the Standard Oil Trust objected to Jersey Standard's use of Esso. After several court rulings against its use of the name, Jersey Standard renamed itself Exxon in 1972 and stopped using the name Esso in the United States. It continued to use the Esso name in many other countries. In December 1998 Exxon announced its plans to acquire Mobil and form one company, called Exxon Mobil Corporation. The merger, completed in November 1999 and valued at $\$ 81$ billion, was the biggest industrial consolidation in U.S. history. ${ }^{7}$

As the largest traded integrated oil and Gas Company in the world at $\$ 417.7$ billion and the number one in the world in proven oil and gas reserves, this company is an ideal stock for a long term investor. As we enter the summer season, oil and gas purchases are the highest out of the whole year. I expect that this stock will win big this summer and turn out a good profit. ${ }^{4}$

## Toyota Motor Corporation (TM)

Toyota is a Japanese-based car corporation ranked the world's largest automaker by sales in 2007. Sakichi Toyoda, a prolific inventor, created the Toyoda Automatic Loom Company based on his groundbreaking designs, one of which was licensed to a British concern for 1 million yen; this money was used to help found Toyota Motor Company, which was supported by the Japanese government partly because of the military applications. The Japanese relied on foreign trucks in the war in Manchuria, but with the Depression, money was scarce. Domestic production would reduce costs, provide jobs, and make the country more independent. By 1936, just after the first successful Toyoda vehicles were produced, Japan demanded that any automakers selling in the country needed to have a majority of stockholders from Japan, along with all officers, and stopped nearly all imports. ${ }^{5}$

Toyoda's car operations were placed in the hands of Kiichiro Toyoda, Sakichi Toyoda's son; they started experimenting with two cylinder engines at first, but ended up copying the Chevrolet 65 -horsepower straight-six, using the same chassis and gearbox with styling copied from the Chrysler Airflow. The first engine was produced in 1934 (the Type A), the first car and truck in 1935 (the Model A1 and G1, respectively), and its second car design in 1936 (the model AA). In 1937, Toyota Motor Company was split off. From 1936 to 1943, only 1,7,57 cars were made - 1,404 sedans and 353 phaetons (model AB), but Toyoda found more success building trucks and busses. The Toyota KB, a 4 x 4 produced starting in 1941 , was a two-ton truck similar to the prewar KC ; it had a
loading capacity of 1.5 tons and could run up to about 43 mph . The GB was based on the peacetime, 1.5 ton G1 truck, which in turn was based on the Model A1 cars.

Toyota began its international sales with the introduction of the Toyopet and the Land Cruiser to the American market. The Land Cruiser seemed to fair well while the Toyopet was later withdrawn. Toyota began to design cars specially designed for the American market. This strategy led to perhaps the most successful car on the market, the Camry. The Toyota Camry, coming from a Japanese word similar to "crown," was released in 1983 to replace the Toyota Corona. This humble original was later used to model the luxurious Lexus ES3000 and the full-sized highway cruiser better known as the Avalon.

As sales grew and the company needed to create a large-scale factory basis in homeland Japan, Toyota City was founded. Toyota City sprung from Koromo Town, a thriving silkworm center in the late 1800s and early 1900s. As the demand for raw silk fell, the city declined, until in 1934 it invited the newly formed Toyota to center there. The name was changed from Koromo to Toyota in 1959. The population is now 25 times its 1930 level, at $350,000 .{ }^{5}$

Toyota owns and operated Toyota, Lexus, Scion and many other divisions and companies. Toyota, in the year 2006, had large enough profits to buy out almost any large motor company including GMC Truck. ${ }^{5}$

With the introduction of the hybrid Camry and Prius models, Toyota is leading the way in introducing this concept to the American People. In the age of rising gas
prices, smart and affluent people know the value of a hybrid car in the long run, just like a long term investment. In entering the summer season where gas prices normally skyrocket through the roof, I foresee a large increase in hybrid sales. Summer sales have always been a big showing in the Auto Industry. ${ }^{5}$

## Wachovia Corporation (WB)

Wachovia Corporation, based out of Charlotte, North Carolina, is the fourth biggest bank in the United States. Operating in 22 states, they offer services such as asset management, wealth management, and retail brokerage. Wachovia intends to build 30 branch banks in the nation's most populous state this year and convert Golden West's California locations to the Wachovia brand. The company expects to have about 170 branches in California by the year's end. Chairman and Chief Executive G. Kennedy Thompson said last month that the California network could ultimately encompass 750 branches. In February 2007, the Company acquired a majority interest in European Credit Management Ltd., a fixed-income investment management firm based in the United Kingdom.

Wachovia bank is up and coming and is notorious for buying out its competitors. Based on this these facts and the overall growth of the bank, I believe that this stock will grow as the new branches are erected throughout the year. This company is always moving forward with acquisitions and merges that enable it to be the fourth largest bank in the country, behind Bank of America, J. P. Morgan Chase \& Company and Citigroup. I believe this is a perfect long term investment opportunity because of the opening of new branches throughout the country. ${ }^{5}$

### 5.5 Trades

By week 5 of the simulation, I noticed that my stocks have not been fairing as well as I had originally hoped. Since we were more than half way through this project, I decided to make a few trades to strengthen my stocks. I decided to sell 80 shares of VIA, despite the fact that it had lost value and I lost profit. It has been consistently weak and I wanted to put more money towards my stronger stocks. TM on the other hand, has been consistently doing well. For this reason, I am going to hop on this opportunity to gain from this growing stock by purchasing 75 shares. Exxon Mobile has done very little thus far, making almost no progress or loss. I sold 50 shares for a profit of $\$ 4.00$. Wachovia Corporation has also done very little so far, so I have sold 32 shares. I have put all of the spare cash into purchasing as many TM shares as I could.

| Date | Symbol | Price | Bought/Sold | Profit/Loss |
| :---: | :---: | :---: | :---: | :---: |
| $6 / 22 / 2007$ | VIA | 41.71 | -80.00 | -3469.49 |
| $6 / 22 / 2007$ | TM | 124.99 | 75.00 | 0.00 |
| $6 / 22 / 2007$ | XOM | 84.30 | -50.00 | -4126.70 |
| $6 / 22 / 2007$ | WB | 53.12 | -32.00 | -1691.20 |

Table 5.5.1, Trades made on 6/22/2007

On 7/19/2007, I decided to make another trades due to the lack of performance in my stocks. Recently Exxon Mobile has been on the rise big time, as all major oil companies seem to be doing right now. For that reason I have sold a hundred shares of TM and VIA to fund the purchase of 182 shares of XOM. I believe that although I initially will lose money, Exxon Mobile is my best stock and is the one I believe in. Wachovia has shown some steady increase so I have not traded any shares.

| Date | Symbol | Price | Bought/Sold | Profit/Loss |
| :---: | :---: | :---: | :---: | :---: |
| $7 / 19 / 2007$ | VIA | 43.31 | -100.00 | -4345.69 |
| $7 / 19 / 2007$ | TM | 123.55 | -100.00 | -12170.45 |
| $7 / 19 / 2007$ | XOM | 91.54 | 182.00 | 0.00 |
| $7 / 19 / 2007$ | WB | 51.84 | 0.00 | 0.00 |

Table 5.5.2, Trades made on 7/19/2007

### 5.6 Results

## Week 2

This week I invested $\$ 50,000$ into my four companies. I bought 280 shares of Viacom Inc., 102 shares of Toyota Motor Corporation, 150 shares of Exxon Mobile Corporation and 232 shares of Wachovia Corporation. At the end of the day on Friday my stocks were up by $\$ 83.20$. I will wait a full week before making any new observations or decisions about trading. My strategy requires much patience and I cannot be fooled into making a foolish trade too early. ${ }^{5}$

| Week 2 |  |  |  |  |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Profit |
| $6 / 1 / 2007$ | TM | Buy | $\$ 122.94$ | 101 | $\$ 12,416.94$ | 0 | $\$ 12,416.94$ | $\$ 0.00$ |
| $6 / 1 / 2007$ | VIA | Buy | $\$ 43.89$ | 280 | $\$ 12,289.20$ | 0 | $\$ 12,289.20$ |  |
| $6 / 1 / 2007$ | WB | Buy | $\$ 54.51$ | 232 | $\$ 12,646.32$ | 0 | $\$ 12,646.32$ | Total Asset |
| $6 / 1 / 2007$ | XOM | Buy | $\$ 84.22$ | 150 | $\$ 12,633.00$ | 0 | $\$ 12,633.00$ | $\$ 49,985.46$ |

Table 5.6.1, Week two trades

## Week 3

This week I watched my stocks but made no trades. I lost $\$ 907$ this week with TM being the only winning stock with a gain of only $\$ 19.18$. My Total amount of money invested is now $\$ 49140.46$. Viacom lost $\$ 434$, XOM lost $\$ 181.50$ and WB lost $\$ 310.88$. In the news, Viacom International Inc. has signed a new lease for more than 400,000 square feet of office space at 345 Hudson St. in Manhattan. The 17-story 345 Hudson
building was constructed in 1931 and totals 797,477 square feet in the Hudson Square district. This healthy growth of the corporation should bring gains when it opens in November, but until then I suspect to see loss in profits. Toyota Motor Corporation's sales in China jumped 87 percent in May, driven by the popular Camry sedan, and it was discussing a second car factory with Guangzhou Automobile in anticipation of continued strong growth in demand. Excluding Hong Kong, Chinese vehicle sales at Japan's top automaker came to 33,000 units last month, a spokeswoman said on Thursday. For the first five months of 2007, sales surged 76 percent to 176,000 units. Exxon Mobil must pay New Jersey for lost recreational opportunities due to contaminated waterfront refineries, a state appeals court ruled Wednesday, reversing an earlier decision by a trial judge. The decision is a setback for Exxon Mobil, which has worked to clean sites in Linden and Bayonne since 1991. When the company balked at a state request to also pay for the loss of recreational opportunities, such as fishing and bird watching, New Jersey sued. Wachovia Bank announced that they plan to double its private banking group in a bid to obtain wealthy customers as the nation grows more affluent. This plan rivals its top well-diversified competitors of Bank of America, Citigroup and JPMorgan Chase \& Co. ${ }^{5}$

## Week 3

| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total <br> Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $6 / 8 / 2007$ | TM | Hold | $\$ 124.45$ | 0 | $\$ 0.00$ | $\$ 152.51$ | $\$ 12,569.45$ | $\mathbf{( \$ 6 3 5 . 0 5 )}$ |
| $6 / 8 / 2007$ | VIA | Hold | $\$ 43.17$ | 0 | $\$ 0.00$ | $(\$ 201.60)$ | $\$ 12,087.60$ |  |
| $6 / 8 / 2007$ | WB | Hold | $\$ 52.98$ | 0 | $\$ 0.00$ | $(\$ 354.96)$ | $\$ 12,291.36$ | Total Asset |
| $6 / 8 / 2007$ | XOM | Hold | $\$ 82.68$ | 0 | $\$ 0.00$ | $(\$ 231.00)$ | $\$ 12,402.00$ | $\$ 49,350.41$ |

Table 5.6.2, Week three trades

## Week 4

This week my stock companies saw a lot of action in the news. Viacom reported that its revenues from 2007 showed a significant drop from 2006. Viacom representatives reported that TV advertising should see a slight rise in 2007. According to Group M figures, we should see another slight drop in 2008. Although the forecast for this company does not look bright according to the figures, I am going to stay with my longterm strategy and keep my shares for now. Toyota announced on Friday that it is offering up to $\$ 3,500$ in rebates or interest-free loans for five years on its redesigned Tundra pickup truck in United States. Toyota is also offering a special three-year lease deal of $\$ 259$ a month on the Tundra with a down payment of $\$ 2,499$. These incentives should boast significant gains in the near future. It is said that these promotions are going to run through July, so I plan on concentrating more money to Toyota soon. News looked bleak for Exxon Mobile, between losing its bid in Brazil and bad publicity with Greenpeace regarding Exxon Mobile's view on Global warming. But the company did great in the marketplace. It made significant gains and was added to a popular stock picker list. Wachovia made slight gains on the week, showing a steady uprising. They announced that they will be opening call centers in the Philippines, improving the telephone services for customers across the world. ${ }^{5}$

I want to keep my current stocks and wait for a while. These stocks show a lot of potential and none are far worse than the others. My strategy has worked thus far and should pay off well in the end.

| Week 4 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Total Profit |
| 6/15/2007 | TM | Hold | \$125.45 | 0 | \$0.00 | \$101.00 | \$12,670.45 | \$309.59 |
| 6/15/2007 | VIA | Hold | \$43.55 | 0 | \$0.00 | \$106.40 | \$12,194.00 |  |
| 6/15/2007 | WB | Hold | \$54.05 | 0 | \$0.00 | \$248.24 | \$12,539.60 | Total Asset |
| 6/15/2007 | XOM | Hold | \$85.94 | 0 | \$0.00 | \$489.00 | \$12,891.00 | \$50,295.05 |

Table 5.6.3, Week four trades

## Week 5

This week I made a decision to trade my stocks. Normally, I would have waited longer, but for the sake of the project I must trade now. I concentrated most of my stocks towards TM, my most successful company. The record of the trade is seen here.

Viacom announced the release of an anti-piracy technology with AT\&T. This has drawn a lot of negative feedback. The Electronic Frontier Foundation, for example, released a statement scorning AT\&T as the overlord of telecommunications, accusing the company of secretly conspiring with the US National Security Agency to help them glean information about the customers of its network. This technology, however controversial, will ultimately lead to a decrease in piracy and help secure their networks. XOM talked to Venezuela about the oil contracts. As the deadlines approach, XOM needs to decide whether the terms are favorable to stay or go elsewhere. ${ }^{5}$

As it stands now, I feel that I am in a position where my stocks can really soar. I feel good about TM and I hope the upward trend continues through this project. I hope to the same in my other stocks as well.

| Week 5 |  |  |  |  |  |  |  | Total <br> Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | $(\$ 46.46)$ |
| $\$ 12,623.99$ | $(\$ 713.83)$ |  |  |  |  |  |  |  |
| $6 / 22007$ | TM | Hold | $\$ 124.99$ | 0 | $\$ 0.00$ | $(\$ 12007$ | VIA | Hold |
| $\$ 41.71$ | 0 | $\$ 0.00$ | $(\$ 515.20)$ | $\$ 11,678.80$ |  |  |  |  |
| $6 / 22 / 2007$ | WB | Hold | $\$ 53.12$ | 0 | $\$ 0.00$ | $(\$ 215.76)$ | $\$ 12,323.84$ | Total Asset |
| $6 / 22 / 2007$ | XOM | Hold | $\$ 84.30$ | 0 | $\$ 0.00$ | $(\$ 246.00)$ | $\$ 12,645.00$ | $\$ 49,271.63$ |

Table 5.6.4, Week five trades

## Week 6

This week my stocks didn't do very well in the market. Viacom, Wachovia Bank, and Exxon Mobile all lost money while Toyota Motor corporation only went up by roughly a dollar. Overall the net loss was $\$ 109.40$ from last weeks amount invested. All of this data is in table 6.29 below. This week Paramount pictures, a division of Viacom, made a deal with a UAE-based real estate and tourism investment and development company called Ruwaad Holdings. They plan to open a theme park with a budget of $\$ 2.5$ billion. Paramount won't contribute any funds, but will provide access to Paramount Pictures' library. This week Toyota announced plans for a hybrid Lexus. The model is expected to be priced between the $\$ 40,310$ IS sedan and the $\$ 68,520$ RX400h hybrid sport utility vehicle, making it the cheapest hybrid under the Lexus brand. Toyota also has said it wants to double the number of hybrid models it offers from the current seven to help it reach a goal of selling 1 million units of the fuel-efficient vehicles annually soon after 2010. Exxon Mobil has announced that a new addition to its Mobil Pegasus Series of high-performance lubricants for natural gas engines, Mobil Pegasus 1005, will be introduced worldwide. Formulated with base stocks and advanced additive technology, Mobil Pegasus 1005 is designed to provide today's high output, lowemissions four cycle gas engines with protection while also delivering superior
performance for older model engines. The Wachovia Foundation, along with the John D. and Catherine T. MacArthur Foundation and the Opportunity Finance Network, will award $\$ 42$ million to community development financial institutions that serve lowincome individuals in the United States. A national committee will choose two CDFI organizations to receive $\$ 8.25$ million in grants and investments. ${ }^{5}$

| Week 6 |  |  |  |  |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Profit |
| $6 / 29 / 2007$ | TM | Buy | $\$ 126.24$ | 75 | $\$ 9,468.00$ | $\$ 0.00$ | $\$ 22,218.24$ | $(\$ 994.05)$ |
| $6 / 29 / 2007$ | VIA | Sell | $\$ 41.46$ | 80 | $(\$ 3,316.80)$ | $(\$ 194.40)$ | $\$ 8,292.00$ |  |
| $6 / 29 / 2007$ | WB | Sell | $\$ 51.75$ | 32 | $(\$ 1,656.00)$ | $(\$ 88.32)$ | $\$ 10,350.00$ | Total Asset |
| $6 / 29 / 2007$ | XOM | Sell | $\$ 84.27$ | 50 | $(\$ 4,213.50)$ | $\$ 2.50$ | $\$ 8,427.00$ | $\$ 49,287.24$ |

Table 5.6.5, Week six trades

## Week 7

This week my total amount of money invested raised about $\$ 700$ from the previous week. Every single stock I had increased in value. My total amount invested is now $\$ 49,983, \$ 125$ less than my original amount invested. Both Toyota Motor Corp. and Exxon Mobile ended the 7 -week period at a higher price than in the first week, while Wachovia Corp. and Viacom went down in price. Toyota hit a high this week of \$127.19, the highest of the entire period. See table 7.6 for this weeks standings.

Viacom subsidiary Neopets, a popular online community targeted at kids and teens, on Wednesday said it plans to begin selling virtual items for real money. Virtual items could become a strong secondary revenue stream for Neopets, which until now has capitalized on its large audience by selling banner advertisements. Neopets currently has more than 40 million registered users around the world, and nearly 12 million unique
visitors come to the site each month to adopt virtual pets, play games, and socialize. Neopets launched in 1999 and was acquired by Viacom in June 2005 for $\$ 160$ million. Toyota sold 212,000 vehicles in the period, up $77 \%$ from a year earlier. Toyota produced its first China-made Camry in May 2006 from a new plant in the southern Chinese city of Guangzhou to compete with models such as Honda Motor Corporation's Accord. By entering a code at a Exxon Mobile web site, which can be found under the cap of specially marked Mobil 1, Mobil 1 Extended Performance and Mobil 1 High Mileage Motor Oil, drivers could win a grand prize of a four-day, three-night trip for two to the 2008 Mobil 1 Twelve Hours of Sebring race, and a fully loaded 2007 Cadillac CTS-V Sedan. The grand prize has an estimated value of $\$ 55,000$. This promotion will surely attract more sales, especially with people driving as often as they do in the summer. ${ }^{5}$

| Week 7 |  |  |  |  |  |  |  | Total <br> Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | $\$ 0.0$ |
| $7 / 6 / 2007$ | TM | Hold | $\$ 127.19$ | 0 | $\$ 0.00$ | $(\$ 9,468.00)$ | $\$ 22,385.44$ | $(\$ 1,275.75)$ |
| $7 / 6 / 2007$ | VIA | Hold | $\$ 42.55$ | 0 | $\$ 0.00$ | $\$ 3,316.80$ | $\$ 8,510.00$ |  |
| $7 / 6 / 2007$ | WB | Hold | $\$ 52.37$ | 0 | $\$ 0.00$ | $\$ 1,656.00$ | $\$ 10,474.00$ | Total Asset |
| $7 / 6 / 2007$ | XOM | Hold | $\$ 86.14$ | 0 | $\$ 0.00$ | $\$ 4,213.50$ | $\$ 8,614.00$ | $\$ 49,983.44$ |

Table 5.6.6, Week seven trades

## Week 8

This week my total amount of money invested raised about $\$ 120$ from the previous week. Both Exxon Mobile and Wachovia increased in value. My total amount invested is now $\$ 50,103$, $\$ 5$ less than my original amount invested. Both Toyota Motor Corp. and Exxon Mobile ended the 7-week period at a higher price than in the first week, while Wachovia Corp. and Viacom went down in price. Exxon Mobile hit a high this week of $\$ 89.62$, the highest of the entire period. See table 7.13 for this weeks standings.

Viacom Inc. has held exploratory discussions to develop theme parks in two regions in China that could also include movie co-production ventures. Executive Chairman Sumner Redstone said he was in "very tentative" talks with Chinese officials to build theme parks in China's richest city, Shanghai, and Changsha. The structure would be similar to a theme park deal in South Korea whereby Viacom licensed its brand to projects, which are financed largely locally. Viacom has recently showed a downward trend in its shares, stemming from its recent ventures in a new office in New York to the development of foreign theme parks. Exxon Mobile had a phenomenal week, as did many crude oil companies managed to do despite the drop in price of crude oil. Exxon Mobile's stock jumped $2.7 \%$ to close at $\$ 89.62$ a share, lifting the company's market capitalization to $\$ 504.85$ billion in the process. Toyota Motor Corporation Corp. will likely start discussing ways to possibly combine manufacturing operations in North America of Hino Motors and Isuzsu Motors. One idea is said to combine manufacturing operations of the two truck companies in North America in building big medium- and heavy-duty trucks and developing demand for them .The Toyota executives believe both Hino and Isuzu maintaining separate manufacturing operations in North America risky and redundant. Toyota holds a $50 \%$ stake in Hino and bought a $5.9 \%$ equity stake in Isuzu last year. Discussions will follow once Toyota and Isuzu know exactly how they would cooperate on advanced diesel engine technology. ${ }^{5}$

Given the fact that Exxon Mobile is doing so well, I plan to sell the stocks as the project nears an end. I am going to sell $60 \%$ of my Viacom stock to put towards Exxon. I hope to see Toyota rise out of its slump this week and pay off well at the end of the
simulation. Toyota has steadily risen and I do not see why it shouldn't next week. As for Wachovia, I hope that it will show some activity or I will sell those stocks as well.

| Week 8 |  |  |  |  |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | Profit |
| $7 / 13 / 2007$ | TM | Hold | $\$ 126.30$ | 0 | $\$ 0.00$ | $(\$ 156.64)$ | $\$ 22,228.80$ | $(\$ 1,156.39)$ |
| $7 / 13 / 2007$ | VIA | Hold | $\$ 41.92$ | 0 | $\$ 0.00$ | $(\$ 126.00)$ | $\$ 8,384.00$ |  |
| $7 / 13 / 2007$ | WB | Hold | $\$ 52.64$ | 0 | $\$ 0.00$ | $\$ 54.00$ | $\$ 10,528.00$ | Total Asset |
| $7 / 13 / 2007$ | XOM | Hold | $\$ 89.62$ | 0 | $\$ 0.00$ | $\$ 348.00$ | $\$ 8,962.00$ | $\$ 50,102.80$ |

Table 5.6.7, Week eight trades

## Week 9

This week I made trades on 19-Jul based on the performance of my stocks. Exxon Mobile has shown promise in the recent weeks, so I bought an additional 100 stocks by selling 100 shares of both Viacom and Toyota Motor Corporation. At the end of the week, my total asset, the total amount of money taken out of the project, was about $\$ 10,000$ more than the original amount invested. Both Exxon Mobile and Viacom increased in value.

Viacom wants its MTV Networks' Nickelodeon Kids and Family Group to spend $\$ 100$ million over the next two years to amass a collection of websites focused on casual gaming. Viacom believes that casual games will broaden video games' overall appeal in the long run, attracting many audiences who now avoid or lack interest in more conventional games. Viacom intends to leverage online entertainment to further the popularity of its kids' brands and broaden its online strategy in general. Its casual gaming initiative will feature the media company's Nickelodeon, Noggin, and Neopets franchises. Nickelodeon will debut its first online subscription service, the Nick Gaming Club, while

TheNGames.com will target teen girls. Toyota Motor Corp. lost its position as the world's No. 1 auto seller to General Motors Corp. on a quarterly basis in April-June. Analysts have said Toyota will likely outsell GM for the full year, after the Japanese car maker topped the U.S. Company on a quarterly basis for the first time in January-March. But the race may be closer than expected after GM showed an improvement in the second quarter while Toyota faces challenges in its home market. A takeover of the top position by the Japanese company would end GM's 76-year reign, marking a fresh competitive landscape for the global auto industry. Exxon Mobil Corp. said its second-quarter profit fell 1 percent from a year ago as lower natural gas prices and production declines hurt results. Still, the company's net income of $\$ 10.26$ billion was the fourth-largest quarterly profit ever recorded by a publicly traded U.S. company. The latest profit compared with earnings of $\$ 10.36$ billion in the second quarter of 2006. On a per-share basis, Irving, Texas-based Exxon Mobil reported earnings of $\$ 1.83$ a share in the most-recent quarter, up from $\$ 1.72$ from a year ago, reflecting about 7 percent fewer shares on the market from a year ago because of an ongoing stock buyback program. For the first six months of 2007, Exxon Mobil posted record earnings of $\$ 19.5$ billion, or $\$ 3.45$ a share, up 4 percent from $\$ 18.76$ billion, or $\$ 3.09$ a share, a year ago. Sales fell to $\$ 185.6$ billion from $\$ 188$ billion a year earlier. Wachovia Corp. said Friday that second-quarter profits rose 24 percent as the nation's fourth-largest bank benefited from the acquisition of Golden West Financial Corp. and its growing lending business. The Company said net income rose to $\$ 2.34$ billion, or $\$ 1.22$ per share, compared with $\$ 1.88$ billion, or $\$ 1.17$ per share in the year-ago period. Revenue grew 20 percent to $\$ 8.69$ billion from $\$ 7.26$ billion in the second quarter of 2006. Wall Street expected earnings of $\$ 1.22$ per share on $\$ 8.4$ billion
of sales, according to analysts polled by Thomson Financial. Merger and restructuring expenses cost the company $\$ 20$ million, or 1 cent per share. The bank announced in May that it had agreed to buy A.G. Edwards for $\$ 6.8$ billion in a deal that will create the nation's second-largest retail brokerage. ${ }^{5}$

| Week 9 |  |  |  |  |  |  |  | Total <br> Profit |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Symbol | Buy/Sell | Price | Shares | Proceeds/Cost | Profit/Loss | Asset | $(\$ 311.00)$ | $\$ 9,357.88$ |
| $7 / 20 / 2007$ | TM | Sell | $\$ 123.13$ | 100 | $\$ 12,313.00$ | $(\$ 46.39)$ |  |  |  |
| $7 / 20 / 2007$ | VIA | Sell | $\$ 42.10$ | 100 | $\$ 4,210.00$ | $(\$ 179.00)$ | $\$ 4,210.00$ |  |  |
| $7 / 20 / 2007$ | WB | Hold | $\$ 51.61$ | 0 | $\$ 0.00$ | $\$ 0.00$ | $\$ 10,322.00$ | Total Asset |  |
| $7 / 20 / 2007$ | XOM | Buy | $\$ 92.54$ | 182 | $\$ 16,842.28$ | $\$ 0.00$ | $\$ 26,096.28$ | $\$ 49,986.16$ |  |

Table 5.6.8, Week nine trades

### 5.7 Conclusion

My stocks faired poorly in the market in the short term. In the end, I made a mere profit of $\$ .070$. That is a return of less than $0.0001 \%$. I failed to make my goal of a $10 \%$ return, a profit of $\$ 4998.55$.

In my opinion, I made intelligent decisions based on the constraints of this project and keeping my long term strategies in mind. I believe that if I projected this project over the course of at least 3 months, I would have done much better. Nevertheless, I believe that I executed the idea of long term swing trading well and made good trades.

When I compare my results with those of my partners, I see that the short term and penny stock trading strategies proved to be most profitable. This makes sense because of the short length of the project. Penny stock trading involves a lot of time and cost in trading fees, so I believe that over the long term it would be harder to profit from that strategy. Short term trading could do well, but again the amount of trades could show
a lack of patience and loss in profit. Trading with Zack's numbers is a little harder to gauge because trades are based on the number produced by a group of analysts and computers, so it could in fact be a smart way to invest. But similar to long term trading, Trading with Zack's numbers proved to be a failure over the short term of this simulation.

The following are the graphs and charts that illustrate the performance overall and of each stock.


Figure 5.7.1, Overall Profit vs. Time


Figure 5.7.2, $S$ \& $P 500$ performance during simulation

Above are the plots of my overall profit and then the performance of the S\&P 500 index. The plots are very similar, both having peaks around 6/17/2007 and low points on $6 / 27 / 2007$. I feel that from this data that I played the market well, especially since I showed a profit in the last couple weeks of the simulation while the $\mathrm{S} \& \mathrm{P} 500$ index declined.

Profit vs. Time (TM)


Figure 5.7.3, Profit vs. Time for TM

Profit vs. Time (VIA)


Figure 5.7.4, Profit vs. Time for VIA

## Profit vs. Time (XOM)



Figure 5.7.5, Profit vs. Time for XOM

Profit vs. Time (WB)


Figure 5.7.6, Profit vs. Time for WB

Above are all of the profit graphs for my individual stocks. As you can see, most of them show very radical peaks and lows. WB, for example, showed a huge loss in the first week then came back to show a net profit. TM did very well in the middle of the simulation, and if I had known how the market was going to behave, I would have sold my shares then. XOM, although it is a bit misconstrued but the graph, ended up showing the most gain. The price rose $10 \%$ by the end of the simulation and turned a profit of $\$ 800$ in the last week. Out of all the stocks I chose, VIA was the poorest in performance.

## 6. Conclusions

### 6.1 Did we meet our goals

We feel after this simulation period that we have all gained a fundamental understanding of the stock market. Our goals as stated in chapter one was to gain a fundamental understanding of the stock market, and to gain useful experience, which will help us in our future investment endeavors. While none of us have actually utilized the stock market as of yet, this project provided us with the understanding and the evaluation of various methods of investment which will help us in the future when we do begin investing our own money into the market. Regardless of whether or not our individual goals for investment were achieved, we feel that we have met our overall goal of gaining knowledge of the stock market.

### 6.2 Comparison of Methods

The method we have decided to use for evaluating the success of our individual methods is by looking at our final profits. Due to the varying market prices of our stocks, we all invested slightly lower or higher than the originally planned $50,000 \$$. Considering this we have decided to use the percent gain or loss in profit to evaluate our methods. The table below summarizes our results.

Percent change in Profit

| Method | Percentage |
| :--- | :--- |
| Penny Stocks | $9.77 \%$ |
| Short Term Trading | $9.32 \%$ |
| Zack's Numbers | $7.44 \%$ |
| Long Term Trading | $0.0001 \%$ |

Table 6.2.1. Summary of profits

Based on the figures presented above, It is obvious that the short term trading method provides the greatest return. Surprisingly, we all fared well, with the exception of long term trades, each gaining more than a $7 \%$ profit. We believe that due to our various methods of trading, that simply smart investing could not cause this. When we look back on our trading methods, luck seems to have a large part in our success. We each had a "big gainer" in our stocks, which none of us could have predicted, but once it was recognized we acted upon it and reallocated our money into it. Our final thought on the project would have to be that when you see an opportunity strike in the market, you have to seize it. When a stock begins to rise more than its usual fluctuation, buy more, then sell once it begins to dip more than its usual fluctuation. That is the principle by which we conducted our trades, and with the exception of long term trades (for obvious reasons), we came out prosperous. As stated in the previous sections, we feel we met our goal when it comes to this project, and considering our returns, we are more than confident that when we reach a point in our lives when it is time to invest our own money, that we will make the proper decisions to end up on top of the market.

## References

1. Fundamentals of the Stock Market, Wyss, B. Oneill, McGraw Hill, New York © 2001
2. Graham, Benjamin. The Intelligent Investor. HarperCollins Publishers Inc.: New York, 1973.
3. Gardner, Tom and David. The Motley Fool Investment Guide. Simon \& Schuster publishing: New York, 1996.
4. http://finance.yahoo.com/
5. http://finance.google.com
6. http://www.Zacks.com
7. http://www.nasdaq.com
