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Abstract

This is a study of the stock market, including a basic history and information needed for trading. Basic information that is needed to start inventing is discussed, as well as what options are available for investing. Pitfalls are then discussed in order for the reader to avoid them. A simulation is also done with three companies over a course of 7 weeks. The simulation showed how actual investing works, which can be used in actual investments in the future.

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Chapter 1. The stock market

The stock market, a large collection of companies all trying to make as much money as possible. You may have heard that the stock market is an easy way to make tons of money; this however is not exactly the case. There is more to making money on the stock market than just picking a company and buying shares. There are many decisions one has to make before and after going to into trading. The stock market can be a dangerous place if you do not know what you are doing. As the saying goes, “Luck favors the prepared”.

1.1 Introduction and goals

The purpose of this report is to introduce the stock market and to show how to invest in companies. This was done by traditional research, as well as running a market simulation of a few companies during the duration of this project. There were also certain goals set that were investigated throughout this research process. They are as follows.

The first goal is to understand how the stock market works. This involves learning how the stock market is set up and regulated. The rules and regulations for trading were also investigated. The purpose of this goal was to share in the knowledge needed for later use when real life investment opportunities arise.

The second goal is to learn useful investment strategies and how to notice trends in the market. In order to do this, stock prices of a few companies were recorded during the duration of this project, more on this later. Again, this information is to be further used in real life investments. Trends are very helpful when investing as they may tell you to buy or sell stock at certain times.

The final goal is to learn how to use information to make simulations of personal investments and market trends. This was done by studying three large companies over the course of the project. More information pertaining to this will be given in the section about the simulations.

1.2 History of the stock market.

The stock market has been around for a long time, having its history begin on a small road known as Wall Street. Named after the wall of brush and mud alongside it, Wall Street was a center of trade due to the access to the docks on the Hudson River, and the East River importing businesses. However, it would not be until 1789 that the market we know today would begin to take shape.

The first important milestone was the first meeting of the Congress of the United States that took place in 1789, right after the revolutionary war. The important outcome of this meeting was that $80 million was authorized in war bonds in order to pay for the war. The next step came two years later when Alexander Hamilton opened the first band of the United States and simultaneously offered shares to the public. Now that there were tradable securities, trading began even though there was no organized market. Stocks were traded much like other commodities, as there was an auction everyday on Wall Street. The people running the auction got a commission for every stock or bond they sold. This also held true of the brokers.

Eventually some businessmen got the idea to start another auction; the difference was that they charged lower commissions. The lowered prices meant that people flocked to their auctions instead of the regulated ones. To combat this, 24 Wall Street leaders met and signed what they called “The Buttonwood Agreement” (Little, p.20). These people are considered the original members of the New York Stock Exchange. Within their little group, they set up fixed commission rates and agreed to only trade with those in the group. Other market leaders preferred the protection that came with fixed commission rates and the group started to grow. From there, the market started to grow into what we know today.

1.3 Where to begin and other important information

In learning how to navigate through the stock market, there are a few key facts that one must know in order to get off on a good start. Most of the topics discussed in this section should be done before you start your initial investment. The reason for prior preparation stems from the fact that money made from stocks takes time to appear.

The first thing that should be taken care of is ones debt. This can be any type of debt, such as a credit card or mortgage. The reason for this is that when a large chunk of the money is put into stock, it is no longer easily accessible. With the stock market, your money does not accumulate fast enough to pay for your bills, especially with interest rates. Therefore, paying off debt will become more and more difficult as the interest rate causes your debt to continue growing.

The next thing to do is to check how much money you have available. The reason behind this is that the stock market usually has a lower risk factor the longer the person owns it. Therefore, money that would be needed sometime in the near future should not be used for investing. In addition, the length of time that one should be financially secure differs with the type of investing that one is planning to do. For example, a short-term investment may still be considered a long time, usually between two to three years. A long-term investment may be as long as ten years, if not more.

After one has done the first two steps, investment strategies can be considered. Let us say that someone is investing in order to pay for his or her child's college education. The question they need to ask themselves next is how much money they should invest. The two main factors in deciding this are time, and the interest that the stock accumulates. With this information, the future value of an investment can be calculated using the following formulas: $FV = PV(1+i)^n$ (Koch, p.13), and $PV = \frac{FV}{(1+i)^n}$ (Koch, p.16). In the formulas, FV is the future value and PV is the initial investment. The i stands for interest rate and the n stands for number of years or period. Going back to the example, assume that the person wants to save \$100,000 with an interest rate of 6% and has 15 years in order to accomplish this goal. With this information, it can be calculate that the initial investment needs to be \$47,727. The following table could also have been used to figure out the appropriate amount to invest.

Rate	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
Year											
1	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110	1.120
2	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210	1.232	1.254
3	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	1.368	1.405
4	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	1.518	1.574
5	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	1.685	1.762
6	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	1.870	1.974
7	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	2.076	2.211
8	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	2.305	2.476
9	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.558	2.773
10	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	2.839	3.106
11	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853	3.152	3.479
12	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138	3.498	3.896
13	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452	3.883	4.363
14	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797	4.310	4.887
15	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177	4.785	5.474
16	1.373	1.605	1.873	2.183	2.540	2.952	3.426	3.970	4.595	5.311	6.130
17	1.400	1.653	1.948	2.292	2.693	3.159	3.700	4.328	5.054	5.895	6.866
18	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.544	7.690
19	1.457	1.754	2.107	2.527	3.026	3.617	4.316	5.142	6.116	7.263	8.613
20	1.486	1.806	2.191	2.653	3.207	3.870	4.661	5.604	6.727	8.062	9.646
21	1.516	1.860	2.279	2.786	3.400	4.141	5.034	6.109	7.400	8.949	10.804
22	1.546	1.916	2.370	2.925	3.604	4.430	5.437	6.659	8.140	9.934	12.100
23	1.577	1.974	2.465	3.072	3.820	4.741	5.871	7.258	8.954	11.026	13.552
24	1.608	2.033	2.563	3.225	4.049	5.072	6.341	7.911	9.850	12.239	15.179
25	1.641	2.094	2.666	3.386	4.292	5.427	6.848	8.623	10.835	13.585	17.000
30	1.811	2.427	3.243	4.322	5.743	7.612	10.063	13.268	17.449	22.892	29.960
40	2.208	3.262	4.801	7.040	10.286	14.974	21.725	31.409	45.259	65.001	93.051

(Koch, p.15)

Table 1: Returns over time

Lastly, an investor should know how much he or she is making. To do this, they need to find the return on investment, or how much you made based off the initial investment. In order to find this number, you need the amount that was made on the market and how much you initially invested. Then using the equation below you can compute the percentage of money that was made on the stock market (Koch, p.27).

$$ROI = \frac{Return - Investment}{Return} * 100$$

Chapter 2 Types of investments

There are different ways to invest, each with their advantages and disadvantages. Some options may have a higher return rate but in exchange may end up losing money in the end. Each method should be considered when building a portfolio as to lower the risk of losing money. It is always a good idea to have a mixture of each type to act as security blankets.

2.1 Stocks

Common stock is the type of stock that the common investor will use. This is because this type of stock has no limitations on who can buy and own it. The Downside is that the owners of this stock have the last claim on assets when the company goes under. This is opposed to preferred stock owners, who get more money than the common stock holders do. They also are paid first and have a higher priority on assets when the company becomes bankrupt. In exchange for the higher income, preferred stock owners have no residual rights. This means that after they receive their dividends they do not receive any residual profit that the company makes, that is reserved for the common stocks. Because of this, preferred stocks are usually bought by companies, this is because they receive tax breaks and there for can make money through the preferred stocks.

Stock exchanges are responsible for the fair trade of stock between companies. Two examples of these exchanges are the New York Stock Exchange (NYSE) and the American Stock Exchange (Amex). The New York Stock Exchange is the largest and most well known exchange in the current market. These exchanges allow trade to go on between companies that are part of the group and have regulations that hinder unfair trade practices.

There are also indexes that keep track of the large companies within the exchanges. For example, the Dow Jones follows 30 of the largest companies in the NYSE and is usually used as a benchmark for how the stock market is behaving. There are many other indexes such as the S&P 500 and the NASDAQ. Each index follows its own set of large companies and exchanges.

Stock also comes in different types of orders; the most common are market, limit and stop orders. A market order is an order that sets either buying or selling stock at the best market price to be the highest priority. This order is usually carried out within a few minutes, and the investor has control on which company stock to buy or sell as well as the quantity bartered.

Limit orders are orders to buy certain stock at a set price or lower, or to sell the stock at a set price or higher. The limit that the investor sets is usually not at the market price. A stop order is similar to a market order except that it happens after certain requirements are met. The order waits until the market price reaches a value set by the investor. Once this price is reached, the stop order then becomes a market order. There are other types of orders that are combinations of the common types, and are considered advanced investing techniques.

Penny stocks are stocks that sell at low price, usually around a few dollars. These are good if you are unsure about a company but would still like to invest in them. The down side however is that the stocks are much more volatile than large stocks. They do however are easier to acquire with a smaller initial investment. Because of this, penny stocks are usually favored by speculative investors.

2.2 Alternative methods of investment

There are also other ways to invest other than single stock, such as bonds. Bonds are a type of certificate that states that a quantity of debt and an interest rate or rates and a date. On the specified date, the owner of the bond exchanges the bond for the debt specified plus the interest accumulated. In this sense, a bond is similar to a bank loan, though you are the one making the money instead of the bank. The downside to bonds is that they only return a certain amount of money, as opposed to stocks that may have a huge return on investment. In addition, bonds only last for so long, as opposed to stocks, which may last indefinitely. On the other hand, bonds are guaranteed a return on investment, unlike stocks.

For the most part, bonds are safer investments than stocks, but this is not always true. When the economy is goes through a period of high inflation, bonds quickly lose value and it is possible to lose money instead of earning any. This is because of the constant amount of money created each year. The same sum would decrease in value each year due to inflation, thus making the purchasing power of the money earned less and less. Eventually the economic value of the money earned may be less than the initial investment. In this case, it would be better to buy stocks instead of bonds.

Lastly, mutual funds are a combination of stocks and/or bonds, usually managed by a third party. The positive side of the funds is that the owner has a diverse collection of stocks or bonds. The down side is that each stock invested in a company is rather small. Therefore, when a certain company does well, it does not change the overall earnings of the funds by a significant portion. In addition, the funds are subject to some fees that normal stock and bonds are exempt from.

Chapter 3 Investment strategies

Now that the basic information has been discussed, how does one follow the stock market and build one's portfolio? Many pitfalls need to be avoided while building your portfolio, there are also many people who will make it difficult.

3.1 Outside Help

An important fact to know is that the interest of Wall Street and the financial media do not always coincide with those of investors. This can be seen in the story of Mike Mayo, the former banking analyst for the Credit Suisse First Boston. In the winter of 1994, he forecasted that bank stocks were bottoming out, which turned out to be true. With this forecast, he told the public to sell their bank stock later in 1999, which is the correct move to make. The benchmark index fell 21% for the remainder of the year. This great forecast and advice would cost Mayo his job, as his supervisors were aligned with Wall Street's interest. Wall Street interests are to drive an investing-banking profit, which means that they have to make the investment-banking clients happy. By telling the public to sell, Mayo had jeopardized Wall Street's interests and was therefore fired.

This is also true for investment firms and advisors, though it depends on how they are paid. For example, if they are fee-only advisors they are paid based on a percentage of your assets that they manage. This means that they are paid based on how much your portfolio is worth, aligning both your interest with theirs. The downside is that they only offer advice and you have to manage your portfolio.

On the other hand, if the advisor is paid on a commission basis, they may be more interested in stock that gives them more money and not you. They may also give ill advice by trying to sell stock that has a higher risk factor because it means that they get a lot of money from the commission. An investment firm may also have a collection of bonds that they are holding onto. Naturally, they will try to sell these bonds, even though they might not be in the best interest of the investor. The most common complaints filed against brokers include “Breach of fiduciary duty, negligence, misrepresentation, failure to supervise, unsuitability, unauthorized trading, omission of facts, churning, margin calls, and on-line trading” (Swedroe, p.71). The goal of these advisors is to create fees so that they are paid, not to make you money.

Thankfully, some greedy managers have been discovered. The National Association of Securities Dealers or NASD has put together the following grievances that have occurred a few years ago.

- In 2000, there were 5,558 new matters filed with the NASD and approximately 600 new matters filed with the NYSE. Given the number of investors and ethics of brokers, it is apparent… that most investors (and their advisors) do not know that they may have claims against their brokers.
- Recently there has been an increase in the number of claims filed with the NASD. Total filings for 2001 were projected to be over sixty-seven hundred. This is still far less than the number of investors who have claims.
- Investors prevail at the NASD approximately 54 percent of the time. This number drops to 45 percent for cases before the NYSE.
- When investors are not represented by attorneys, the odds of prevailing drop by 27 percent.
- The NYSE awarded $161 million to investors in 1998. … If investors knew their rights, this number would be over $1 billion.

- Surprisingly, 49 percent of these awards were not paid because many of the guilty brokers left the industry.
- Most of the relatively few attorneys who specialize in these matters will not take a case unless the losses are at least one hundred thousand dollars. These cases are typically done on a contingency-fee basis, with the layers fee ranging from 33.3 percent to 40 percent. The client pays expenses, which typically run from five thousand to fifteen thousand dollars, mostly for outside experts. Investors with smaller claims can bring them without counsel if they cannot find counsel to assist them.

  (Swedroe, p.72, 73)

As seen from the statistics, many investors are being extorted out of a lot of their money. It would be advised that even if you hire a broker who is aligned with your interests, always know what he or she is doing with your money.

It should also be advised that even though you managed to find an advisor or firm that is aligned with your interests, they might not be able to create as much capitol as the rest of the market. This is due to human error more than their greed. The cause of their error and subsequent loss is due to the immense difficulty to look into the future of the stock market. In fact, many professional managers are fired due to lack of performance. This is due to the following reasons:

- It is very difficult to find investment managers who consistently and add value relative to appropriate benchmarks.
- There was no correlation found between relative performance in one period and future periods.

- There was no evidence that the number of mangers beating their benchmarks was greater than pure chance.

  (Swedroe, p.60)

The difficulty in predicting the future of the stock market will be discussed later.

3.2 The Media

The financial media is not any better than greedy managers are. What the media is concerned with is sales, which means adding a lot of fluff to investing news. They may want you to invest in stock that is not steady so that they can tell you to sell and create more news for you to buy. No form of financial media will tell you to buy and hold diversified stock because they would no longer have any new information to sell investors.

An example of how the media tries to keep its own sales up can be seen in an article by Patrick Regnier of MONEY magazine.

- Every financial publication I know – MONEY, Fortune, SmartMoney, Forbes, and countless others- has dismally underestimated some managers while overhyping others. *In other words, they are selling hype and hope, not valuable insights.*
- A list of the glossy magazines' favorites of five years ago now reads like a memorial to the fallen might-as-well-be-dead. *In other words, yesterday's masters of the universe are today's cosmic dust.*
- Most fund managers are very smart. Unfortunately being smart is not enough. *In other words, the competition is very tough.*
- A manager's skill matters less than the trend he is right or failing to ride. *In other words, markets make great managers.*

(Swedroe, p. 81)

However, some sources do not add needless information to their product. For the most part, theses are books, such as the ones used to research this paper. There are also nuggets of useful information found in the media, though they do not occur as often as they should.

Because many news sources can be damaging to your portfolio, you may want to do your own research into the stock market. One of the first things that you may come across is trends. Trends can be described as patterns seen in the market over different periods. A few things need to be discussed before trends can be utilized to build your portfolio.

3.3 Trends and Fads

The first thing that must be noted about trends is that they are determined by a majority of the investors of the stock market. These leads to the old saying, 'If everyone was jumping off a bridge, would you do it to?' Just because everyone is doing something, it does not mean that the action is the best one to take.

There is however, some predictability in how the market will act, and many people may act upon it. One theory is the Elliot wave theory. Ralph Nelson Elliot stated that the market moves in waves, which could be predicted. He stated that the waves were based on Fibonacci numbers, or numbers that are the sum of the two numbers before it (1, 2, 3, 5, 8, etc). Using this principle, he was able to calculate that there are five waves were the market rises, and three where it falls. An investor could then use this information to buy or sell stock based on the wave. There are however smaller ripples on each wave that the investor must contend with.

There is some mathematical basis for this theory, as well as historical evidence. When taking the ratio of a Fibonacci number with its predecessor, the ratio gets closer as you work with higher numbers to what is called the golden ratio. This ratio can be described as follows “If a point on a straight line divides the line so that the ratio of the longer part to the short part is equal to the ratio of the whole to the longer part, the point is said to divide the line in a golden ratio.”(Paulos, p.40) This ratio can also be calculated to 1.618. Using this information, we can see how Fibonacci numbers occur in the market. During March of 2002, the exchange rate between the euro and the pound was for 1-pound sterling, you received 1.618 Euros in return. The other way around meant that you received .618 pounds for 1 euro. This example shows that Fibonacci numbers do in fact occur in the market place.

Another important topic to avoid while studying trends are fads. Fads can be akin to a herd mentality; this is because most people will follow the group if enough people are into the fad. Try to avoid fads as much as possible, they usually are short-term solutions and tend to clash with balanced portfolios. In this case, listen to the media, as they most likely will try to sell you the newest fad, the hard part is not to buy into it.

Forbes magazine has published an article on fad avoidance and the important bullets to take away from it are seen here.

- “If most folk you know agree with you on a price move or some event’s impact, don’t take this as confirmation you are right. It is a warning; **you are wrong**. Being right requires aloneness, and willingness to let others see you as maybe nuts.”
- “If you read or hear about some investment idea or significant event more than once in the media, it won’t work. By the time several commentators have thought and written about it, even new news is to old”

- “The older an argument is, the less power it has. So, for example, inflation fears may have moved markets in 1994, but sometime early 1995 that view will run out of steam.”
- “Any category of security that was hot in the last five years won’t be in the next five years and vice versa.”

  (Fisher, p.41-42)

The author of this article would later go on to write a book, where he says that while following the heard is a bad idea, it is not a good idea to do the exact opposite of what it is doing.

Continuing on, trends are not always accurate when it comes to determining what will happen in the future. Unlike other areas, stock is much more volatile. An example where past performance maybe used to purchase a commodity can be seen in sports. While past performance in this case can be a sign of how the player will most likely perform, stocks are far too volatile to accurately predict. As such, it is important to keep in mind that past performance may give you an idea of what may happen in the future, it is in no way an accurate prediction.

Many professional writers have also said that past performance means little in the stock market. A few have this to say.

“Jonathan Clements, *Wall Street Journal* columnist: ‘I believe the search for top-performing stock funds is an intellectually discredited exercise that will come to be viewed as one of the great financial follies of the late 20th century’

John Bogle, founder of Vanguard: ‘No matter where we look, the message of history is clear. Selecting funds that will significantly exceed market returns, a search in which hope springs eternal and in which pas performance has proven of virtually no predictive value, is a loser’s game.’

John Rekenthaler, research director for Morningstar, was described as stating that actively managed fund were beginning to show up on his cultural radar as a ‘marketing scam for suckers.’ When asked how to pick a winning und, Rekenthaler responded: ‘There is surprisingly little that we can say for sure about how to find top-notch stock funds. We should have more answers.’ And commenting on whether investors should pay attention to mutual fund advertisements he added: ‘… to be fair, I don’t think that you’d want to pay much attention to Morningstar’s star ratings either’.”

(Swedroe, p.24-25)

The ratings that Rekenthaler mentions is a service provided by a newspaper called the Morningstar. What they do is rate funds using a star system. It was eventually discovered that the rating greatly influenced what the public invested. This can be seen in the study done by Diane Del Guerico and Paula Tkac of the Federal Reserve Bank on Atlanta. The key findings of this study are as follows

- The initiation of a five-star rating results in average inflow over the next six months that is 53 percent greater than normal.
- An upgrade from four to five stars increases the rate of inflows over the next six months by 35 percent.
- Even upgrades from two to three stars and from three to four stars generates positive abnormal inflows.
- A downgrade from five to four stars has a negative impact, though to a much lesser degree. Fund inflows fell from their norm by 8 percent. One reason for the smaller impact of a downgrade is that existing investors might be reluctant to sell as capital gains

taxes are likely to be incurred as a result of a sale. Another reason is that a five-star fund that is on a recommended list might not be removed from that list unless the fund continues to lag in performance.

- Downgrades from three to two stars and four to three stars also generate abnormal negative flow.
- The influence of rating changes is observable virtually instantaneously – demonstrating that investors are paying close attention to the ratings and placing a high value on the predictive ability.

(Swedroe, p. 26)

This study helps to prove that not only are trends a bad idea, but also how the media tries to overhype these funds.

The study goes to show what happened to certain types of portfolios that were based solely on the ratings. A portfolio that had 55 five star rated funds was followed from January 1991 through March 2002. The portfolio was changed based on the ratings, those that were downgraded to four stars where immediately removed, and filled with the new upgraded five stars. At the end of the testing, they found that the portfolio was trailing the market by 5.9 percent per annum, after paying all the charges due to transaction costs. Another study done from January 1, 1995 through September 30, 1998 found that the two and three star funds outperformed the four and five star funds for the entire period.

Due to the popularity of the Morningstar's rating system, many other studies have been done on it. One of them, "The Persistence of Morningstar Ratings", tried to determine if there was any useful information gained from these ratings. The study concluded the following.

- For four- and five-star equity funds, year-to-year persistence is the equivalent of a coin flip. Less than half of all mutual funds rated four or five star at year-end 1997 still held that high rating at year-end 1998. Basically, there is a reversion to a three-star mean.
- Persistence for variable annuities is worse than a flip of the coin. Year-to-year persistence is only about 40 percent.
- Persistence is the worst for taxable bond funds at just over 20 percent.
- For equity funds with just three-year ratings, the year-to-year persistence of ratings was less than 25 percent. Keep in mind when you thing you have discovered a new guru.(Swedroe, p.28-29)

There have been further studies on the system, but all have them have lead to the same conclusion. This is that past performance when it comes to stocks, means nothing when trying to predict the future.

Another study has shown that the past performance of a fund coupled with the rating system actually causes the fund to do poorly in the future. The study, “The Perils of Success”, focused on small-cap managers and the persistence of their performance. They ended up with the following conclusions:

- Trading costs in the form of market impact costs increase.
- Profits from the flipping IPOs (initial public offerings) are no longer as great. Flipping is most prevalent in small-cap funds of fund families such as Fidelity. Fund families typically will allocate a very large portion of their total allocation to one small fund, where it can have a large impact on returns. Two mutual fund companies were recently

heavily fined byte SEC for failure to appropriately disclose the impact of IPOs on the return of their funds.

- Active funds tend to lose their sell discipline as they have to now consider the greater impact of trading costs.
- Fund managers tend to invest less aggressively. With greater assets under management, they have more at stake to lose in the form of fees. They become less willing to risk underperformance (because closet indexers with active management fees), dooming them to mediocre performance.
- The funds have to diversify more in order to limit market impact costs.
- The funds tend to be driven to purchase stocks with larger market caps in order to reduce market impact costs. There is another problem for investors here – style drift. Style drift causes investors to lose control over the risks and expected returns of the portfolio. (Swedroe, p.38-39)

As all of the studies show, the act of trying to predict how the market will act is almost impossible.

3.4 Active Vs Passive Investing

Now that all the pitfalls that are common to make in the stock market have been discussed, the question arises of how do you make money. The problems that most people fall into occur when they engage in active investing. Instead of allowing stocks to return interest over time, active investing calls for buying and selling of stock constantly.

Active investing falls into many of the traps laid out in this chapter. Not only will active investing require a large amount of your time to maintain it is almost impossible to do it yourself.

This forces you to require someone else to manage your funds, which will lead to lose of money in fees to someone else. In addition, because active investing requires the buying of selling of stocks, there will be many fees that will accumulate and cost a large chunk of your profits.

Another down fall created by active investing has to do with returns. With passive investing, you can only get the market returns, this I not true with active investing. Instead, what happens is that returns are decided by the investments, meaning that one may make higher returns than the rest of the market. The problem is that this almost never happens, the majority of active investments do worse than the market, especially after paying taxes and fees. In addition, the rate of returns cannot be guaranteed and is akin to taking a wild guess with respect to what the returns will be.

A good analogy of this can be seen in the following hypothetical situation called “outfoxing the box” created by Bill Schultheis. It is a game that you can choose whether to play. In the game, you are an investor who is shown nine boxes each representing a guaranteed rate of return. The returns represented can be seen in the following table:

%	%	%
12	8	7
6	**10**	14
5	0	12

Table 2: Choices of Returns (Swedroe, p. 118)

You are then given the following choice, you can choose to accept the ten percent return or the boxes will be shuffled around at random, then you get to pick a box but not know what the value is. The average of the values of the boxes comes out to 8.22 percent. In this situation, taking the 10 percent returns is the best choice as it is higher than the average but also guarantees a profit. Doing this is the equivalent of passive investing. On the other hand, with active investing there is a 33% chance that you will do better than the market, but a 56% chance that you will do worse. There is also an 11% chance that you will pick the 10 percent returns.

Furthermore, one most understand the concept of risk. Risk can come in two forms, compensated and uncompensated. Naturally compensated risk can be seen as good while uncompensated risk should be avoided as much as possible. Compensated risk is mostly associated with bonds. On the other hand investing with uncompensated risk can also be seen as speculating. Speculation can be described alongside other types of investing in the following table.

	Appropriate Investments	Example
Capital Preservations	Savings account, money market funds, Patriot bonds, certificates of deposit. U.S. treasuries, grade bonds.	Plan to put a down payment on a house; send a child to college in the next three years; short-term investment-emergency fund for unforeseen events such as layoffs or household repairs; a vacation fund.
Income	Stocks of companies with long histories of paying dividends, municipal bonds, investment-grade bonds with maturities between 5 and 8 years, real estate through REITs.	
Capital Appreciation	Stocks of high-grade companies that are industry leaders with strong financial statements, mutual fund, real estate through REITs	College graduate building wealth; a person more than ten years from retirement.
Speculation	Shorting stock, trading on margin, purchasing companies you do not understand, playing the ponies.	Entertainment.

(Koch, p.47)

Table 3: Investment Table

3.5 Diversifying your portfolio

One way to minimize uncompensated risk and to maximize one's profit is to diversify ones portfolio. This means to have stocks of different risk levels from many different companies. This lowers the risk of underperformance. Diversifying ones portfolio does not mean that there is a hand full of different companies that are being invested in, there must be a larger number to be truly diversified. To have a fully diversified portfolio, most experts say that there should be at least 10 different investments with varying levels of risk, though the levels depend on the person investing preferences.

Diversifying does not protect one from one of the largest pitfalls in investing, one's self. Many people believe that they have private information that will allow them to outperform everyone else. This is not the case, though many people fall into this trap. A series of studies on investor behavior and performance done by the Graduate School of Management, University of California have come to the following conclusions:

- Individual investors: Individual investors underperform appropriate benchmarks. Obviously, on average, they were overconfident of their skills.
- Men vs. Women: Though the stock selections of women do not outperform those of men, women produce higher net returns due to lower turnover (lower trading costs). Also, married men outperform single men. The obvious explanation is that single men do not the benefit of their spouse's sage counsel to temper their own overconfidence. Behavioral economist Meir Statman, a professor of finance at Santa Clara University, attributed both the greater trading activity and the purchasing of riskier stocks by men to overconfidence. 'More so than women, men simply think that they are better at investing

that they actually are. Men also get a thrill from trading, and thrill seeking is likely to be biologically based. Women, on the other hand, often feel intimidated by the market and, therefore, tend to stay put.

- Frequent traders vs. less active investors: Individuals who traded the most (presumably due to misplaced confidence) produced the lowest net returns. The findings of the study by Goetzmann and Kumar were consistent with this theory of overconfidence. They found a positive correlation between turnover rates and lack of diversification: the higher the turnover (reflecting greater confidence), the lower the degree of diversification.
- Individuals who switched from telephone trading with a discount broker to e trading because of their past success. Unfortunately, they performed worse after the switch. Once again, overconfidence led to increased trading, and the greater costs associated with increased turnover led to lower returns.

(Swedroe, p.127-128)

As seen in this chapter, there are many pitfalls that any investor can fall into when trying to invest in the market. It is proven that one's own research and intuition is more valuable that what the media is selling. Also, foretelling the future of the stock market is not possible, even for the most knowledgeable professional. The best way to make a profit is to have a diversified portfolio that is well balanced in terms of risk. The actual amount of risk depends on the person's preferences and how much they are willing to lose in ill-advised actions.

Chapter 4. Company Information

During the duration of this project, three companies were chosen and studied in order to show how the market fluctuates. The companies were chosen for various reasons, though two of them were chosen because of specific events that would occur during the time that they were to be studied. The third company did not have any planed events or new products during the time of study.

4.1 Disney

The first company chosen was Disney, mostly because the company releases many new movies during the summer months. This usually creates lots of money for the company, which should reflect in its stock prices. In addition, this summer would mark the release of Toy Story 3, which has been anticipated by many because the previous movie in the Toy Story universe was released over ten years ago. Also later in the summer, another movie based off a portion of the movie Fantasia called The Sorcerers' apprentice was released.   While not as anticipated as Toy Story 3, its release should be reflected in the stock price of the company.

The company started as a cartoon company called the Disney Brothers Cartoon Studio, started by the Disney brothers Walt and Roy in 1923. The Company would later be changed to the Walt Disney Cartoon Studio at Roy's suggestion. The brothers would start their studio by creating cartoons of a girl known as Alice Wonderland called Alice Comedies. These cartoons were considered state of the art at the time, which led to the brother's next project. The brothers began a new series of cartoons known as Oswald the lucky rabbit in 1927. When they tried to get funds from their distributor, M. J. Winkler, for a second year of the cartoon, they found out that Winkler had hired all of the brother's animators. Since Winkler owned the rights to Oswald, he was trying to create the cartoon without the brothers at a cheaper price.

In retaliation, Walt decided to come up with his own character that he would own the rights to. And thus came the birth of one of the most famous cartoon characters of all time, Mickey Mouse. The first cartoon featuring Mickey was called "Steamboat Willie" and premiered on November 18, 1928 and was immediately loved by the public. After the success of Steamboat Willie, Walt went on to create new cartoons called Silly Symphonies. The company then went through a period of success as every year for the next decade a Disney cartoon won the Academy Award for best cartoon.

The Disney would then go on to make its first full-length animated movie, Snow White and the Seven Dwarves, in 1937. From there the company would make more movies as well as profit from other forms of entertainment, such as televisions. Disney also had a long line of merchandise that sold worldwide. The next decade however was not a prosperous, as World War II was occurring. During this period, Disney was asked to do some propaganda work by the government and this caused them to lose some of their previous view as a comedic cartoon company.

The company rebounded by first releasing its first live action movie, Treasure Island. Then the company would release Cinderella. The company would also go to start new television shows, such as Christmas specials and the Mickey Mouse Club. Once he was making money again, Walt decided it was time to go in another direction; he started to build the amusement park known as Disneyland. The park would go on to open on July 17 1955. With the parks success, the company would create many more films. This success would continue for some time, continuing past Walt's death in 1966. The company under the control of Roy would continue to expand; including the completion of Walt's other park, Walt Disney World. The park would open in 1971, followed shortly by Roy's death a few weeks later.

The company never stopped growing, with more additions to Disney World such as Epcot, and the start of the Disney Channel in 1983. There were also international parks built, such as Tokyo Disneyland in 1983. Disney would eventually also step onto Broadway with The Beauty and the Beast in 1994 and The Lion King in 1997. The following year Disney would start its cruise line, and would expand with another cruise line in 1999. ABC would also be purchased in 1996, and was considered one of the largest purchases of that time.

Today, Disney is still going strong, with multiple Disney channels, countless movies and many more theme parks. The company also has many popular television shows that are loved by countless children around the globe, such as Hanna Montana, Wizards of Waverly Place and Jonas LA. It has also bought other famous companies such as Pixar, creators of Finding Nemo and The Incredibles. Mary Poppins also made her way to Broadway recently, and has had rave reviews from critics.

4.2 Microsoft

The second company chosen was Microsoft. The reason for choosing this technological behemoth was due to the event known as the Electronic Entertainment Expo, or E3. At E3, Microsoft would announce many new games for its video game system, the Xbox 360. This included new information on its newest game based on one of the best-known series of games, Halo: Reach. Microsoft would also release information on a new device known as the Kinect.

Microsoft was started by two friends back in 1975, Bill Gates and Paul Allen. The two friends had always been interested in computers, and even had another company called Traf-O-Data back in high school. Inspired by an issue of *Popular Electronics* that showed the new Altair microcomputer kit just released by MITS Computer, the two friends decided to write a version of BASIC for the machine. Gates would drop out of Harvard later that year in order to code full time, and thus started the company known as Microsoft.

Other companies bought Microsoft's BASIC to use in their computers. These companies include Apple, who used BASIC for their Apple II, and Radio Shack, that used it for their Tandy computers. Bill Gates would also go on to write an article warning of the damages of using pirated software. Allen would also drop out of school at this time in order to completely devote his time to the company.

Microsoft would continue to write software for microcomputers, the next language would come out in 1977, named Microsoft FORTRAN. This was immediately followed by a version of COBOL the following year. These languages were designed for the CP/M operating systems, one of many in the market at the time. By the end of 1978, Microsoft had 13 employees, a sale subsidiary in Japan, and $1 million in revenues.

Following a move from Albuquerque, New Mexico to Bellevue, Washington, IBM would hire Gates and Allen to create an operating system for their PCs. While not the company's first choice, IBM was unable to come to an agreement with Digital Research, another programming company, and were forced to use Microsoft. As Microsoft at this point had only come up with programming languages, they had to come up with their own system. Due to the short time they had to work on the OS, they decided to buy a pre-existing system from Seattle Computer

Products for $75,000. The operating system was named Q-DOS, but would later be renamed MS-DOS after being modified to IBM's specifications. As per the terms of agreement, only Microsoft had the right to sell MS-DOS to other companies and consumers. Due to the popularity of PCs, these turned out to be a gold mine for Microsoft, as their product was incredibly popular.

In 1983, Microsoft would release its first word processing program, named Word 1.0 and was meant to compete with the leader in word processing at the time, WordStar. While WordStar was more expensive and did not use the mouse, some people believed that it was too complicated and was meant to be used by software engineers and not businesses. Word would not become popular until 1986 when version 3.0 was released. With the new improvements, Word quickly became Microsoft's best selling product.

Apple also received help from Microsoft while developing its Macintosh Computer, which was introduced in 1984. The Mac became popular as its graphical user interface was based on icons instead of written commands that IBM computers used. Microsoft would go and create new Mac versions of word, BASIC, and Multiplan. Multiplan is considered the less successful precursor of Excel.

Seeing the popularity of the new graphical user interface, Gates decided that he wanted to build an interface manager that would work on top of MS-DOS. Due to the dominance of IBM in the PC market, other companies decided to back Microsoft in the development of the interface, which would be later named Microsoft Windows. The companies that would fund the development of windows included Compaq, Hewlett-Packard, Texas Instruments, Digital Equipment Corporation, and many others. This forced IBM to use another software program called VisiOn, a similar product already being marketed by VisiCalc, while working to develop its own program, called TopView. Microsoft Windows was plagued with many setbacks during its developmental stages, thus pushing the release date further and further back. When Windows finally came out in 1985, it was not widely accepted due to its slow speed and few applications that it could support.

Following a move to Redmond, Washington in 1986, Microsoft would develop its Excel program to be compatible with Windows thus creating the first application for the system. Microsoft would also purchase a company called Forethought, who had developed the first versions of PowerPoint. Windows 2.0 would then be released in November of 1987. With the already established applications, version 2.0 did much better than its predecessor did and sold over 1 million copies by the end of the year.

With the popularity of Windows 2.0, Microsoft would soon become the leader of software sales, beating out Lotus Development Corporation in 1988. The popularity also had its downside, as Apple sued on the basis that Microsoft had stolen the look and feel of the Macintosh. This lawsuit would be dismissed after 5 years of legislation. Microsoft would close the decade by releasing its Microsoft Office packages, which is still one of its more popular items.

The next big thing that Microsoft came out with would be in 1993 with Microsoft Encarta, which was a multimedia encyclopedia on CD-ROM, and Windows NT, an OS used for Corporate Networks. While the first version of NT, a newer version was released later that year. The new version was much better and won the PC Magazine award for technical excellence in system software and was named best operating system product on 1994. Windows would then get an upgrade in 1995, thus becoming Windows 95.

Microsoft would continue to expand, creating new versions of Windows and even more software. The company would even expand to television, starting its own channel called MSNBC. The channel was devoted to news, and ran 24 hours a day bringing customers breaking news at all hours of the day. Microsoft would also go into the video game console market with the Xbox on November 15 2001, bringing along side it the popularity of such franchises such as Halo and Project Gotham Racing. The Xbox 360 would come to replace the Xbox, being released in November 22, 2005. The Xbox360 is still one of the leaders of video gaming systems and is said to complete its life cycle in 2015, where it will be replaced by a newer system.

4.3 Comcast

Lastly, Comcast was chosen because there should be no sudden change in stock market due to a release of a new product. This company can be thought of as a control in comparison to the other two companies. While the company would have more viewers, mostly due to the popularity of the world cup, this fact should not have changed the price of the market that much. It should also be noted that not all areas are covered by Comcast, so an added area of coverage during the testing period may cause a fluctuation due to new customers. However, this was unlikely to happen, as this event would have most likely taken place before the busy summer months.

Comcast has its roots in a company known American Cable Systems, Inc., which dated back to the 1960's. American served Tupelo Mississippi as a community antenna television, or CATV. What television companies did at that time was mostly serve metropolitan areas where they had more customers. CATV companies had large antennas that were stationed in smaller rural areas. The large antennas would be able to pick up the signals from more populated areas and relay them to the city that they were stationed in.

In 1963, Ralph J. Roberts and his brother Joe would purchase American Cable Systems, Inc. in order to try to expand the business. Not many people in Tupelo were interested in the service provided by the brothers, so they were forced to expand their company to Meridian, Laurel, and West Point, in eastern Mississippi in 1964. They also acquired more franchises in Okolona and Baldwyn, Mississippi the following year. While these expansions brought in new customers, there were not enough customers to deliver a high return due to the cost of setting up a local system.

Roberts then set his sights on Philadelphia, as it had a much larger target population. In 1966, he bid on cable franchises in Abington, Cheltenham, and Upper Darby, which are all located north of Philadelphia. He would then purchase Westmoreland cable and with it four more communities in western Pennsylvania. In order to save money, he used the established Westmoreland system and expanded on it in order to serve the area that he covered. After building a foothold on the covered area, he would expand to six more communities. Roberts then decided to join with the Philadelphia Bulletin newspaper in a joint venture where they would provide television services to Sarasota and Venice, Florida. Ralph would also buy a large franchise that provided "elevator music" in Orlando, Florida with his brother Joe, who at this time was minor partner of American. This would take place in 1968.

With the expanding area of coverage, Roberts decided that American was too generic a name for his company. So in 1969, taking parts of “communication” and “broadcast”, Roberts came up with the new name Comcast and based it in Pennsylvania. With the change in name came a change in operations. In 1970, Roberts sold its Florida operations to Storer Communications and formed a limited partnership with them to purchase Multiview Cable, a franchise serving Hartford County in Maryland.

By using limited partnerships, Comcast was able to grow with minimal use of operating funds, which could then be used to finance acquisitions. Using this money, Roberts acquired a franchise in Denver Colorado in 1970. He would later buy other franchises from the Muzak Corporation, where Joe was an executive vice-president. They would buy franchises in Dallas, San Diego, Detroit and Hartford. With these purchases, Comcast would come to have 40,000 customers.

Even with this high number of customers, there was no more room for growth in the area’s that Comcast was servicing. Roberts also lacked the necessary funds needed to expand. To remedy this situation, Roberts decided to take his company public in 1972. With the necessary funds, Robert would go on to expand to Paducah, Kentucky in 1974. Following this, even more cable franchises were bought in Michigan in 1976. In 1977, Comcast would buy out Storer Communication’s interest in Multiview.

By this time, cable companies had changed from CATV into a service that not only had local channels but specialty programming as well. Some networks also broadcasted large independent stations. However, at this time the government limited exactly what a cable service could provide, some of the time denying channels that people wanted. In order to have the limitations lifted, a Comcast manager named Dan Aaron lobbied for the sake of the company. In 1977, Aaron as a chairman for the National Cable Television Association managed to lift some of the restrictions Comcast faced. With the restrictions lifted, cable only channels were added to the subscription. With these additions, it made Comcast more appealing to customers who lived in metropolitan areas where television was being broadcast.

With this newfound interest, Comcast was able to buy franchises in places where it wouldn't have been profitable before. Roberts's first move was to buy franchises in northern New Jersey in 1978. Other franchises in populated areas in Pennsylvania, Mississippi and Michigan would then be purchased in 1979. More Muzak franchises would be purchase in Indianapolis, Buffalo, Scranton, Pennsylvania and Peoria, Illinois.

1983 would mark an event in Comcast history. With a partnership with a British gambling and entertainment enterprise called Ladbroke, Comcast won a license to establish a cable system in the residential suburbs of London. The reason for this was that most cable licenses in the United States were taken and the rest proved to be unprofitable. The UK however had no cable system setup at the time and was ripe for the taking. This was also because British viewers only had five channels to choose from, which mostly offered government-supported programming.

1984 would also be an important year, as Bell systems was broken up by the government. As a result of the forced brake up, AT&T was broken up into 22 local Bell companies. These Bell companies were originally phone companies, but they had their eye on the cable industry. Luckily, for Comcast, the government had enacted legislation that would prevent telephone companies from taking over the smaller cable industry. Free from the threat from the telephone companies for the moment, Comcast continued to grow through acquisitions, gaining franchises in Maryland, Michigan, Fort Wayne, Indiana and Jones County, Mississippi. Comcast also won the right to serve the densely populated northeast Philadelphia area. Then in 1986 Comcast took over a cable system serving Indianapolis and purchased a 26% share in Group W. Group W was one of the country's largest cable companies at the time. The following year Heritage Communications that serviced northwest Philadelphia was purchased. This made Comcast the leading cable provider in the suburbs of Philadelphia.

The next move Comcast made was to buy investment shares in other cable companies instead of franchises. The first move was to purchase a 20% share of Heritage Communications and a 50% share of Storer Communications in 1988. These purchases brought the total number of customers to over two million. This also elevated Comcast to the fifth largest cable company in the US at that time.

Also in 1988, Comcast decided to get into the telephone market by buying American Cellular Network, or Amcell. Amcell was a cellular telephone business that served New Jersey. This acquisition marked the first time that a cable company could offer telephone services to the public. Two years later in 1990, Ralph would relinquish his chair as president of the company to his son Brian. Brian would start off by getting more franchises in the UK, expanding services in Cambridge and Birmingham. This would bring the customers in Britain to over one million customers.

While the business was booming overseas, some of Comcast's smaller companies were not experiencing the same rate of growth. Instead of allowing Amcell to be beaten by a larger company in the future, Comcast made a deal with the Metromedia Company in 1991. The deal allowed Comcast to purchase Metromedia Company's Metrophone cellular unit for $1.1 billion. This new joint company, formally established in 1992, quadrupled Comcast's potential market to more than 7 million customers.

With new technology available, Comcast set up a five-way international call as a publicity stunt in 1992. While the intension was to get consumer interested in the Comcast phone system, it also managed to scare the telephone companies, who then tried to argue that they had the right to get into the cable industries. With the increased capitol, Comcast took over 50% of Storer Communications. Having a large amount of debt, Storer was then forced to dissolve.

The telephone industry was proving to be profitable, and saw many changes during the 1990's. In 1992, Comcast had already begun testing a phone that would eventually become the Sprint PCS digital cellular technology. In 1994, Comcast would create an alliance that formed the Sprint Telecommunications Venture, renamed Sprint Spectrum LP in 1995. The alliance spent millions in converting existing wireless technology into digital format. By 1997, Comcast's cellular operations on Pennsylvania, New Jersey and Delaware were all converted into the new digital format. Unfortunately, the competition had an edge on Sprint; this forced the companies to sell 10% of the venture to the public. Later in 1998, Comcast would acquire GlobalCom Telecommunications, which was a long-distance company, thus extending the range of the network.

Meanwhile, on the cable front, Comcast bought Maclean Hunter's U.S. cable operations in 1994, thus gaining an additional 55,000 customers. Comcast would continue to buy smaller companies and thus expanding its service area. The market in the UK was not doing nearly as well, so Comcast decided to sell its operations to NTL Inc. for $600 million. Comcast then focused its attention to further expanding its market in the US. While they already had a 13% stake in QVC, Comcast derailed a planned merger of QVC and CBS by increasing its ownership to 57%. Comcast would then join many other companies in joint ventures, which would lead to the formation of channels such as Comcast SportsNet and the purchasing of the majority interest in E! Entertainment Television.

In June of 1997, Microsoft Corporation announced that it would invest $1 billion in Comcast. The reason for this was that Microsoft wanted a cable partner for testing interactive television and high-speed internet. Comcast was the logical choice because it boasted one of the more technologically advanced cable systems in the country. By the end of the year, nearly 70 % of Comcast's customers were serviced by a new hybrid fiber-coaxial cable system.

In ten short years Comcast had gone from a predominantly television company into a diverse company offering many services. Comcast has also expanded on its channel listing as well as technology, now offering hundreds of channels, many in high definition. There is also a service that provides movies and television shows whenever the customer wants them called on-demand. Comcast has had many competitors, including satellite dish companies such as Dish Network as well as other cable companies such as Charter. Regardless of the competition, Comcast is still one of the leaders in television providers today.

Chapter 5 Simulation

The simulation done for this report involved following the three companies over the course of the summer. The simulation started on June 7, 2010 and went for the remainder of the summer with measurements of each week being recorded.

5.1 Looking into the past of the companies

5.1A Disney

Disney has been steadily increasing in price without fluctuating in price in any severe fashion. Most of the noticeable dips in the curve of its history have mostly to do with recessions, and not to do with anything to do with the actual company. As seen in the second graph, Disney fell with the rest of the market during March of 2009. This drop in price was due to the recession at that time.

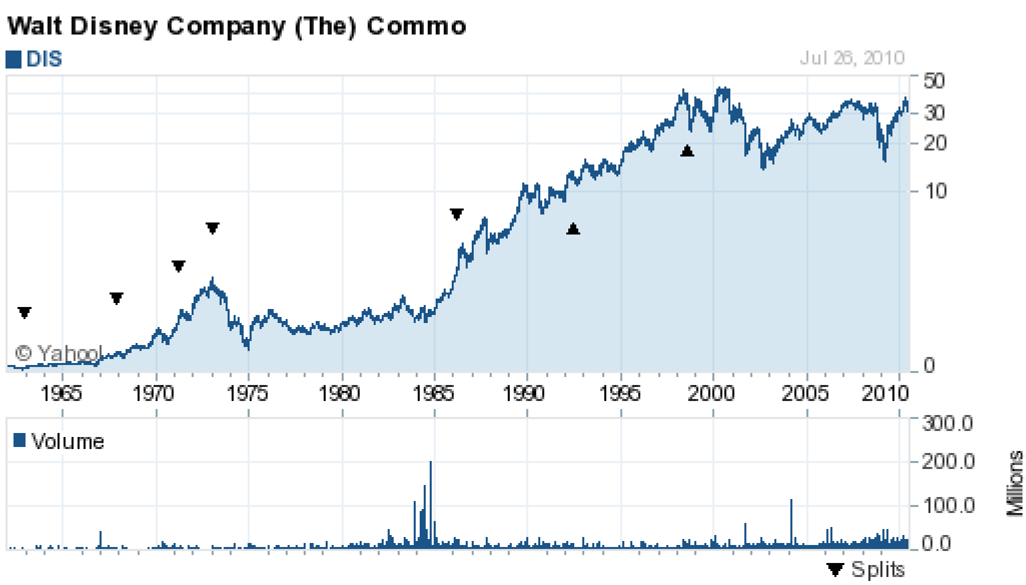

Figure 1: Stock history of Disney

Figure 2: Last year in Stock Prices for Disney

5.1B Microsoft

Similarly, with Disney, Microsoft has been a relatively steady company only really losing money during the resection. The company also got a large increase in its market price right around the turn of the century. This may have to do with the perceived threat of the Y2K bug.

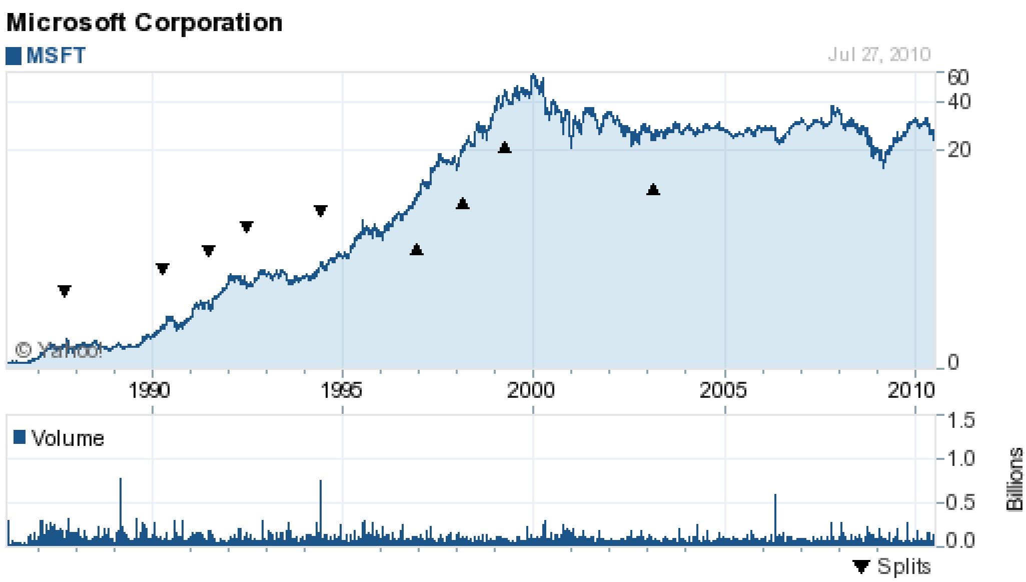

Figure 3: Stock History for Microsoft

Figure 4:Last year in Stock Prices for Microsoft

5.1C Comcast

Like the two companies before it, Comcast saw a drop in price during the recession in 2009. It also saw a drop in 2002 when a rival company that was called Time Warner was bought out. The reason why the price fell instead of rose was the fact in order to buy out the company Comcast needed help. In return for this help, Comcast had to give up an area that it was servicing.

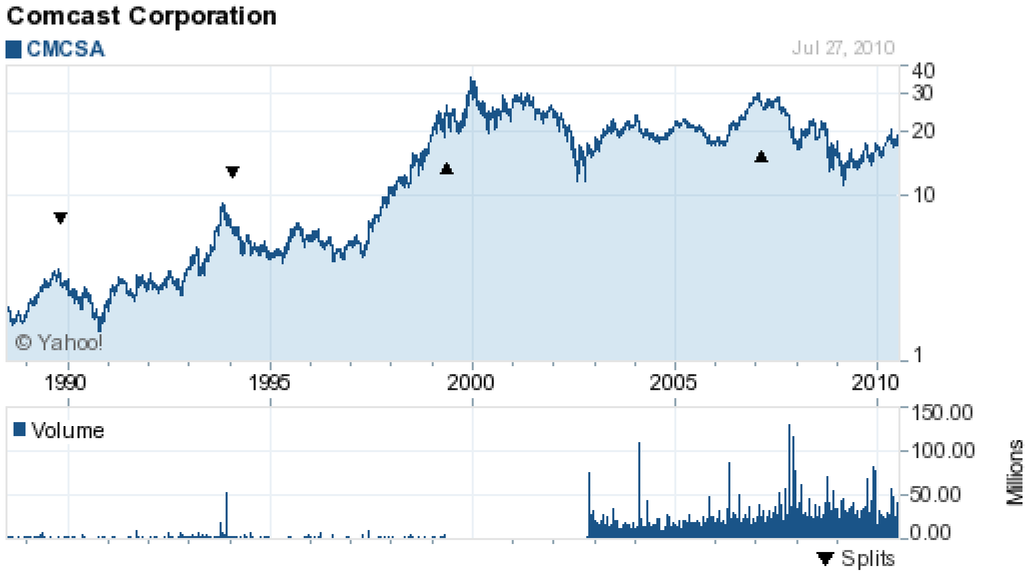

Figure 5: Stock History of Comcast

Figure 6:Last year in Stock Prices for Comcast

5.2 Results of Study

5.2A Comcast

Week	1	2	3	4	5	6	7
Range	17.70-18.23	18.45-18.78	17.56-17.89	17.31-17.75	17.76-18.09	18.48-19.35	19.17-19.49
52 Week	13.04-20.56	13.04-20.56	13.04-20.56	13.04-20.56	13.04-20.56	13.90-20.56	13.95-20.56
Open	17.84	18.68	17.83	17.63	17.89	19.31	19.31
Vol/Avg.	26.50M/31.13M	18.15M/29.03M	32.33M/24.34M	18.69M/24.68M	19.40M/24.52M	27.04M/23.91M	6.92M/24.64M
Mkt cap	51.33 B	52.23B	49.86B	49.27B	50.93B	52.31B	54.68B
P/E	14.09	14.34	13.69	13.53	13.98	14.36	15.01
Div/yield	0.09/2.08	0.09/2.04	0.09/2.14	0.09/2.16	0.09/2.09	0.09/2.04	0.09/1.95
EPS	1.29	1.29	1.29	1.29	1.29	1.29	1.29
Shares	2.82B	2.82B	2.82B	2.82B	2.28B	2.82B	2.82B
Beta	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Inst. Own	60%	60%	60%	60%	60%	60%	60%
Price	18.19	18.51	17.67	17.46	18.05	18.54	19.39
Change	+0.12	-0.07	-0.15	-0.28	+0.21	-0.77	+0.07
Change %	0.66%	-0.38%	-.84%	-1.58%	1.18%	-3.99%	0.36%

Table 4: Comcast Stock Results

Figure 7:Comcast Weekly Market Prices

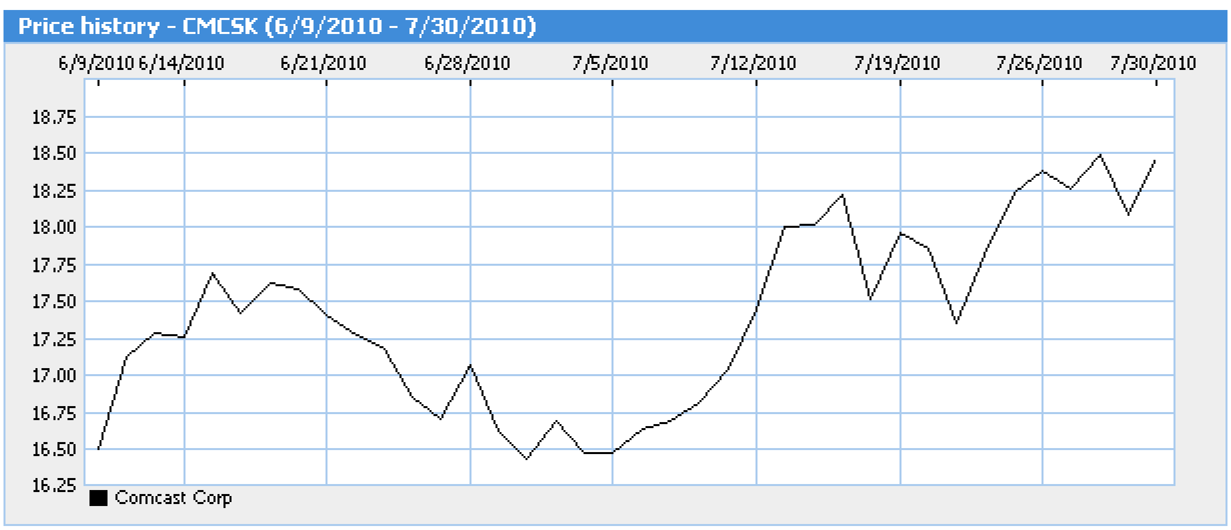

Figure 8: Comcast Real Time Market Prices

Observations

While during the time period, the stock's market price did not fluctuate greatly, there are noticeable difficulties in the graph. The initial rise seen in the graph is due to business in the UK.

What Comcast wanted to do was to buy a majority stake in NBC universal. This news accounts for the rise in market price at that time. The fall in price is also due to this merger, or in this case, complications due to the world cup. NBC was at that time still showing the world cup, and was worried that instead of continuing showing of the games, that Comcast would force the games to be played on special Comcast only channels. Other concerns would postpone this deal, which would be said to done in 2011, which would then again raise the market price.

Also, at that time there would be a new development from an internet television site called Hulu. Hulu provides certain episodes of a number of shows on the site, which originally showed these episodes for free. The way the company used to make money was by showing commercials before, during and after the episodes. The news was that for $10 a month, one has access to all episodes of the available on the site. With Hulu’s announcement, Comcast stock dropped due to some people no longer needing to have to pay for cable to watch their favorite shows. Netflix would also announce that more television shows would be available on its streaming services.

5.2B Microsoft

Week	1	2	3	4	5	6	7
Range	24.77-25.72	26.17-26.53	24.31-25.11	23.05-23.48	24.15-24.41	24.88-25.64	25.80-26.19
52 Week	22.00-31.58	22.00-31.58	22.00-31.58	22.00-31.58	22.14-31.58	22.73-31.58	22.73-31.58
Open	25.05	26.37	25.02	23.34	24.28	25.54	25.89
Vol/Avg.	68.06M/82.86M	52.08M/81.96M	156.26M/75.61M	62.49M/84.08M	53.81M/80.45M	65.06M/72.88M	31.98M/69.93M
Mkt cap	224.88B	231.72B	215.00B	203.93B	212.70B	218.13B	227.77B
P/E	13.26	13.67	12.68	12.03	12.55	12.87	13.43
Div/yield	0.13/2.03	0.13/1.97	0.13/2.12	0.13/2.23	0.13/2.14	0.13/2.09	0.13/2.00
EPS	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Shares	8.76B	8.76B	8.76B	8.76B	8.76B	8.76B	8.76B
Beta	1.02	1.02	1.02	1.04	1.04	1.04	1.04
Inst. Own	63%	63%	63%	635	63%	63%	63%
Price	25.66	26.44	24.53	23.27	24.27	24.89	26.00
Change	+0.66	+0.07	-0.47	+0.11	-0.14	-0.62	+0.19
Change %	2.64	0.27%	-1.87%	0.47%	-0.57%	-2.43%	0.74%

Table 5: Microsoft Stock Results

Figure 9:Microsoft Weekly Market Prices

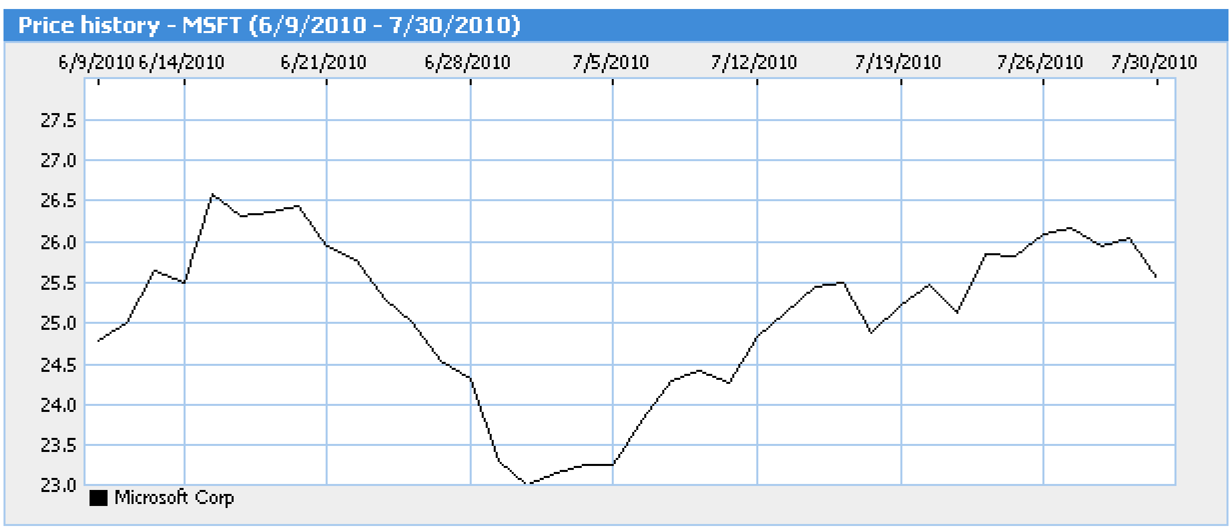

Figure 10: Microsoft Real Time Market Prices

Observations

A fairly balanced company, the market price fluctuated a fair amount but then ended close to the beginning price. One of the main reasons for the fluctuation on Microsoft would be due to its competitor Apple and its new product, the iPhone4. That was not the only deciding factor in the price, as Microsoft would divulge more information on cloud computing. Cloud Computing is a new form of computer setup that could increase computing power many times, and due to the increased performance some companies are very interested in the technology.

E3 also helped the stock as many new products were announced at the event. Some of these announcements had to do with new video games, which is a large portion of the market. The Xbox360 would also have new hardware such as the Kinect as well as a new design for the Xbox360. While the new design is mostly for ascetic value, many people will still buy the product as the new design is more visually appealing and saves some space, as the design is smaller. The Kinect on the other hand is more of a multimedia tool that can be seen as a step towards a digital home.

The announcement by Hulu would also affect Microsoft. The reason for this is that Microsoft offers its own television services, mostly accessed through Xbox live and Windows 7's TV tuner. Again, the issue of paying less for popular content drops the market price as it did with Comcast. Also around this time, the first iPhones had been released and a large number of people were purchasing them. Instead of competing against Apple, Microsoft decided to shift their focus on their upcoming phone named the Windows phone 7. With the move also came the cancelation of Microsoft's new phone, the Kin. This proved to be a smart move, as shortly after that complaints appeared about dropped calls on the iPhone. Due to an error in judgment, Apple had placed its antenna in a location that was in an area where most people placed their hands on while talking. By touching the antenna, the person became part of it and therefore made the functionality of said antenna to diminish and drop calls.

The remainder of the time studied, Microsoft would not have any new large announcements. Most of the announcements had either to do with more information on an already established product. Some new information on the Kinect sparked some interest but nothing of importance. Also, the extremely popular Windows XP was announced that it would still be available far into the future. This however was mostly directed to a small portion of their market that still prefers XP to the newer OS's.

5.2C Disney

Week	1	2	3	4	5	6	7
Range	33.58-34.26	34.92-35.35	33.12-33.68	30.72-31.68	33.37-33.80	32.92-34.00	34.09-34.72
52 week	22.05-37.98	22.05-37.98	22.05-37.9	22.05-37.98	22.07-37.98	24.36-37.98	24.89-37.98
Open	33.85	35.19	33.51	31.56	33.38	33.89	34.09
Vol/Avg.	8.81M/17.76M	14.67M/17.35M	11.16M/15.49M	15.60M/15.11M	8.53M/14.03M	13.06M/12.53M	4.91M/11.46M
Mkt Cap	67.06B	68.84B	65.57B	61.46B	66.10B	64.69B	67.88B
P/E	17.92	18.40	17.53	16.43	17.67	17.29	18.14
Div/yield	0.35/1.02	0.35/1.00	0.35/1.05	0.35/1.12	0.35/1.04	0.35/1.06	0.35/1.01
EPS	1.91	1.91	1.91	1.91	1.91	1.91	1.91
Shares	1.96B	1.96B	1.96B	1.96B	1.96B	1.96B	1.96B
Beta	1.16	1.16	1.16	1.17	1.17	1.17	1.17
Inst. own	67%	67%	67%	67%	67%	67%	67%
Price	34.24	35.15	33.48	31.38	33.75	33.03	34.65
Change	+0.13	+0.08	-0.12	-0.11	+0.41	-1.02	+0.52
Change %	0.38%	0.23%	-0.36%	-.35%	1.23%	-3.00%	1.52%

Table 6: Disney Stock Results

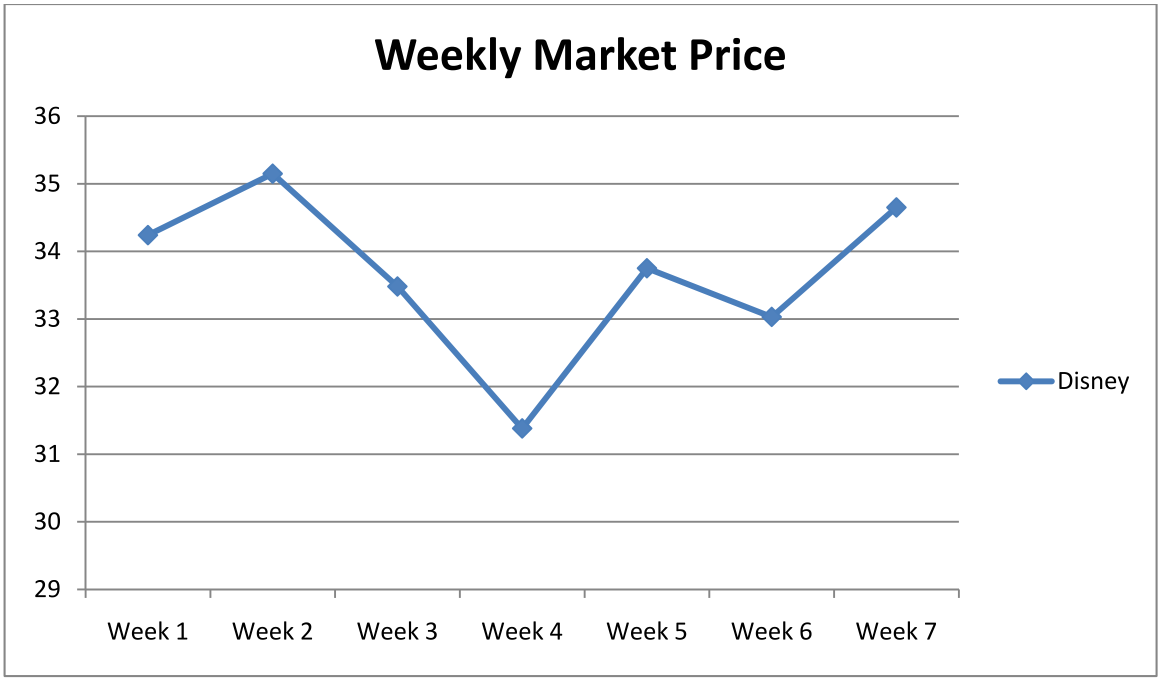

Figure 11:Weekly Market Price for Disney

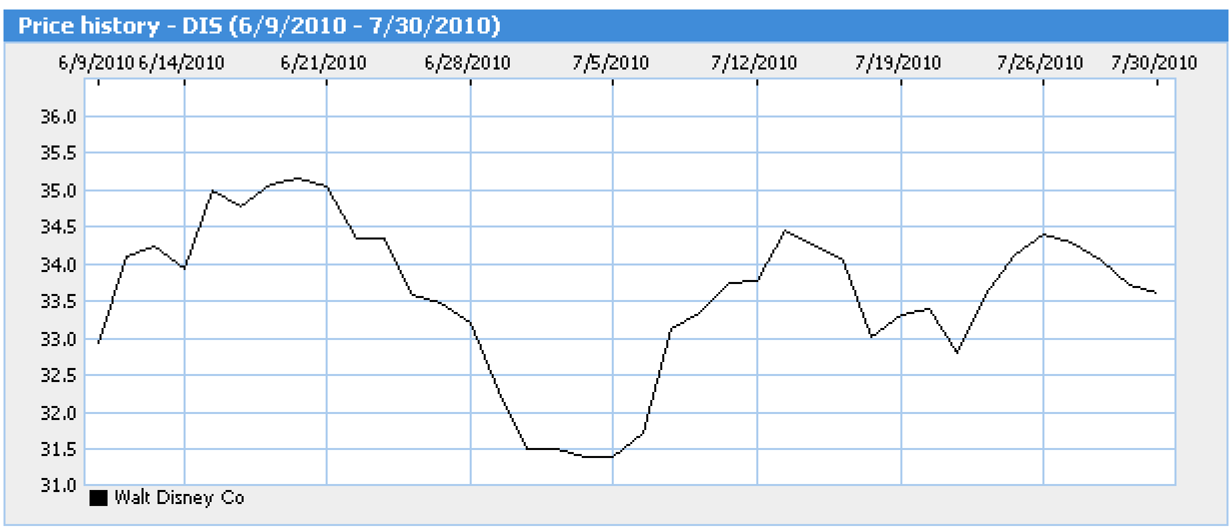

Figure 12:Real Time Market Price for Disney

Observations

At the start of the study, Disney had just suffered a loss in market price, but soon recovered. The first actions of the company that should be noted would be the closing of most of

ESPN Zone restaurants. Due to the economy, people were not going to the restaurants enough to warrant keeping them open. But at the same time, Disney introduced a television channel based on its ESPN channel programming, but instead of a normal channel, it broadcasts in 3D. This outweighed the loss of the restaurants as the world cup was about to start and a lot more people wanted to see it in 3D than go to the restaurants. Disney would finish its first week by announcing a new video game for the Nintendo DS based on Tinkerbelle from Peter Pan, and as well as releasing the new Karate Kid. The Karate Kid would go on to make $56 million on its opening weekend.

Disney would also go on to announce a joint project with Microsoft. As Disney owns ESPN, which is very popular, they decided to offer a partnership with Microsoft and allow their Xbox live consumers to have access to ESPN3.com's content. Around this time, Toy Story 3 was also released in theaters. As the Toy Story blew away Karate Kid with $109 million made on its first weekend, these two events pushed the stock price to the highest point during the study.

The rise was short lived, as soon as Toy Story was, released Dish network was forced to drop some of Disney's HD channels. The reason for this was that Disney felt that it was unnecessary to pay fees for showing the HD channels and therefore took them off the Dish network. This meant that a large amount of people could no longer watch their channels, which affects advertising revenue. The drop was shortly diverted by the news of a new theme park being planned for Shanghai. That day, Disney would also announce 3 new IMAX movies, including sequels to the Pirates of the Carrabin and Cars franchises. These movies are all set to come out in 2011.

While the company was now in the lowest price of the study period, Disney would go on to buy a video game company called Tapulous. Tapulous mostly focuses on mobile games for phones. This move could have been made due to the popularity of the recently released iPhone as well as other phones soon to be released. Not helping the dip in price came the news that Disney had lost a lawsuit dealing with the popular show called “Who wants to be a Millionaire?” The issue surrounding the case had to do with Disney not giving the creators of the show enough of the profit that the show created. Disney was forced to give the company, named Celador, $269.4 million at the conclusion of the lawsuit.

Later during the study, there began negotiations for the ownership of the company called Miramax, which at the time Disney owned. At this time, Disney would also announce a large project indented for Chinese schools. Due to his worldwide popularity, Disney announced a program that includes Mickey Mouse teaching the children English. The program is slated to begin by 2015. This alongside the success of the release of the movie “Despicable Me” raised the market price out of its small rut.

Shortly following these events came the news of a problem with Time Warner cable. The issue stemmed from the fact that Time Warner did not want to pay the proposed fees that Disney had proposed in order of Disney’s channels to be on the cable network. This issue was not a big concern however, as this issue has happened many times in the past. The new focus of the public became the new game released at Comic-con pertaining to the new sequel to the cult classic, Tron. A new line of tween clothes would also grab the public’s attention, as many children love Disney shows and new clothes are almost sure to sell.

Going back into the world of video games, Disney purchased another video game company called Playdom just before the end of the study. Famous for games such as *Social City, Sorority Life, Market Street* and *Bola* the company already has an established fan base. This purchase allows Disney to expand its video game influences to other markets such as those on facebook. This market may already have competitors such as FarmVille and Mafia Wars, but the large market allows Disney to add yet another source of revenue.

5.3 Results of simulation

Using the information gathered from the study, it can be seen that during the study there were times that it would have been good either to buy more stock or to sell. For this simulation, let us assume that you start out with 500 shares of each company. It should also be noted that buying and selling has to do with the information at the time of the market prices are announced and not later after the study. Unlike this simulation, you will not be able to look into the future and decided whether to buy or sell.

It should also be noted that this simulation, while done after the study, was completed by only looking at data that would have been available at the time specified and not after. This does not include however, future dates for events, as those were public knowledge and was available long before the study even began. Lastly, it should be noted while it is possible that money will be made during the simulation, it is not a guarantee that it will. This is due to author error, which should be noted so that you do not make the same mistakes.

5.3A Week 1 (June 7-11)

Comcast

Buying 500 shares of the company involves using the market price, which at the beginning of week 1 was $17.84 per share. Using basic math, the money spent to start the simulation for this company was $8,920. Throughout the week, the market price would range from $17.70 to $18.23. If you decided to sell at the high point in the week, it would have sold for $9,115, a profit of $195.

Microsoft

Buying 500 shares of Microsoft cost $12,525 at $25.05 a share, which is considerably more than Comcast's investment cost. Throughout the week, the price would range from $24.77 to $25.72. Selling at the highest point in the week would have brought in $12,860 that would make a profit of $335. While the there is a small profit to be made at this time, E3 is coming up and Microsoft is sure to announce some great new products. In this case, it may be a better idea to wait.

Disney

Buying 500 shares at $33.85 a share costs $16,925 and is the largest starting costs of the companies that were studied. The price would range from $33.58 to $34.26, and you could sell all your shares for $17,130 and make a $205 profit. While Disney also experienced a dip in price right before the study, it should be kept in mind that Toy Story has yet to be released and again waiting may be the best option at this time.

5.3 B Week 2 (June 14-18)

Comcast

During the second week of the study, the market opened at $18.68, which was higher than last weeks. Looking at the recent history of the company it can be seen that the market price had recently dropped from the highest it had been for the past year. This may change suddenly however because everyone wanted to watch the world cup at this time. The rest of the week would also be profitable with the high point being $18.78 per share. All of your shares at this point in time would be $9390, which would give you a profit of $470. Being cautious, let us sell 50 shares, which would give us $939. While the profit isn't too large, selling only 50 shares gives allows your remaining 450 shares to grow in the event that the market price goes up. The money covers 10.53% of the initial investment.

Microsoft

Opening at $26.37, Microsoft's market price was higher than the week before. The high point of the week was at $26.53 which may have been due to the fact that during this time E3 was allowing Microsoft to announce new products and services that were soon to come. Since this is most likely time during the study that Microsoft's market price would be this high it would be wise to sell a good amount of the available shares. In this case let's sell 200 shares, a large amount, but still leaves us half of the original shares to work with. The shares would bring in $5,306. A good amount and it covers 34.79% of the original investment.

Disney

Opening at $35.19, this week would be profitable for Disney with its highest price being $35.35. This week marked the opening of Toy Story 3, one of the most anticipated movies of the summer. Like Microsoft, this week is the most likely time when the market price would be at its highest. Again, let's sell 200 shares of Disney at the highest point during the week. Selling 200 shares at $35.35 makes $7,070 covers 41.77% of the initial investment. So far Disney has made the most money back from its initial investment, which is surprising due to its large initial investment.

5.3C Week 3(June 21-25)

Comcast

Opening at $17.83, this week would be much like week 1. Due to the low change in price it would not be advised to do much trading this week. It would be much wiser to wait until the price either goes up or down to maximize profits or shares bought.

Microsoft

Opening at $25.02, Microsoft would also go on to have a bad week, even dipping below the price when the study started. While the price ranged from $24.31 to $25.11, the market price was at its lowest point in a few months. This made buy stocks an option, the small decrease in price may continue so a small amount of shares may be safer. I decided to buy 4 shares, which meant spending $97.24. This purchase left 304 shares in my possession.

Disney

The success of Toy Story would be short lived, as the market price steadily fell the entire week. Unlike Microsoft, it was determined that the price of buying new shares was too high, and as such no new shares were bought this week. The idea was that hopefully the price would continue to fall and more shares could be bought at a later time.

5.3D Week 4 (June 28- July 2)

Comcast

Opening at $17.63, Comcast would not have a steady week. While the market price rose to 17.75, it would fall to 17.31 a few days later. Again, the price difference was not great enough to warrant any trading this week. The hope is that there would be some notable change in price the following week.

Microsoft

Microsoft would prove to have a bad week, with a mostly decreasing market price. Unfortunately for Microsoft, it would not make up for the decrease in price by the end of the week. This is good news for us since it meant that it was time to buy. Not knowing if this would be the lowest price during the study, I decided to buy 21 shares for $23.04 a share, which came out to $483.21 bring the total amount of shares to 325.

Disney

The decision to wait paid off, as the market price was low enough to warrant buying more stock. As the price dropped down to $30.72, the evitable rise could potentially create a large profit. The confidence came from the fact that *The Sorcerer's Apprentice* would be coming out in a few weeks to theaters and would hopefully share in the popularity that made *Toy Story 3* a success. Not wanting to spend as much as the initial investment, it was decided that no more than $1000 would be invested. This led to the purchase of 32 shares for $983.04, making the total shares to 332.

5.3E Week 5 (July 6 – 9)

Comcast

With the 5th being a holiday because of the 4th being a Sunday, there was a short week in trading. At this point in time, Comcast would start to increase in market price, meaning that it may have been a good idea to trade last week. This shows that some decisions can be costly, but hopefully mine will not be. The highest price at the end of the week was $18.09, the second highest it had been for the study thus far. It would have been a good idea to sell, however the news reported that Comcast was set to increase it viewership. This meant that it was likely that the price would increase the following week. It would be later determined if not selling this week was a bad idea or not.

Microsoft

Again, the price would grow for Microsoft as it had for Comcast. The change however was not as great, with the price only rising to $24.15 which was still lower than the starting price. The change in price made buying shares unwise, and at the same time not worth selling, so nothing was bought or sold for this week. Like Comcast, Microsoft also showed an upward trend, and I decided to wait.

Disney

Disney would also share in the growth like the other two companies, but like Microsoft it would only grow so far. Reaching a high of $33.80 it was closer to the initial price, and as such it was again not worth buying or selling any shares. Hoping for an increase in price due to *The Sorcerer's Apprentice* was much more likely given the effect of the previous movie.

5.3F Week 6 (July 12-16)

Comcast

This week would be very good for Comcast, as the price continued to skyrocket. The high point of this week would be the highest it had been for the study thus far. This of course meant that selling now would be a good decision. With the high being $19.35, it was decided to sell a large quantity of the remaining 450 shares. The amount decided was 250 shares, bringing in $4837.50 which now meant that 64.76% of the initial investment had been paid off. In this case it was a good idea to wait as it brought in higher returns.

Microsoft

Again, Microsoft would fail to reach any new high but did manage to close the gap. Unfortunately the price would drop at the end of the week, losing some of its momentum that it had gained. This week would also prove to be unprofitable to buy or sell due to the mediocre change in price. At this point in the study it would seem that it would have been a better idea to sell more at the beginning.

Disney

This week Disney would make up some lost ground but not enough to really save itself. While the release of *The Sorcerer's Apprentice* would bring in some money, it was notably lower than *Toy Story 3*. While the high may have been $34 the market price was unlikely to rise again as there would be no new big movies coming out any time soon. Out of the 332 remaining shares, 200 were sold for $6800 making 81.95% of the initial investment paid off.

5.3G Week 7(July 19-23)

Comcast

The final week of the study would be kind to Comcast, as it would mark the highest market price of the study. Selling the remaining 200 shares for $19.49 made $3898 and thus ending the simulation for Comcast.

Microsoft

The final week would also be kind to Microsoft, as the price rose. While not the highest point in the study, the price would be larger than when the study started meaning the there should be some profit to be made. Selling the remaining 325 shares at $26.19 made $8511.75 making the decision to wait the correct one.

Disney

Lastly, Disney would have an unstable week but it would end on a high note. Again, not the highest point in the study but still higher than the starting price. Selling the remaining 132 shares for $34.72 made $4583.04.

5.4 Conclusions

While the simulation could have been done differently, the end result is a success as all investments made money. This can be seen in the following charts showing the totals of all the transactions made during the simulation.

	Money Spent	Money Earned	Shares owned
Week 0	$8920	$0	500
Week 1	$0	$0	500
Week 2	$0	$939	450
Week 3	$0	$0	450
Week 4	$0	$0	450
Week 5	$0	$0	450
Week 6	$0	$4837.50	200
Week 7	$0	$3898	0
End	$8920	$9674.50	

Table 7: Comcast Simulation Results

	Money Spent (in dollars)	Money Earned (in dollars)	Shares
Week 0	12,252	0	500
Week 1	0	0	500
Week 2	0	5,306	300
Week 3	97.24	0	304
Week 4	483.21	0	325
Week 5	0	0	325
Week 6	0	0	325
Week 7	0	8,511.75	0
End	12,832.45	13,817.75	

Table 8: Microsoft Simulation Results

	Money Spent (in dollars)	Money Earned (in dollars)	Shares
Week 0	16,925	0	500
Week 1	0	0	500
Week 2	0	7,070	300
Week 3	0	0	300
Week 4	983.04	0	332
Week 5	0	0	332
Week 6	0	6,800	132
Week 7		4,583.04	
End	17,908.04	18,453.04	

Table 9: Disney Simulation Results

	Initial Investment	Total Spent	Total Earned	Profit	Return on Investment
Comcast	8,920	8,920	9,674.50	754.50	7.80%
Microsoft	12,252	12,832.45	13,817.75	985.30	7.13%
Disney	16,925	17,908.04	18,453.04	545	2.95%

Table 10: Totals of the Simulation

While there was a profit made with this simulation, it could have gone either way. For example if more shares had been bought during week 4, it would have been cheap and would have led to higher profits for each company. Additionally if there had been a less conservative approach to selling during the second week, it would have been possible to greatly increase profits.

On the other hand if more shares had been bought during the week where the prices all dropped it could have led to significant loses. It may have happened that the market never went back up and that would have led to a much lowered return than received in this simulation.

Chapter 6. Results

As seen in each study, the companies were stable, with the deviation being $3.57, $3.77, and $1.96 for Microsoft, Disney and Comcast respectively. This is not always true with the stock market, the companies chosen for the study just happen not to have any large change in the market price during the test. Doing some research into the company's history shows large deviations, on average being around $10 over the last year. As said earlier, stocks should be kept around for around 10 years; this study was less than two months and therefore isn't an exact representation of each company.

What we can tell from this study however is that it shows that certain companies can be stable, even in the long run. All these companies have been around for more than ten years, and as such are good examples on what happens to companies that have established a large number of consumers prior to your investment. In addition, all the companies are intertwined one way or another. This is seen most predominantly with the new version of Hulu discussed in the previous chapter. While it is not directly affecting Disney, Hulu is owned partially by NBC, which is a subsidiary of Disney. The Hulu connection shows that each of these companies can cause one another to either grow or drop in market price. In this case, Disney was the only one to prosper from the new Hulu, albeit not directly. The other companies fell in market price because of this.

There are also other connections as well, such as Disney being shown on Comcast's cable package. Both companies share in the ad revenue that one another brings to the deal. Comcast also uses its On-Demand service to show movies, a number of them produced by Disney, bringing even more revenue. Microsoft does something similar with its TV streaming program, Media Center, which works on both the computer as well as the Xbox360. Microsoft however does not offer movies over the internet. It should be noted that Comcast and Microsoft do not compete directly in terms of TV audiences. The reason for this is that Microsoft's technology requires either cable or internet access, both provided via Comcast. In fact, both companies work together for more advanced television apparatus, such as DVRs.

Looking at the graphs of each company's market price also shows similarities. It should be first noted that each company's graph looks like a wave, meaning that each company's market price rose and fell at certain times. While each company's graph is unique, there are some key similarities between them. The most noticeable is the fall that occurred the last day in June and the first few days in July. The NASDAQ also experienced a drop at this time, which could explain why Comcast and Microsoft both dropped simultaneously. Disney is not part of the NASDAQ, so does the drop in price have anything to do with the other two companies? The answer is no, but an external reason is the cause of the drop. At the end of June, a government release announced that employers had shed 150,000 net jobs during that month. This news caused a large decrease in market price for most companies, which would explain why all three companies experienced a drop in market price.

Chapter 7 Conclusions

Starting from daily auctions, the stock market has come a long way since its humble beginnings. From unregulated sales to complex rules and regulations, the stock market has grown into a worldwide power, with many companies from different nations all trying to make a living. The stock market has also grown in competition, with more people comes more competition in making money.

There are now hundreds of companies to invest, and as seen in the study, many are interlinked with each other. Making the right decision on what company to invest in is crucial. While predicting the future of the market is close to imposable, it is possible to find a good investment through proper research, a little bit of luck also helps. Once companies that meet ones requirements are found, always make sure that one's portfolio is diversified. Having all your eggs in one basket will most likely lead to failure than success.

Other forms of investment must also be considered when building ones portfolio. While bonds won't usual generate as much money as stocks, they are much safer. Bonds will more than likely create a positive return on investment, while stocks depend on the market and nothing is guaranteed. Mutual funds should also be considered though it should be kept in mind the funds are usually maintained by third parties. This party is not only going to cost money but may also try to trick you into paying for unnecessary transactions and put your portfolio in harm's way.

When getting any one to help you with anything pertaining to the stock market, there should be great care taken when you decide whom you ask for help. Many people have been wronged out of a lot of money because of the greediness of their hired help, and many of these incidents go unnoticed. There are also many more pitfalls that are worth mentioning and should be avoided as much as possible. Another one is getting advice from media services. The media must have constant news in order for it to make any money, sometimes resulting in inadvisable news that should be ignored. This happens more often than it should, and many people tend to fall for it.

That being said, most of the public may have no idea what they are doing when it comes to the stock market. Never go with actions that the majority of the populous is doing, it is usually foolhardy. Always do research before making any type of decision, don't solely rely on others people opinions. Also never follow fads, they will either end quickly and won't have a large return. Keep in mind the old saying, "If everyone was jumping off a bridge, would you?"

Active investing is yet another pitfall to look out for. Not only does it increase the risk of lower or no returns, it also increases the cost of trading with more transactions. While active investing has the possibility of higher returns, the chances are more likely that lower returns will occur when compared to the rest of the market. This can be seen in the simulation, were prices fluctuating and trading at the wrong time maybe choke your returns. The study also showed that some companies grow with time, though it depends on the company, it is possible to make a fair amount of money with the market returns.

In conclusion, the stock market can be a treacherous place, but if you know what you are doing, and put forth enough effort, it is possible to make large amounts of money. Dodging all the pitfalls can be challenging, always get your information from reliable sources. Try your best to be independent and not rely on other people, but if you need help always make sure the person who helps you knows what he or she is doing. Finally, if you are stuck and do not know who to ask, use all the information that has been discussed, and hopefully you will now be able to get to the right solution.

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