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# **STOCK MARKET SIMULATION**

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## **Abstract**

The objectives of this project were to research and explain the fundamentals of the stock market and to practice the skills necessary to make successful trades within the market. A four member team investigated the creation of the modern stock market, the histories of NYSE and NASDAQ, and the political factors that affect the stock market. Members also performed an eight-week stock market simulation, each specializing in a particular trading strategy and sector of the market. One member used fundamental analysis investing with a diverse portfolio; another used company history and projected growth to invest in the life sciences, the third member used historical analysis to invest in the gaming industry, and the last member used the income and growth strategies to invest specifically in shoe manufacturing and technology companies. Only the portfolio that focused upon the gaming industry produced a profit, while the other portfolios lost money. The results indicated that (a) companies that respond to customer feedback tend to succeed; (b) the gaming industry is running at full steam and that now is a good time to invest; (c) basing your trading decisions on the quality of a product or service is only useful in some sectors, like technology, while it is less useful in other sectors, like banking; and (d) finally, it was concluded that investing in the life sciences is a risky venture, because developing technology is kept far from the investors' evaluation and loss of FDA approval can cause unpredictable and devastating losses in stock value.

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## **Chapter 1: Introduction**

For our IQP, our four member group is attempting to understand the US stock market and the various trading strategies by undergoing an eight week investing simulation. By using real-time data provided by Investopedia.com, we used an allocation of hypothetical funds to invest in at least eight companies. Over the course of the simulation, we sought to learn as much as we can about the market and what affects it without actually investing any of our own money. A set of goals was established before the start of the simulation to remind us of what needed to be accomplished and learnt during the simulation period.

### **1.1 Goals**

We have set nine general goals for this project, which we can group into three overall sections. First, we wish to understand the current economic climate and how the economy works, especially by trying to understand and discover the deciding economic and political factors governing the stock market. We will be watching our portfolios as they rise and fall, and by analyzing the data at the end of the simulation and comparing it to real world events, we will attempt to figure out what factors were responsible for the losses and gains we experienced. In addition, we wish to identify investment bias caused by conflict of interests between parties. By combining what we've learned from our analysis, as well as independent research gathered during the simulation, we hope to better understand how the market works so that we can become wiser investors.

Second, we wish to develop the skills and knowledge required to do make informed market investments. This includes critical thinking, decision-making,

cooperation and communication between team members, independent research, and saving and investment strategies. Members will research different market concepts and investing strategies, which will be used to guide them in managing their portfolios. We will be trying to get better at tracking and evaluate the performance of a selected group of stocks by using different investing strategies which have been researched beforehand. During this time and while doing research, we hope to be able to find trustworthy sources that provide reliable information to allow us to make the correct decisions in the stock market. This way we can get a good idea of what to invest in and when to invest by analyzing data and information on various companies. With this practice, we hope to become better investors.

## **1.2 Project Overview**

As previously stated, the heart of this project is an eight week investing simulation using false money and real-time data. Members will use the Investopedia.com simulator to buy and sell selected stocks that are listed on the NYSE and NASDAQ. Available stocks include the companies listed on both Dow Jones Industrial Average and the S&P500 index.

Members will provide a detailed analysis as to why they expect the stocks they select to succeed. During the simulation, new companies in which to invest may be selected, and more analysis must be provided justifying the change. Each member will be required to keep a day-to-day journal recording the loss and gains during the simulation. This journal will also be a record of trades, and the motivations behind them. Redundant records will be kept as excel spreadsheets to prevent data loss and ensure accuracy.

Additionally, each group member will research and analyze a distinct topic related to the history of the stock market and the simulation program. Written accounts of this research will be included in the final report. We believe this project will run smoothly.

## **Chapter 2: Stock Market Overview**

### **2.1 The Creation of the Modern Stock Market**

One of the first instances of a stock market like financial system evolved in 12<sup>th</sup> century France. The Courratiers de Change were responsible for managing agricultural debts on behalf of banks. These Courratiers are often considered the first brokers as they traded in debts. In the following century in the year 1309 AD, a group of commodity traders, known as the Brugse Beurse, met in a building owned by Van der Beurze , for whom the group is named, in Antwerp to trade. This form of commodity trading became popular and subsequently spread to Flanders, Ghent, and Amsterdam.

Later in the middle of the 13<sup>th</sup> century, Venetian bankers elected to begin trading government securities. This practice was later regulated in 1351 when the Venetian government outlawed spreading malicious rumors whose intent was to devalue government funds. This practice of trading in government securities was later practiced in many of the neighboring city-states of Pisa, Verona, Genoa, and Florence starting in the 14<sup>th</sup> century.

Centuries later, the Dutch founded the first stock exchange in the Netherlands in Amersterdam. In 1602, the Dutch East India Company, a joint stock company, sold its first shares through the Amsterdam Stock Exchange. As a joint stock company, the East India Company allowed shareholders to invest in business ventures. Their investments entitled them to both the possible profits and losses of the enterprises. The Amsterdam Stock Exchange, also known as the Amsterdam Beurs after the famous 13<sup>th</sup> century commodity traders, is recognized as the first financial institution to pioneer the concept of

continuous stock trading in the 17<sup>th</sup> century. The Dutch are also credited with creating the concepts of short selling, debt-equity swaps, option trading, merchant banking, and unit trusts. Imitating the Dutch, the English established a stock exchange in London in 1688. The London Stock Exchange was created as a collection of joint stock companies similar to the Dutch East India Company out of a necessity to find funding for overseas voyages.

Today there are numerous stock exchanges all over the world. A list of the currently operating stock markets can be found in Appendix.

## **2.2 History of NYSE**

The US investment market was born in 1790 when the federal government refinanced all federal and state Revolutionary War debt by issuing \$80 million in bonds. These bonds then became the first major issue of publicly traded securities in the United States. The first trade occurred in 1792 when five securities were traded. Three of them were government bonds and two were bank stocks. In 1817, the New York brokers established a formal organization, the New York Stock & Exchange Board (NYS&EB), which adopted a constitution with rules for the conduct of business. By 1824, the annual trading at the NYS&EB had reached a peak of 380,000. In 1863, the NYS&EB changed its name to its current name, the New York Stock Exchange (NYSE). The NYSE then moved into 10-12 Board Street, which made Wall and Broad Street the center of securities trading in the US.

In recent history, the NYSE experienced its first 100 million-share day in 1982. Since 1982, the daily trading volume of the NYSE have gained exponentially and finally

reached 1 billion for the first time in 1997. The current trading hours of the NYSE was first established in 1985. In 2006, the NYSE merged with ArcaEx, which was the largest merger among securities exchanges up to that time. Since then, the NYSE has merged with Wombat Financial software, American Stock Exchange, Euronext, SIAC, MatchPoint Trading, and Marco Polo Network.

### **2.3 History of NASDAQ**

The National Association of Securities Dealers Automated Quotation (NASDAQ) was the world's first electronic stock market. Unlike the NYSE, the NASDAQ was founded much later, in 1971. The NASDAQ currently has 3,300 company listings. Additionally, it is the one of the largest exchanges in the U.S. with about 1.8 billion trades per day. However, the NYSE is still considered larger because its market capitalization far exceeds that of the NASDAQ. Even though the NASDAQ trades shares in a variety of companies, it is well known for being a high-tech exchange. It trades many new, high growth, and volatile stocks. The listing fee on the NASDAQ is significantly lower than on the NYSE; therefore, smaller companies tend to do listings on the NASDAQ.

A company must meet strict financial criteria in order to be listed on the NASDAQ National Market. For instance, they must maintain a stock price of at least \$1, and the total value of outstanding stocks must be at least \$1.1 million. The NASDAQ also has smaller markets for companies who are not able to meet the requirements.

## 2.4 Political Factors Affecting the Stock Market

One can commonly observe an apparent ripple effect between political factors and the stock market. The market seems to lose value after catastrophes, such as the 9/11 attacks in 2001, and it seems to gain value after occasions that rally public confidence, such as the election of a popular president. These informal observations have led many investors to believe that they can use information regarding events in the political sphere to turn a profit in the stock market. However, according to a recent study published in *Finance*, this is not the case.

Believing that one can predict stock returns based on information that is available to the public goes against a widely accepted academic theory, the efficient markets hypothesis (EMH) theory. In short, this theory asserts that stock prices are a perfect reflection of all known information, and that these prices will instantly change in response to new information (Wikipedia). If this assertion were true, it would be impossible for an investor to consistently outperform the market by using information the market already knows.

Not everyone accepts the efficient markets hypothesis. For example, some researchers report evidence of a “Democratic premium,” a condition in which excess stock returns are consistently higher during Democratic presidencies as compared to Republican ones (Santa Clara and Valkanov, 2003). Still others propose that stock returns will be higher during the second half of a presidential election cycle (Booth and Booth, 2003).

However, according to the aforementioned paper in *Finance*, “Real-Time Forecasting and Political Stock Market Anomalies: Evidence for the United States,” real time modeling approaches support the efficient markets hypothesis. In this study, researchers used monthly U.S. data from 1953 to 2003 to analyze the effect of political stock market anomalies on the ability to forecast stock returns in real-time. Their analysis was based on the assumption that an investor can only undermine the EMH if he or she can exploit political variables that are available in the present. In the researcher’s model scenario, the investor must weigh, in every month, all available information on macroeconomic, financial, and political variables to forecast one-month-ahead excess stock returns. To deal with the information in a systematic manner, the investor applies a recursive modeling approach similar to the model developed by Pesaran and Timmermann (1995), which implies the use of political variables. As new datum become available, the investor restarts the search.

Researchers compared two hypothetical investors in this scenario using near identical modeling approaches. The one difference between the two is that Investor A assigns weight to political variables, while Investor B ignores such variables. The two modeling approaches are applied over the period of fifty years, and the outcomes are compared for each investor.

According to the authors of this study, performance was not improved in a statistically significant way for the investor who considered political variables. The researchers concluded that, even though political variables are often included in a forecasting model, consideration of these variables does not help guarantee an investor

will profit from the stock exchange. The authors imply that political anomalies do not necessarily convey market inefficiency.

### **Chapter 3: Online Stock Market Simulators**

Stock market simulators have been around since the market originated, but with the arrival of computers and the internet came the first online stock trading websites. The first online stock trade was made by a dentist in Michigan on July 11, 1983 and was the first trade for Trade\*Plus. Nine years later, Trade\*Plus was the fastest growing company in Silicon Valley; it was renamed E-Trade Group in 1996.

Prior to this innovation, most stock simulations were done with paper and pen, organized by companies and by individuals. With the arrival of online stock trading, came the need for an online simulation of this trading, and in time, the first stock market simulation was created. These simulations served as ways to introduce potential investors to the market in a no-risk, learning environment. Most are targeted towards college or younger students.

Stock Market Simulators can be broken down into two basic categories: Financial Simulators and Fantasy Simulators/Exchanges.

Financial Simulators, such as eInvesting.com's simulator, Stocksquest, or Investopedia.com's simulator attempt to emulate the real stock market. They allow users to invest fantasy money into real stocks, creating a portfolio that changes with the market realistically over time, as if the user was investing real money. All simulators have a delay time (usually about 20-minutes) so that trade data found with the simulator cannot be used to trade actively on a competing real money system. Broker fees and commissions are also included in most simulators in order to more accurately affect an investor's bottom line. This helps the user consider the costs and fees associated with each purchase so they can trade more realistically.

Financial Simulators give users a feel of what investing is actually like, since they attempt to imitate the real markets as closely as possible. They are best for students or average users who have an interest in getting into real investing but do not want to risk any real money. They serve best as a teaching tool, and therefore are ideal for this project.

Fantasy simulators and exchanges, such as The Hollywood Stock Exchange or TV Stocks Online stock exchange, TerrorXchange, or GolfInvestors, are simulators in which users trade fantasy stocks, which represent items that would never be traded in actual markets. This could be stock in upcoming movies, television shows, directors, professional golfers, or even predictions of upcoming news events and possible terrorist attacks.

The main difference between fantasy simulators and financial simulators is that although stocks can be purchased in fantasy simulators with fantasy money on some sites, most of them require users to trade with real money instead of fake money. This creates a real market out of fake commodities. Because of this, many of these sites are considered gambling sites and have been shut down in the US or moved overseas to avoid legal troubles. These do not serve well as ways of learning the market, since the commodities traded are not tangible or practical.

## **Chapter 4: Diversified Portfolio Utilizing Fundamental Analysis**

### **4.1 Strategies employed**

The banking sector took a huge hit because of the subprime lending crisis in 2007. This crash caused a bear market. Bank stocks were particularly affected by the sharp decline in stock prices. For example, in March of 2009, Bank of America (NYSE: BAC) stock bottomed out at \$2.53 per share while Citigroup (NYSE: C) hit a low of \$0.97. At their lowest point, the panic that had hit Wall Street resulted in the severe undervaluation of corporate bank shares. These stocks have made significant gains in the past six months; however, these stocks are still being undervalued, and they present a good opportunity for investment.

### **4.2 Companies Chosen and Reasons**

#### **Bank of America (NYSE: BAC)**

Bank of America Corporation was created in 1998 after the incorporation of NationsBank Corporation into the BankAmerica Corporation. Bank of America can be divided into its three respective divisions--Global Consumer and Small Business Banking, Global Corporate and Investment Banking, and Global Wealth and Investment Management. Bank of America possesses a strong market share in all 50 of the United States and maintains operations abroad in 44 foreign countries. The majority of Bank of America's revenues come from consumer and small business banking, which accounted for 80% of the bank's revenue in 2008. This provides a relatively stable platform for the bank to capitalize on other, more risky opportunities.

Bank of America is a smart investment, as it is now relatively low priced. In the past ten years, shares of Bank of America have not been lower in price, yet the recent acquisitions and announced acquisitions of Merrill Lynch and Wachovia Financial should increase the bank's market share as the economy recovers. Additionally, its position as the largest bank in the United States has helped to reduce the risk of investing in Bank of America. The current administration has shown that it will come to the aid of Bank of America if it shows signs of faltering to help stabilize the economy. Though government involvement in Bank of America may hinder or slow current operations, it significantly reduces the risks involved in investment.

#### **Royal Bank of Canada (NYSE,TSX: RY)**

The Royal Bank of Canada began as the Merchants Bank in Halifax in 1864. Later, in 1901, the name was changed to the Royal Bank of Canada, and through a series of mergers and acquisitions, has become the largest financial institution in Canada. The Royal Bank of Canada divides its operations into five divisions—Canadian banking, wealth management, insurance, international banking, and capital markets (shown in order of decreasing percentage of total revenue). The Royal Bank of Canada's Canadian banking division reaches 10 million customers, totaling C\$2.6B during fiscal year 2008. This accounted for 43% of the company's total revenue that year.

Canada has instituted stricter regulations on banking practices than other nations. For example, Canada requires a tier-1 capital ratio of at least 7%. Canadian financial responsibility is also an important factor in the success of the Royal Bank of Canada. In a report published by the CBA's Mortgage Bankers' Association in July 2008, Canadian

loan delinquency rates averaged 0.29 %, compared to 2.20 % in the United States. Though Canadian banks were not unaffected by the recent recession, the more sheltered climate of the Canadian banking sector has helped Canadian banks to post better relative profits and revenues than their foreign counterparts in the recent economic turmoil. This, and a strong Q3 2009 net margin of 16%, helps make investment in the Royal Bank of Canada a smart decision.

### **Reasons for Investing in Brokerage Firms**

The recent recession has resulted in the frequent trading of large volumes of stocks. Brokerage companies earn most of their revenue from transaction fees made when stocks are trade. Thus in a volatile economic climate where stocks are often bought and sold at short intervals, investment in brokerage firms is a relatively safe decision.

### **TD Ameritrade Holding Corporation (NYSE: AMTD)**

Toronto-Dominion Ameritrade began as a small investment bank in Delaware in 1971. Through the subsequent acquisitions of Aufhauser and Company (a company with one of the first platforms for secure internet stock trading) and Toronto-Dominion Waterhouse, TD Ameritrade has become one of the largest and most successful brokerage firms in the world.

Though common to the industry, TD Ameritrade has posted many consecutive high net margins (~25%). This, combined with a high interest coverage ratio of 12.9 (wikinvest.com September 19, 2009), makes TD Ameritrade one of the safest investments in a very lucrative industry.

### **SEI Investments Company (NASDAQ: SEIC)**

SEI Investments Company is an investment company that specializes in software development and administration to both large companies and wealthy investors. SEI Investments offers a broad range of financial software, ranging from accounting to investment solutions, to its customers. SEI Investments maintains an administrative role over its software solutions, at a fee. The company's net margin has increased rapidly since the recession and has recovered to 16.5 % from a low of 3.6 % in the fourth quarter of 2008. SEI also boasts an impressive interest coverage ratio of 47.4 % and an ROA of 9.1%, making SEI Investments Company a sound investment.

### **Baidu.com (NASDAQ, ADR: BIDU)**

As the successes of Google.com have shown, there is a large market for internet search providers who take advantage of advertising space. Baidu.com has become the largest Chinese language search provider on the internet and is consequently the most visited site by Chinese users. As China continues to industrialize and revolutionize, more of China's large population can gain access to both the internet and to Baidu.com. Baidu.com is a good investment, as Baidu.com is well-positioned to take advantage of the already lucrative business model of Google.com while its number of users continues to grow and expand with China's booming economy.

### **Reasons for Investing in a Stock Market Index (DJIA) & (QQQQ)**

The recession that has hurt stock prices is seeming to end. The president has forecast that recovery will occur into 2010. With this assumption, it is likely that the stock market as a whole will continue to recover much of the ground that it had lost during the recession.

Thus, with the assumption of a stabilizing and once again growing economy, a stock representing a trading index as a whole is a logical investment. Price weighted averages of composite indexes reduce the risk of investing as if one company fails, the others in the index can help offset the loss.

Therefore, investing in the Dow Jones Industrial Average (DJIA) or the Power Shares QQQ Trust, Series 1 (NASDAQ: QQQQ) would be a reasonably safe and intelligent decision.

### 4.3 Weekly Simulation Reports

#### 4.3.1. Journal for Week of Sept. 21 – Sept. 27, 2009

This week I did not make any trades beyond the initial purchase of my stocks.

**Table 4.1. Transaction History**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Total Cash
9/21/09						\$500,000.00
9/21/09	AMTD	Buy	\$19.45	5000	(\$97,269.99)	\$402,730.01
9/21/09	AMTD	Buy	\$19.46	2500	(\$48,669.99)	\$354,120.02
9/21/09	QQQQ	Buy	\$42.56	1500	(\$63,859.99)	\$290,260.03
9/21/09	BIDU	Buy	\$398.58	125	(\$49,842.49)	\$240,417.54
9/21/09	BAC	Buy	\$17.29	4500	(\$77,824.49)	\$162,593.05
9/21/09	RY	Buy	\$52.78	1500	(\$79,189.99)	\$83,403.06
9/21/09	SEIC	Buy	\$19.55	4100	(\$80,174.99)	\$3,228.07

As seen in Table 4.1, I purchased the majority of my stocks in the banking/investment sector. I believe that as the economy rebounds, the first companies to see share price increases will be those who were first hit when the stock market crashed. I allocated the largest share in Ameritrade. This is because Ameritrade makes the majority of its revenues from stock transaction commissions. If the economy continues to change, either

up or down, Ameritrade will make money off of the stock trade commissions. When the market is more volatile, AMTD makes more money as more trades are made. This purchase will act as a sort of safety net for my portfolio in case the market crashes.

I allocated the least amount of my money in Baidu.com because I believe that their stock price may have reached a zenith. Baidu.com has unlimited potential in the Chinese market, yet their stock has increased so rapidly in the past year that it is at risk of falling due to an overinflated share price. Thus to be cautious, I have limited the number of shares I have initially purchased from Bidu.com. The remainder of my \$500,000 was divided evenly amongst the remaining companies.

#### **4.3.2 Journal for Week of Sept. 29 – Oct. 2, 2009**

This week, the stock market, as a whole, decreased in value. Stock prices fell after the Department of Labor released a worse than expected jobless claims report in which new jobless claims were 3% higher than expected. This compounded a problem that had started with a worse than expected report on private sector job losses that was released earlier in the week. These reports have made investors cautious about the continuous gains that the stock market has made in the last quarter. The banking sector took a particularly large hit and as such, my portfolio's total value has shrunk.

**Table 4.2. Portfolio Value to Date**

Date of Valuation	Symbol	Current Price Per Share	Shares	Total Value
9/21/09	AMTD	\$19.36	7500	\$145,200.00
9/21/09	QQQQ	\$40.88	1500	\$61,320.00
9/21/09	BIDU	\$375.21	125	\$46,901.25
9/21/09	BAC	\$16.34	4500	\$73,530.00
9/21/09	RY	\$51.03	1500	\$76,545.00
9/21/09	SEIC	\$18.80	4100	\$77,080.00
				\$480,576.25

As seen in Table 4.2, the largest losses suffered this week for my portfolio were from the Bank of America Corporation and the Royal Bank of Canada. Bank of America is in the process of finding a new CEO to replace retiring CEO Ken Lewis. The news of Ken Lewis's retirement might have contributed to the large losses of Bank of America. Though Baidu.com did also lose a large percentage of its value, I did not invest very strongly in this company, and so the losses incurred from Baidu.com are nominal. TD Ameritrade shares were relatively unaffected by the downward trend of the stock market in the past week. The high volume of shares that was traded this past week should help increase their revenue. I do not believe that the downward trend of the stock market this week is signaling another crash. I think it is solely a reaction of cautious investors, who will overcome their timidity in the coming weeks. Thus, I see no reason to sell my shares now, at the bottom of a slump. Already, Bank of America has recuperated some of its losses and I believe will continue to do so next week (BAC shares rose 0.8%, \$0.13, in trading on Friday (Figure 4.1)).



**Figure 4.1. BAC Stock Chart for Week of Sept. 29 - Oct 2, 2009**

The increase in BAC’s share value Friday was a result of the bank’s board authorizing a dividend payment on preferred stocks issued to the Treasury Department last year as part of the bank’s rescue plan, signaling the bank’s ability to repay its TARP loans.

### **4.3.3 Journal for Week of Oct. 5 – Oct. 9, 2009**

This week, the stock market, as a whole, increased in value. The NASDAQ rose nearly 100 points while the NYSE composite index rose nearly 360 points since the start of the week. Stock prices rose as investor’s fears that the economic recovery was moving too quickly, lessened.

**Table 4.3. Week End Portfolio**

Date of Valuation	Symbol	Current Price Per Share	Shares	Total Value
10/9/09	AMTD	\$20.45	10,500	\$214,725.00
10/9/09	BIDU	\$427.07	25	\$10,676.75
10/9/09	BAC	\$17.50	7250	\$126,875.00
10/9/09	RY	\$53.61	1500	\$80,415.00
10/9/09	SEIC	\$20.07	4100	\$82,287.00
				\$514,978.75

As can be seen from Table 4.3, the value of my portfolio has increased by approximately \$15,000 since starting the simulation; my shares have increased an average of 2.52% in value to date.

**Table 4.4. Trades Made During Simulation Week Three**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Total Cash	Total Profit
10/9/09						\$3,228.07	
10/9/09	QQQQ	Sell	\$42.45	1500	\$63,651.86	\$66,879.93	\$5,281.87
10/9/09	AMTD	Buy	\$20.41	3000	(\$61,249.99)	\$5,629.94	
10/9/09	BIDU	Sell	\$426.32	100	\$42,612.01	\$48,241.95	\$2,734.02
10/9/09	BAC	Buy	\$17.48	2750	(\$48,089.99)	\$151.96	

I decided to sell all of my shares of QQQQ as it is a composite of the NASDAQ, and thus moves with the average of a group of stocks. This reduces the risk in investing in the QQQQ, yet this stock usually changes value more slowly than individual companies do. I think that as the economy recovers, specific sectors with high intrinsic value, such as the banking sector, will recovery more quickly than a composite index. Thus, I sold all

of my shares to invest in the riskier Bank of America, hoping for higher returns as BAC recovers.

Additionally, Baidu.com stocks have risen significantly since last week (+ 13.8%), even hitting a 52-week high on Thursday. I do not think that the inherent value of the company has increased as rapidly in such a short amount of time. This rapid of a price increase is usually accompanied with by a subsequent sell-off and reduction in value.

#### **4.3.4 Journal for Week of Oct. 26 – Oct. 30, 2009**

Though a better than expected third-quarter GDP report punctuated this week, stocks ended down this week. The Dow tumbled 249.85 points (-2.51%) this Friday; the NASDAQ (-52.44) and S&P (-29.93) both ended the week with a slide as well. It seems that the recent selloff was due to investors concerns over the validity of the recovery that has been ongoing since the summer. This is evidenced by the decline that followed the seemingly optimistic third-quarter GDP report.

As can be seen from Table 4.5, I sold my Biadu.com, Bank of America, Royal Bank of Canada, and SEI Investments Co. stocks. From these sales, I purchased equivalent amounts of Raytheon and Activision Blizzard stocks.

**Table 4.5. Trades for the Week Of Oct. 26, 2009**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Total Cash	Total Profit
						\$151.96	
10/30/09	SEIC	Sell	\$17.44	4,100	\$71,484.01	\$71,635.97	(\$8,651.00)
10/30/09	RY	Sell	\$50.49	1,500	\$75,715.01	\$147,350.98	(\$3,435.00)
10/30/09	BAC	Sell	\$14.74	7,250	\$106,845.01	\$254,195.99	(\$19,069.47)
10/30/09	BIDU	Sell	\$380.87	25	\$9,501.76	\$263,697.75	(\$442.75)
10/30/09	RTN	Buy	\$45.50	2,800	(\$127,419.99)	\$136,277.76	
10/30/09	ATVI	Buy	\$10.87	12,000	(\$130,459.99)	\$5,817.77	

**Table 4.6. Week End Portfolio**

Date of Valuation	Symbol	Current Price Per Share	Shares	Total Value
10/30/09	AMTD	\$19.73	10,500	\$202,650.00
10/30/09	RTN	\$45.50	2,800	\$126,784.00
10/30/09	ATVI	\$10.87	12,000	\$129,960.00
				\$459,394.00

Baidu.com's profits rose 42%; however, the company's fourth quarter revenue projection of \$174 - \$180 million was considerably below the expected projection of \$205 million. This caused shares to fall 11.42%. The company cited the ailing world economy as a reason for this shortfall. I sold my few remaining shares of Baidu.com because it is still plagued by the recession. Advertising, where Baidu.com makes most of its revenue, is a discretionary expenditure that is curtailed during a recession. When recovery returns to the world market, Baidu.com will once again be a strong stock to purchase.

Though Bank of America appears to be a good investment (20.3% projected revenue growth), investors are weary of a continued rally. This skepticism, even in the face of higher than expected Q3 GDP growth, has caused bank stocks to be seriously undervalued. Bank of America is a relatively safe investment in the long-term as the

largest investment bank in the United States. However, in the short-term, Bank of America is not a good investment, as its shares are too volatile and change value drastically as investors hopes and concerns wax and wane. Similarly, Royal Bank of Canada has posted a net income in Q3 of 2009 of \$1.49 B, the highest of the past 10 quarters. However, Royal Bank of Canada's shares have faced similar problems due to a lack of investor confidence. Thus, I have elected to sell these shares until investor confidence in the banking sector returns.

I have chosen to purchase Raytheon shares as the company is well poised to ride out the recession due to its technology-driven product line and large volume of backordered contracts. Though the wars in the Middle East, that the United States is involved in, may be ending, Raytheon will not suffer as defense spending is reduced. Most likely, these changes will be seen in companies that produce low-tech products like bullets and body armor. Raytheon produces advanced sensors and defense systems that are important in today's world and will become more important as the threat of warfare becomes more decentralized. Additionally, 95% of the company's revenue has come from its major contracts, while less than 5% of revenue has come from the company's other outstanding 15,000 contracts. Should the company experience problems with its current major contracts, it could potentially shift its focus to one of these other contracts to make up profits. Lastly, the company's large backlog of \$38.9 B likely indicates that the company's sales are higher than usual.

As the economies of the United States and Europe recover, Activision Blizzard is likely to experience significantly increased profits, especially if the recovery continues through the holiday and summer months, when the majority of new games are sold. With the

company's Guitar Hero and Call of Duty franchises, Activision Blizzard maintains an effective revenue source. In particular, the newest game in the Call of Duty series, Modern Warfare 2, is expected to sell a record number of copies. As of August 5, the game had already broken Activision Blizzard's own record for number of presales with 14 million copies already purchased. The number has certainly increased since August 5 in anticipation of the game's release on November 12. Additionally, the sequel to the best selling real time strategy game of all time, Starcraft II, is due to be released in 2010 by Activision Blizzard. This will also significantly increase the company's profits. In anticipation of the releases of these products, I purchased shares in Activision Blizzard.

#### **4.3.5 Journal for Week of Nov. 2 – Nov. 6, 2009**

This past week, the stock market rallied. This rally was primarily a result of better-than-expected profit and economic reports, the government's decision to extend unemployment benefits, and the homebuyer tax credit. My portfolio also increased in value this week, as can be seen in Table 4.7. From last week, the value of my portfolio has raised \$4,500.00 from \$459,394.00.

**Table 4.7. Week End Portfolio**

<b>Date of Valuation</b>	<b>Symbol</b>	<b>Current Price Per Share</b>	<b>Shares</b>	<b>Total Value</b>
11/6/09	AMTD	\$19.86	5,250	\$104,265.00
11/6/09	RTN	\$45.57	2,800	\$126,784.00
11/6/09	ATVI	\$11.25	12,000	\$129,960.00
11/6/09	SEIC	\$18.05	5,700	\$102,885.00
				\$463,894.00

Raytheon and Activision shares are largely responsible for this increase. Since I purchased shares in Raytheon Co., shares have risen 4.55%. Likewise, since I purchased

shares in Activision Blizzard Inc., shares have risen 3.50%. Shares in TD Ameritrade Holding Cp. have only risen 2.88% in the past week.

As can be seen in Table 4.8, I sold half of my shares in TD Ameritrade, 5,250 shares, to purchase 5,700 shares in SEI Investments Company.

**Table 4.8. Trades for the Week of Nov. 2, 2009**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Total Cash	Total Profit
						\$5,817.77	
11/6/09	AMTD	Sell	\$19.86	5,250	\$104,245.01	\$110,062.78	\$7,688.03
11/6/09	SEIC	Buy	\$18.05	5,700	(\$102,904.99)	\$7,157.79	

I elected to sell some of my TD Ameritrade shares because they have remained relatively stagnant. However, SEI investments has been upgraded from “market perform” to “outperform” by analyst Keefe Bruyette. As can be seen in Figure 4.2, this news prompted a sizeable jump in stock price the following day (the time of this market valuation is highlighted in gold). On hopes of SEIC shares reaching their target price of \$22 per share, I chose again to purchase shares in SEI Investments.



**Figure 4.2. SEIC Stock Chart for Week of Nov. 2 – Nov. 6, 2009**

#### 4.3.6 Journal for Week of Nov. 9 – Nov. 13, 2009

During the final week of the simulation, I sold all of my stocks to evaluate whether I had made a profit or a loss during the simulation. The results of this week's sales can be seen in Table .

**Table 4.9. Trades for the Week of Nov. 9, 2009**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Total Cash	Total Profit
						\$7,157.79	
11/13/09	SEIC	Sell	\$17.99	5,700	\$102,523.01	\$109,680.80	(\$1,236.98)
11/13/09	ATVI	Buy	\$11.66	8,600	(\$100,295.99)	\$9,384.81	
11/13/09	AMTD	Sell	\$20.95	5,250	\$109,967.51	\$119,352.32	(\$54.98)
11/13/09	RTN	Sell	\$49.03	2,800	\$137,264.01	\$256,616.33	\$9,844.02
11/13/09	ATVI	Sell	\$11.69	20,600	\$240,794.01	\$497,410.34	\$10,058.02

I chose to sell my shares of SEI Investments and purchase more shares of Activision Blizzard before the simulation ended because Activision stocks were rising in value steadily at the week's end, due to higher than anticipated Q3 profits and record sales of Call of Duty: Modern Warfare 2. As can be seen in Table , I ended the simulation with \$497,410.34, down 0.51% from \$500,000.00. Profits from selling Raytheon and Activision Blizzard shares (\$9,844.02 and \$10,058.02, respectively) helped to recuperate most of the losses suffered from investments made in Bank of America in previous weeks.

Had the simulation continued, I would have most likely sold most of my other shares in favor of purchasing more Activision Blizzard stocks, especially after the company earned \$310 M in the first 24 hours of the game's release. With unprecedented good reviews for its recent releases ahead of the holiday season, this company's stock most likely will

continue to rise in value over the next several weeks as people continue to flock to stores hoping to purchase Call of Duty: Modern Warfare 2.

## **Chapter 5: Investing in the Life Sciences using Company History and Projected Growth**

### **5.1 Companies Chosen and Reasons**

#### **Gilead (NYSE: GLD)**

Gilead Sciences is a biopharmaceutical company that specializes in the development and sale of therapeutic drugs. Some of their high earning products are designed for the treatment of currently incurable maladies such as HIV, hepatitis B, and cystic fibrosis. These diseases represent persistent viral or genetic problems which plague a patient—or, from a different perspective, a customer-- for a lifetime, and require constant treatment.

One asset that makes this company an attractive prospect for investment is its market-leading HIV drug portfolio. HIV is a catastrophe without rival in modern global health. At the end of 2006, The Joint United Nations Program on HIV/AIDS released these statistics about the HIV pandemic:

- 38.6 million people were living with HIV/AIDS by the end of 2005
- In 2005, 2.8 million people died from HIV related causes.
- In 2005, 4.1 million people worldwide became newly infected with HIV

The hardest hit areas are Third World countries. These populations have the least access to HIV prevention and treatment. However, thanks to charitable foundations such as the Clinton Initiative, this access is increasing (UNAIDS.org).

According to Gilead.com, in July 2009, Gilead Sciences wrapped up a relevant study in CapeTown, South Africa. The study explored the efficacy of HIV drugs taken in absence of routine laboratory monitoring available to patients in wealthier countries. Compared to a group that was provided with therapy, clinical monitoring and laboratory monitoring; a group provided with only therapy and clinical monitoring had similar mortality rates and renal function. Due to ethical issues, there was no control group that went without therapy. However, considering the well-documented progression of untreated AIDS in the past, it was projected by researchers that mortality of participants was reduced by some 60%.

This study indicates that HIV therapy manufacturers will continue to expand into the densely populated market of the Third World. A bigger market may mean more profit, and an increase in stock prices.

Another good indicator is the company's high ROA, ROE, and interest coverage ratio. These statistics indicate that the company makes much more in profit than it consumes in equity, that it uses its assets efficiently, and that it is reliable when it comes to making paying debts (see below).

**Table 5.1: Stock Information: Gilead**

P/E	19.4
EV/EBITDA	13.7
ROA	30.5%
ROE	49.8%
Debt to Equity	0.616
Current Ratio	2.25
Interest Coverage Ratio	73.7

Potential threats to this company include strong competition from other drug makers, such as GlaxoSmithKline and Novartis. There is also the burden of securing FDA approval for new innovations, legislative and regulatory changes which may outlaw or restrict some of its products, and generic drug substitutes which ride the coattails of its R&D department for quick cash. (wikinest.com)

### **Genentech (NYSE: DNA)**

Genentech is another biopharmaceutical company. Its recent, rapid growth has been extremely profitable for investors: annual revenue grew by 77 percent in two years, from \$6.6 billion in 2005 to \$11.7 billion in 2007. In the graph below, one can observe a drastic 30% increase in stock prices in just four months, following the release of a study which proved that a Genentech's drug, Avastin, decreases mortality rates in breast cancer patients.



**Figure 5.1: Stock Prices in US Dollars over Time in Months from May 2007 to March 2008.**

FDA approval of new uses for two of Genentech's drugs, Herceptin and Rituxan, have also boosted sales. Net income and profit margins have steadily grown as the company's core products transitioned from development to the market (wikinest.com). This investor chooses Genentech in hopes that the engineers at Genentech will continue to produce more popular and life-sustaining drugs.

### **Genzyme (NYSE: GENZ)**

Genzyme is a biotech company that has found a niche in catering to the often-marginalized victims of rare disorders. Commercializing drugs for this population accounts for 47% of company revenues (wikinest.com). The company and its chief executive Henri Termeer, are notorious for aggressively acquiring other companies (thedeal.com). Genzyme has consumed nine other biotech firms since May 2004, each one larger than the last. These acquisitions have undeniably contributed to their diversity of products and overall value (New York Times).

Genzyme's two major earners are its products Cerezyme and Renagel, which together comprise about 50% of the company's total revenue. This represents a concentrated risk for an investor, because having only two products in such a pivotal role leaves the company vulnerable to competition. Cerezyme, at least, seems foreseeable safe from this threat. Cerezyme is the only major therapy for Gaucher's Disease, a deadly enzyme deficiency that leads to the accumulation of fat in vital organs. Sales of Cerezyme continue to see steady growth because of the consistent identification of new cases. No significant competition exists at this time for Cerezyme, and the drug has been proven safe and effective (wikinest.com). The success of Cerezyme is the most attractive aspect of this company.

Renegal, meanwhile, which is directly competed with by the drug PhosLo by Fresenius, has held up well under the strain of competition. About half of the US population suffering from renal failure takes Renegal (wikinvest.com).

Below is a table of the company's vital statistics. Its interest coverage ratio reflects a high ability to pay off its debtors, which makes Genzyme seem like a stable company.

**Table 5.2: Stock Information: Genzyme**

P/E	27.3
EV/EBITDA	11.0
ROA	6.1%
ROE	8%
Debt to Equity	0.297
Current Ratio	2.63
Interest Coverage Ratio	529

**Celgene (NYSE: CELG)**

Celgene is a pharmaceutical company that develops and commercializes drugs to treat various disorders, such as blood cancers and ADHD. Reylemid, a drug to treat MDS, or “pre-leukemia,” has been a particularly successful Celgene product. Sales of Reylimid grew from \$3 million in 2005 to over \$320 million in 2006, representing nearly 30% of the company's 2006 revenue. However, this drug may soon lose its popularity due to competition from a new drug from Millemnium, which, though largely untested in the patient population, performed well in clinical trials. Celgene responded to this potential challenge by acquiring Pharmion, a company which caters to a specific subset of blood-cancer patients. Pharmion’s creation, Vidaza, is prescribed to high risk multiple

myeloma patients, while Celgen's Reylimid targets low risk patients. Research continues on better ways to improve the treatment of blood cancers (wikinest.com).

The main attraction to the investor is Celgen's family of Ritalin drugs, which are used to treat Attention Deficit Hyperactive Disorder. Methylphenidates like Ritalin have been used to treat the disorder since the 1960s. The number of prescriptions issued, especially in the United States, has increased dramatically since the 1990s (Wikipedia). Proposed explanations for what has been termed the "Ritalin explosion" range from the optimistic to the cynical, but here are a few from PBS.org:

- Pediatricians are now better able to diagnose ADHD because it has been well characterized.
- Consumers have realized that the drug can be taken during and past adolescence, bringing adults users into the market.
- The introduction of the first truly popular prescription psychiatric drug, Prozac, in the late 80s, paved the way for other psychiatric drugs.
- In the early 1990s, the Department of Education mandated that children with ADHD qualify for special education, but this publically funded aid, such as counseling, is limited unless parents also agree to try medication for the disorder.

Regardless of the causes, the population of patients taking prescription drugs for ADHD is always increasing, and Celgene is providing.

Other reasons for picking Celgene are the company's high current ratio and very high interest coverage ratio. These numbers reflect their short term and long term ability to make payments regarding liability and debt, indicating a stable company. (see below)

**Table 5.3: Stock Information: Celgene**

P/E	79.6
EV/EBITDA	34.3
ROA	6.6%
ROE	8%
Debt to Equity	0.230
Current Ratio	7.34
Interest Coverage Ratio	318

### **Illumina (ILMN)**

Illumina is a leading provider of genomics equipment for researchers, and that lead is growing (finance.aol.com). Illumina has expanded its product portfolio in the last few years by the acquisition of two other biotech suppliers. These were CyVera in 2005 and Solexa in 2007 (wikinvest.com).

The field of genetic engineering is in a state of growth, with new discoveries and new uses for related technologies being innovated every day. Techniques like RNA silencing, which uses RNA to deactivate specific genes, and Viral hijacking, which uses viral capsules as a system of drug delivery, consistently vitalize the industry. It is clear that the need for gene-related products will only increase in this climate of rapid discovery.

Illumina was hit hard by the flagging economy in August of 2008. This may have been due to the fact that the company's major clients are research institutions, which rely

heavily on government grants, and the government itself. The amount of grants offered from government sources decreased during that time. However, this stock has been on the rise since November of 2008, so now may be a good time to buy. This information is represented graphically below:



**Figure 5.2: Stock Performance of Illumina**

Additionally, as the economy recovers, one can expect government grants to increase to normal or even greater than normal levels. The current US administration has been very helpful to the biotech industry, with such actions as repealing the presidential ban on putting tax money towards stem cell research (ABCnews.com). President Obama even announced in his inaugural address an intention to “We will restore science to its rightful place and wield technology's wonders” (New York Times).

Other reasons for choosing Illumina as an investment target are its high P/E and EV/EBITA ratios, which indicate that people are already willing to pay a great deal for these stocks relative to how much the company makes. In this context, these numbers seem to reflect Illumina’s good reputation. They also have a high interest coverage ratio (see below).

**Table 5.4: Stock Information: Illumina**

P/E	85.9
EV/EBITDA	33.6
ROA	5.9%
ROE	9.1%
Debt to Equity	0.572
Current Ratio	2.42
Interest Coverage Ratio	14.0

## 5.2 Weekly Simulation Report

### 5.2.1 Journal for Week of Sept. 21 – Sept. 27, 2009

**09/23/09**

Today I began my Investopedia simulation by “purchasing” stocks in the companies I had researched: Illumina, Genzyme, Gilead Sciences, and Celgene. I had intended to purchase shares from Genentech as well, but this company was not available within the game. Instead, I used the money I would have spent on Genentech to buy more shares in Genzyme. The final tally was as follows (Table 5.5).

**Table 5.5: Initial Purchases**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/23/09							500000	
9/23/09	ILMN	buy	\$39.72	2250	\$89,389.99		427747.59	
9/23/09	GENZ	buy	\$57.21	3508	\$200,695.13		305369.17	
9/23/09	GILD	buy	\$46.09	2173	\$100,173.56		205618.42	
9/23/09	CELG	buy	\$54.04	1850	\$99,992.51		155659.56	

As can be seen, I purchased roughly 100,000 dollars of each company, with extra 100,000 dollars intended for Genentech going to Genzyme. I will monitor these purchases and redistribute the funds according to how successful they are.

**09/24/09**

No purchases were made today. Stocks in Genzyme, Gilead Sciences, and Celgene went down. Since my investment in Genzyme Is doubled, I lost more money in Genzyme than the others did, from its purchase value \$57.21 to its closing value today at 56.63. Stocks in Illumina, on the other hand, increased from its closing value on the 23<sup>rd</sup>, \$40.20, to its closing value today, \$40.36. I am considering decreasing my investment in Genzyme and increasing my investment in Illumina.

**09/25/09**

Today I researched different companies involved in manufacturing vaccines against the swine flu. This strain of H1N1 has caused a lot of concern in my community and globally, and it seems like everyone is eager to get a vaccine. According to cnn.com, the World Health Organization is admonishing wealthy nations who have ordered too much vaccine, because the demand for this good far outpaces the supply. Also according to cnn.com, four companies on the New York Stock Exchange who are making the vaccine at present are AstraZeneca (AZN) Novartis (NVS), GlaxoSmithKline (GSK), and Sanofi-aventis (SNY). To purchase them, I used funds that had been tied up in Genzyme and Celgene. I made the following trades.

**Table 5.6: Purchasing Stock in Swine Flu Vaccine Manufacturers**

Date	Symbol	buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Total Cash	Total Profit
9/25/09	SNY	buy	\$36.74	1057	\$38,854.17		155659.56	
9/25/09	GSK	buy	\$39.19	998	\$39,131.61		155659.56	
9/25/09	NVS	buy	\$48.53	794	\$38,552.81		155659.56	
9/25/09	AZN	buy	\$44.17	884	\$39,066.27		155659.56	
9/25/09	CELG	Sell	\$53.46	900	\$48,094.01	<b>\$475.76</b>	155659.56	<b>\$475.76</b>
9/25/09	GNEZ	sell	\$56.48	1754	\$99,045.93	<b>-\$938.39</b>	155659.56	<b>-\$938.39</b>

As you can see, I reduced my holdings in Genzyme and Celgene by about half, and distributed the funds equally between the four new prospects.

At the end of the day, each of the four new purchases yielded profit except AstraZeneca, which fell from \$44.17 to \$43.91. Illumina’s value continues to increase.

**09/26/09**

Because the market is not open today, I made no trades. I took stock of my position in the game thus far, and how my investments have changed. So far, I have made a profit, and the most profitable investment has been Illumina.

**09/27/09**

No trades can be made today, but I have decided to dedicate my remaining cash funds, \$1,283.89, to purchasing more stock in Illumina. I will also be reducing my holdings in AstraZeneca, after learning that the company plans to cut 113 jobs in Westborough beginning next month (according to the Boston globe article, “AstraZeneca will cut 113 Jobs in Massachusetts.”) I theorize that this action will make the company look unreliable in the public eye and cause the stock to decrease in value.

**09/28/09**

Today I followed through with plans to purchase more stock in Illumina and sell stock in AstraZeneca. The following trades were made.

**Table 5.7: Transactions made on 09/28/2009**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/28/09	ILMN	buy	\$40.96	786	\$32,214.55		500000	
9/28/09	AZN	sell	\$44.98	700	\$31,466.01	<b>\$2,115.00</b>	427747.59	<b>\$2,115.00</b>

I now have only about 100 shares in AZN. At the end of the day, AZN prices had dropped further to 44.76.

### **5.2.2 Journal for Week of Sept. 29 – Oct. 2, 2009**

**09/29/09**

No trades were made today. My overall value has increased from yesterday at \$500,276 to \$507,535, due to the increased value of all stocks except Astrazeneca and Genzyme. This is the biggest increase in my value since the start of the simulation.

**09/30/09**

Today my overall value increased again from \$507,535 to \$510,006. ILMN continues to outperform other investments by rising from \$42.1 to \$42.5.

**10/01/09**

My overall value dropped sharply today from \$510,006 to \$497, 900. All stocks did poorly today, even Illumina. I have searched media sources looking for an explanation,

for perhaps some far-reaching event that affected the market as a whole, but I have yet to find a smoking gun. This may be just poor luck.

**10/02/09**

No trades were made today. Some value was recovered when ILMN increased back to \$42.02. AstraZeneca continues to decrease in value, now at \$43.46.

### **5.2.3 Journal for Week of Oct. 5 – Oct. 9, 2009**

**10/05/09**

Today, all stocks other than those invested in Celgene have increased in value, ringing my total value back into the positive range (a .79% range). More specifically, Gilead Sciences increased by 1.1%, Genzyme corp. increased by .36%, Illumina incorporated increased by 2.21%, AstraZeneca increased by 1.31%, Novartis increased by .48%, GlaxoSmithKline increased by .36%, and Sanofi-aventis increased by 1.32%. Celgene dropped by 1.15%. I take this as a good indication that loss from last week are rebounding, and will probably not make any changes soon, except perhaps to invest even more in Illumina.

**10/06/09**

Today the first shipments of swine flu vaccines are reaching American hospitals, clinics, and schools. Despite concerns over whether the vaccines are safe, many people are pursuing treatment for themselves and their families. The product is in such high demand that shortages are expected, which could be considered positive or negative when it comes to evaluating the related companies. Every one of the vaccine carriers in which I

invested increased in value today. I am very satisfied with this and take it as a sign that I made the right choice. Perhaps flu season in general is a good time to invest in vaccine manufacturers, a lesson for future investing.

**10/07/09**

No trades were made today. Illumina unexpectedly dropped in value, but I am hoping that was merely a hiccup in what has been a clear road to profit with this company.

**10/09/09**

No trades were made today. Overall, this week has been very successful. My total value has increased to \$507, 800.75, up from the depths of last week when I had lost money. I am considering investing more money in Novartis and Illumina, which have been the highest earners, while drawing money away from Gilead Sciences and Genzyme, which have actually cost me money (totaling about 3000 dollars). I will set up a trade to that effect on Sunday evening to take place Monday morning.

#### **5.2.4 Journal for Week of Oct. 26 – Oct. 30, 2009**

**10/26/09**

No trades were made today. Illumina's decline since October 22 is beginning to concern me. My most successful stock is plummeting. At this point, I am going to stay with it since this stock has been so successful in the past, but soon I may be forced to sell.

**10/30/09**

Today, I am selling two stocks in their entirety, Illumina, and GileadSciences. The reason for Illumina's tumble from grace can be explained by their reported guidance for next year. According to Wikinvest.com, the company has changed its projected revenue from \$720 million down to \$651 million. As for my selling of Gilead Sciences, this stock has been performing mostly in the negative since the beginning of the simulation, with infrequent large jumps in profit. I do not want to risk this turning into a disaster, so I am selling it now for a loss of about seven dollars.

**Table 5.8: Transactions made on 10/30/2009**

<b>Date</b>	<b>Symbo l</b>	<b>buy / Sell</b>	<b>Price</b>	<b>Shares</b>	<b>Net Cost/ Proceeds</b>	<b>Profit/ Loss</b>	<b>Total Cash</b>	<b>Total Profit</b>
10/30/09	GILD	Sell	\$32.97	3036	\$100,076.93	(\$6,949.56)	\$466,085.80	(\$33914.30)
10/30/09	ILMN	Sell	\$42.91	2173	\$93,223.44	(\$21,59.00)	\$465,760.09	(\$43239.81)

### **5.2.5 Journal for Week of Nov. 2 – Nov. 6, 2009**

**11/2/09**

Today I researched why one of my stocks, Genzyme, has dropped so much since the start of the simulation. According to wikinvest and the Wall Street Journal, contamination in one of Genzyme's major plants has caused repeated delays in shipping, causing a loss of profits. They recently announced that their third quarter profits would be 87% less than previously projected, causing many investors to lose confidence. This occurred despite the announcement of a novel new drug. In cooperation with a Netherlands based innovator, Genzyme admitted its first patient for testing its new drug in late October. The

drug is designed to penetrate the blood-brain barrier, or BBB, and deliver a toxin that targets Goucher's disease.

Since the announced loss in earnings has already been made, however, I project that any further changes in this stock will be a recovery in the opposite direction.

**11/3/09**

Today on Mad Money, a television personality gave a promising review of Celgene. His analysis was based on the fact that there is a conference coming up on December 5<sup>th</sup> where leading makers of blood cancer drugs, like Celgene, will be comparing notes. Speculations on what Celgene has been working on may drive stock prices upwards, and the fact that this phenomenon has been mentioned on TV makes it even more likely. Trading the stock just before the conference could protect one from a devastating drop. Although it is currently down in value by about 1%, I plan to take this advice and hold onto this stock until the end of November.

**11/4/09**

Novartis has been one of the most successful stocks I have purchased. Today, they paid a large bid to gain control of an 85 percent stake in the Chinese vaccine maker Zhejiang Taiyuan Bio-Pharmaceutical. The Swiss company has expressed an interest in cornering the emerging inoculations market, perhaps because of the success which news agencies and healthcare officials have alarmed consumers about the dangers of epidemics. Further, they recently announced they would be spending more than a billion dollars building plants in China. Investors seem to think that a growing company is a healthy company. Below, you can see a graph of the upward trend Novartis has taken since July.



**Figure 4.3: NVS Stock Continues to Increase**

**11/5/09**

GlaxoSmithKline continues to turn a modest profit. It has recently gained attention as the first and only producer of an approved swine flu vaccine in all of Saudi Arabia. Other drugs from other companies are available, but they have yet to gain the approval of the equivalent of our FDA.

Mecca, a site for massive pilgrimages for Muslims, tends to be very congested with highly mobile traffic, which could potentially make it a hotbed for spreading disease. For this reason, some Saudi officials have come out in favor of inoculations. However, they have to contend with negative propaganda accusing all vaccinations as Western attempts to emasculate Muslims.

**11/6/09**

Today, Business week reported that the Boniva Ad campaign, which encourages patients to ask their doctor about an osteoporosis drug manufactured by GlaxoSmithKline, has been the most successful ad campaign this year. In a study that anonymously collected

data from patient doctor conversations, Boniva was the most asked for drug. However, the article concludes that most drug ad campaigns have a negative effect on drug purchases, probably due to the legal precaution requiring companies to disclose information about potential side effects in their ads. Sales of Ambien, a drug manufactured by Sanofi Aventis, fell by 37% after a memorable ad campaign that cautioned viewers about sleep eating.

### **5.2.6 Journal for Week of Nov. 9 – Nov. 13, 2009**

**11/9/09**

Today, the US Supreme court will be hearing a case that could potentially cause a lot of damage to many companies. This issue at stake is the rights of companies to use abstract ideas that were developed from outside their companies. For example, in the field that my stocks have specialized in, one company might use information about a gene sequence that another company uncovered. Can this information be property? Novartis is arguing in court that yes, it should be, and ruling otherwise would “discourage innovation.” On the other side of the bench are companies that are desperately trying to head off infringement suits. These companies, who have been using the ideas of others all along, might be held responsible for violating intellectual property. They would be responsible for many damages, and I would expect their values to plummet.

**11/10/09**

The first information release in preparation for the ASH meeting referenced in last week's journal occurred today. Scientists made the abstracts of the papers available, that they will be presenting to the other researchers with whom they will be meeting. I'm

hoping that it will have a positive effect on the Celgene stock. Reclaimed, the blood cancer drug produced by this company is being researched for its dose-dependent effects. One topic at the conference will be how much Relvamid does a cancer patient need, and does its use outweigh its side effects?

**11/11/09**

Today, a press release from Genzyme announced that they and a partner company, Isis, will be presenting data about phase 3 trials of a new drug to the AHA. Depending upon the results of their evaluation, Genzyme stock could go up or down. My plan is to keep the stock, in case speculation drives the price upwards. However, I would sell this stock before November 17, which is when the AHA will be releasing their decision. For me, it is not worth the risk. Also today, GlaxoSmithKline's swine flu vaccine won US approval. Surprisingly, this was not followed with a large increase in stock value.

**11/12/09**

According to the Boston Globe, Sarnoff-Aventis has been trolling for business partners. Looking for small startup companies that may want to combine their ideas with Snafu's funding, the company is seeking to grow. Like Genzyme, Snafu's strategy is to grow larger by assimilation. This may be a sign of stagnation in their native research and development departments, but whatever the reasons, acquiring new blood can only be a boon to the company.

**11/13/09**

Today, a poll in Weekly showed that 62 percent of Americans are dissatisfied with the rate at which the H1N1 flu vaccine is reaching the market. While it is true that none of the companies have been able to meet their set deadlines, this is mostly due to characteristics

of the virus itself. Unlike the rescuer seasonal flu virus, it does not multiply as quickly. In addition, US consumers are reluctant to embrace adjuvant technology, a nasal spray form of the vaccine. This vector would allow drug makers to produce more vaccines, each with less actual virus, but which are allay effective.

## **Chapter 6: Video Game Industry Stocks with Historically Strong Market Performance**

### **6.1 Strategies Employed**

I chose stocks that have historically done very well, choosing primarily from companies that are involved in the video game industry in some way, since I know the industry well and follow it regularly. I found the top publishers as well as the top console developers based on how they have performed in the market over the years and recently. However, I wanted to diversify a bit so my final choice was from outside this area. Because most video game sales come near the end of the year starting in the holiday season with Thanksgiving, I think these companies would be a wise place to invest for our simulation, which will be ending in the later part of the year.

### **6.2 Companies Chosen and Reasons**

**Activision-Blizzard (ATVI)** is a publisher and distributor of video games for the PC and video game console markets. Activision's largest franchises include the Guitar Hero, Tony Hawk, Quake, and Call of Duty series. In 2007, three of the top-10 selling games were Activision Titles

In December 2007, Activision announced it would be acquiring Vivendi's video game division, Blizzard, in a deal that resulted in Vivendi owning a majority of shares in Activision. Blizzard is a publisher of popular games like the Starcraft and the Diablo series, as well as its major online game, World of Warcraft. The addition of Blizzard created a larger company, allowing Activision to compete with Electronic Arts (its primary competitor) more efficiently in the online gaming market. In addition, because

World of Warcraft charges a monthly fee, the company is now able to make money in China, whereas before many companies have been unsuccessful because of the large amount of software piracy.

Activision-Blizzard has stuck to a simple formula of developing successful game franchises and launching a series of sequels, due to the video game industry's striking similarities to the movie business. Because a game has to do well in order to make money, and there is no money made during development, it is very risky for a company to constantly release games that do not lead to franchises. This formula has allowed Activision-Blizzard to stay on top of the industry along with its major competitors.

Activision's stock peaked at 18.62 in July of 2008, and is currently trading at 11.79, leaving a good amount of room for growth. The 52-week low price was 8.14, so at the very least, it seems to be steadily growing back towards where it was. With the consistent success of World of Warcraft and a good deal of hyped games coming out in the next few months, Activision-Blizzard is going places, fast. To me it seems like a very good company to invest in.

**Table 6.1: Stock Information: Activision-Blizzard**

Company	Activision-Blizzard
Market Cap (\$ Millions)	14,990
Avg Volume (3 Month) (1000s)	151
52-Week High Price	15.39
52-Week Low Price	8.14
Current Price	11.79

**Konami Corporation (KNM)** was founded in Osaka, Japan in 1969 by Mr. Kagemasa Kozuki. It has seen most of its success over the last fifteen years with the Metal Gear series, Castlevania series, Suikoden series, Contra series, and Silent Hill series.

Its first foray into the video game industry was in October 1982, when it began manufacturing and selling PC games. Its first real success, however, came when the Famicom became popular and was released in the United States as the Nintendo Entertainment System. Most of the most popular and best-selling games for the system were created by Konami, including Metal Gear, Contra, and Castlevania. At the time, Nintendo limited third party companies to only five games per year, but Konami managed to double this number by creating a quasi-independent subsidiary corporation known as Ultra Games. This allowed Konami to continue to dominate the third party publisher industry, which was still relatively new at the time.

Konami's success has continued into recent years, standing the test of time and remaining on the top of the market along with its competitors. Its most recent success, Metal Gear Solid 4, has shipped over 3 million copies worldwide since its release. In addition, the game was bundled with the Playstation 3 console, which helped increase sales of the system, which has historically not sold very well. As of now, the game is the best selling PS3 exclusive game, which is a good sign for Konami.

Konami has done very well historically, and its stock peaked at 42.4 in 2008. It is currently trading at 20.80, up from a low of 12.97 in early 2009. This leaves room for growth, and the steady increase over the last few months seems to indicate that the

company is doing well. The coming months are usually the best for the video game industry, with most of the big releases coming out near the holiday season. This means Konami has nowhere to go but up, and I think it would be a good company in which to invest.

**Table 6.2: Stock Information: Konami**

Company	Konami
Market Cap (\$ Millions)	2,790
Avg Volume (3 Month) (1000s)	1.879
52-Week High Price	26.64
52-Week Low Price	12.77
Current Price	20.80

**Take-Two Interactive Software, Inc. (TTWO)** is a leading worldwide publisher, developer and distributor of video game software, hardware and accessories. Some of their biggest franchises include Sid Meier's Civilization, Max Payne, Midnight Club, Manhunt, Red Dead Revolver, BioShock, Sid Meier's Railroads!, Sid Meier's Pirates!, and Top Spin. Licensed brands include the sports games Major League Baseball® 2K, NBA® 2K, and NHL® 2K.

It is best known for its Grand Theft Auto franchise, which has sold over 66 million units across the multiple titles and is highly controversial due to its extremely violent subject matter. Grand Theft Auto 4, the newest title in the series, earned more than \$500 Million in its first week of release. In 2008, competitor Electronic Arts offered to buy out Take-Two, but the board rejected the initial offer due to expected strong sales

of Grand Theft Auto 4. After the game's release, Take-Two's stock price rose above EA's offered price

The success of Bioshock and its expected sequel also seem to indicate that Take-Two will be able to hold its own as an independent company, especially given the hit-driven nature of the industry. Its stock is currently trading at 11.73, down from a peak of 26.5 in 2008. There seems to be room to grow, and it has grown from a 52-week low of 5.83 to where it is now so it seems to be in good shape. Given the hype of Bioshock 2 and other games coming out in the next few months, I think buying stock in Take-Two is a very good choice.

**Table 6.3: Stock Information: Take-Two**

Company	Take-Two
Market Cap (\$ Millions)	952
Avg Volume (3 Month) (1000s)	1,346
52-Week High Price	17.31
52-Week Low Price	5.56
Current Price	11.73

**Electronic Arts (ERTS)** is the world's largest publisher of video game software. EA has risen to the top mostly due to its success with acquisitions of licensing rights to games and studios, including top developers such as Bioware and Mythic Entertainment. EA's attempt to acquire Take-Two was most likely born out of the need to create hit games to stay ahead of the competition. However, the takeover was abandoned on August 18, 2008 after Take-Two did not accept the given offer.

In 2008, the company distributed its new hit franchise, Rock Band, which accounted for 10% of the company's overall revenue during the year. This was followed by Rock Band 2 the next year, and the Beatles Rock band the year after that, securing the series as a key franchise in EA's operations. With the success of this and other major titles, such as Madden NFL, Need for Speed, Command & Conquer, Battlefield, Spore, Pogo.com, and Fifa, EA doesn't seem to be losing its edge.

EA operates under a few publishing labels, including EA Games, EA Sports, The Sims, and EA Casual Entertainment.

Historically, EA's stock has consistently done very well. It suffered like many other companies during the recession, but seeing as how most successful video games are released during the end of the year, it has nowhere to go but up with the recent release of The Beatles: Rock Band and the future releases it has in store. It is currently trading at 18.71, up from a 52 week low of 14.24, and its peak in the last three years was at 61.4, leaving a very large amount of room to grow. I think at this point, the stock is priced very low and will only increase in the coming months, making it a wise investment choice.

**Table 6.4: Stock Information: Electronic Arts**

Company	Electronic Arts
Market Cap (\$ Millions)	6,050
Avg Volume (3 Month) (1000s)	6,512
52-Week High Price	45.10
52-Week Low Price	14.24
Current Price	18.71

**Nintendo (NTDOY)** originally started as a Japanese company selling playing cards over a hundred years ago, and eventually grew into one of the biggest companies in the video game industry. Its biggest success came when it was able to survive the infamous Video game crash of 1983 with the release of the Famicom (Family Computer) video game console in Japan. In 1985, the Famicom was released in North America as the Nintendo Entertainment System, the name for which it is best known for in the United States.

Nintendo came out on top during those years as the most popular of the gaming consoles, and in 1989, the release of the Game Boy entered the company into the handheld gaming market, which it has continuously dominated for the past 20 years. To date, Nintendo is the longest-surviving video game console manufacturer. This gives it an edge over Sony and Microsoft, who are much newer comparatively.

In recent years, Nintendo's Wii system and DS handheld have been a part of their strategy to expand the consumer market for video games by creating products that are simple and easy to use, as well as developing games that may appeal to casual, female, and 35+ gamers. Both systems have been accepted by consumers and have resulted in a huge deal of success. Nintendo seems to stay alive by constantly releasing the most innovative products that reach out to all types of consumers, and it shows no signs of quitting given the success of the Wii.

As of now, Nintendo is trading at 33.61, up from a 52-week low of 32.2. This is not significant, but it did peak in mid-2007 at 76.8, which leaves a significant amount of growth. I think at this point, before the holiday season and the massive influx of games

to come out of Nintendo’s publishing section, this is a low price and a good point to buy at. Holiday season of 2009 saw the stock peak at 48 (up from a low of 35.1 a few months earlier), which was right around the beginning of the economic recession. If this were any indication, this would be a very good stock to invest in, especially for the entire simulation.

**Table 6.5: Stock Information: Nintendo CO LTD**

Company	Nintendo CO LTD
Market Cap (\$ Millions)	N/A
Avg Volume (3 Month) (1000s)	70
52-Week High Price	67.65
52-Week Low Price	33.31
Current Price	33.61

**Sony (SNE)** is an international corporation with major businesses in electronics, video games, movies, and finance. It began as a small Japanese electronics company, but rose to success after producing the first successful pocket-sized transistor radio. Over fifty years later, Sony is one of the largest media companies in the world, with annual revenue of 86.8 billion in FY 2007.

Based in Tokyo, it operates in the US under an umbrella company (Sony Corporation of America). It is best known for being a manufacturer of home electronics, but it made its debut in the video game industry with the release of the PlayStation in 1994. This was followed by the PlayStation 2 in 2000, and the PlayStation 3 in 2006.

The PlayStation 2 became the most successful video game console of all time, selling over 140 million units.

Although the PlayStation 3 has not done as well as the Xbox 360 or the Wii in sales, it was a significant factor in the emergence of Blu-ray as the dominant medium for Hi-Definition DVDs. This has secured Sony's place in home theater market, which is now almost exclusively dedicated to Blu-ray.

Sony is currently trading at 28.46, up from a 52-week low of 16.6. Its growth over the past year has not been significant, but it peaked at 56.75 in late 2007, so it still has a good deal of room. I think all of this makes Sony a very good choice of stock for this simulation.

**Microsoft (MSFT)** is the world's largest software maker by revenue, with 60.42 billion of revenue showing an 18% increase from 2007. Most of its revenue comes from sales of Windows, Office, and Server & Tools software products. Microsoft's Online Services and Entertainment Division include the Xbox 360, Zune, and PC Software games, and in 2007, it saw its first operationally profitable year.

Microsoft was founded in 1975 by Paul Allen and Bill Gates, and has been steadily building a dominant place in the computer industry ever since. In 1992, it introduced the Windows 3.1 operating system, which created a successful revenue source for the company. The release of Windows 95 and 98 again consolidated the lead in the industry, as did the Microsoft Office software. Nowadays, its total desktop operating system market share exceeds 90%.

Microsoft first entered into the video game market with the release of the Xbox in late 2001. The industry had been dominated by Sony and Nintendo up until that point, but Microsoft managed to hold its own and even followed it up with the release of the Xbox 360.

Historically, Microsoft's stock has done very well, creating billionaires out of the original few who were involved in initial public offering. It is currently trading at 25.26, up from a 52-week low of 15.28 in mid-2009. The past few months have seen the price rise at a good rate, and the price did peak in mid July 2008 at 37.08 so there is room for growth. With the release of Windows 7 in the next few months, I believe Microsoft will do very well, and is a good choice for this simulation.

**Table 6.6: Stock Information: Microsoft Corporation**

Company	Microsoft Corporation
Market Cap (\$ Millions)	225,000
Avg Volume (3 Month) (1000s)	68,016
52-Week High Price	27.66
52-Week Low Price	14.87
Current Price	25.26

**PepsiCo (PEP)** is a global manufacturer, distributor, and marketer of food and beverages. It owns many well-known brands including Pepsi, Frito-Lay, Tropicana, Gatorade, and Quaker Oats. PepsiCo owns 39% of the market share in snacks, and 25% of the market share in non-alcoholic beverages, making it the largest producer in both categories. Despite the fact that the carbonated drink market has been declining since the

mid-2000s, PepsiCo has used product diversification and international expansion to allow it to grow.

PepsiCo's main advantage over rival Coca-Cola Company is that the majority of its revenues do not come from soft drinks. Over 60% of the company's beverage sales have come from noncarbonated brands, such as Gatorade and Tropicana, and less than 50% of the company's total revenue comes from beverage sales. With a growing trend towards more healthy drink alternatives in recent years, this is most likely a very good strategy for PepsiCo.

Seeing as how most of my investments are companies involved in the video game industry, I thought it would be wise to go with a company outside of the group to invest in for the long run. Historically, PepsiCo has done very well and is one of the top companies in the food and beverage market. Since food is a staple of human life, it seems as if this would be a wise, stable choice for my portfolio.

In addition, PepsiCo shares peaked at \$78.46 per share at the end of 2007, and its stock has only dipped down to a 52 week low of 47.1. It is currently trading at 59.86, and has been growing at a high, steady rate for the last few months, leaving a good deal of room for growth. I think this makes PepsiCo a wise investment choice for this simulation

**Table 6.7: Stock Information: PepsiCo Inc**

Company	PepsiCo Inc
Market Cap (\$ Millions)	93,250
Avg Volume (3 Month) (1000s)	14,646
52-Week High Price	75.25
52-Week Low Price	42.78
Current Price	59.86

### **6.3 Weekly Simulation Report**

#### **6.3.1 Journal for Week of Sept. 21 – Sept. 27, 2009**

**9/21/09**

Today was the first day of the simulation, so I had to decide how to split up the \$500,000 I had to spend. I decided I would start out by evenly distributing roughly \$50,000 to each of the eight stocks, leaving me with about \$100,000 to distribute later to stocks I felt would do the best.

However, due to the rules of the game, I was not able to buy 50,000 worth of stock in Konami since that would exceed 10% of the stock's real life trading volume. I ended up only buying 260 shares, the max that I could buy, for \$5,438. This left me with another 44,500 to distribute once I would put 50,000 into the rest of the stocks, adding to the 100,000 I already had.

I bought my first seven stocks, but due to the 20-minute time delay on purchases, I left PepsiCo alone until my purchases were finalized so I would have a better understanding of how much money I had left.

After my initial purchases were finished, I decided to put some more money into Microsoft and Activision since I felt they would do the best for me over the course of the simulation. I also still had to buy stock in PepsiCo, so I put \$50,000 more into Microsoft, and then divided up what I had left (about \$144,000) into two parts and put one half into Activision and another half into PepsiCo.

**Table 6.8: Day 1 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/21/09							500000	
9/21/09	PEP	buy	\$59.11	1222	\$72,252.41		427747.59	
9/21/09	ATVI	buy	\$12.29	9951	\$122,378.42		305369.17	
9/21/09	MSFT	buy	\$25.21	3956	\$99,750.75		205618.42	
9/21/09	SNE	buy	\$28.23	1769	\$49,958.86		155659.56	
9/21/09	NTDOY	buy	\$33.03	1511	\$49,928.32		105731.24	
9/21/09	ERTS	buy	\$18.43	2717	\$50094.30		55636.94	
9/21/09	TTWO	buy	\$11.22	4480	\$50,285.59		5478.63	
9/21/09	KNM	buy	\$20.75	260	\$5,414.99		63.63	

### 9/22/09

Because I was only able to buy about \$5,500 worth of stock in Konami on the first day, I decided today to sell some of my stock in Activision so I would have enough to buy another \$5,500 (the max I could for today) in Konami. This was mostly due to the fact that I saw Konami was doing just about the best percentage wise of all my stocks, and I wanted to increase the stake I had in them to something more reasonable (instead of only 1% of my total starting cash) in case they continued to do better in the future.

I took no other action, since I did not see any significant change.

**Table 6.9: Day 2 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/22/09							63.63	
9/22/09	ATVI	sell	\$12.37	445	\$5,484.66	35.60	5548.29	35.60
9/22/09	KNM	buy	\$21.30	255	\$5,451.49		30.47	

**9/23/09**

I decided today that I needed more cash to spend on future stock purchases, since having about \$30 to spend was nowhere near enough. I sold about \$18,000 in Activision-Blizzard and \$21,000 in PepsiCo so that things would be a little bit more even overall, which is how I wanted my portfolio to look in the beginning. I ended up with about \$39,000 in cash, enough to buy another \$3,500 in Konami, which I noticed was down from when I initially bought it. I thought this would be a good time to buy more, since I assumed it would go up in the coming days.

After rumors that Microsoft is interested in buying Electronic Arts, EA's stock went up by about 8% over the course of the day. I saw this as a good opportunity to buy another 1200 shares for about \$24,000, since I am hoping it will continue to go up now, and if any more news on a possible buyout comes out in the next few days, hopefully it will go up even more

**Table 6.10: Day 3 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/23/09							63.63	
9/23/09	PEP	sell	\$58.78	357	\$20,984.46	117.87	21014.93	117.87
9/23/09	ATVI	sell	\$12.53	1459	\$18,279.52	350.16	39294.45	385.76
9/23/09	ERTS	buy	\$20.06	1200	\$24,071.88		15222.57	
9/23/09	KNM	buy	\$20.92	170	\$3,556.4		11525.27	

**9/24/09**

Today, Microsoft denied the rumors that it was thinking of buying out EA. Its stock dropped, prompting me to sell all the shares I had bought the day before. I took a loss on the purchase, but overall I remained positive on EA so I was happy. I took no other action today.

**Table 6.11: Day 4 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/23/09							11525.27	
9/23/09	ERTS	sell	\$19.26	1297	\$24,960.10	428.01	36485.37	428.01

**9/25/09**

Today I did relatively well, but Konami's stock is continuing to drop so I decided to buy more shares in it to get all of my stocks to an even level for the end of the first week. Next week, after the weekend has had its effect on the market, I'll stop being so even with my purchase choices. Other than that, I took no other action since I was still in the positive.

**9/28/09**

The weekend proved well for my stocks, as at opening my portfolio was up about \$8,000. I considered selling some of Microsoft, which was up about \$3,000, but I am hoping it will continue to rise so I can make an even bigger profit in the coming days. By the end of the day, I had taken no action, either buying or selling.

### 6.3.2 Journal for Week of Sept. 29 – Oct. 2, 2009

**9/29/09**

The market continued to do well today, but there was not enough of a gain for me to consider selling any of my shares. I considered buying more shares in Konami, but so far they haven't been proving successful for me so I decided to hold off for now. I took no other action today in the hopes that things will continue to improve

**9/30/09**

Today I finally decided I would abandon my stock in Konami, since it has not been doing well for me and with the volume cap I haven't been able to trade more than about \$5,000 worth of shares per day. It was becoming too much of a hassle. I was only able to sell about \$2,200 worth today, but hopefully in the coming days I can get rid of the rest and maybe reinvest my money in another company. Today I also decided to invest about \$20,000 in Sony, since they have been doing so well for me and am at the top of my list of stocks in terms of percentage. Other than that, I took no action.

**Table 6.12: Day 8 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
9/30/09							36485.37	
9/30/09	SNE	buy	\$29.31	1297	\$20,018.73		16466.64	
9/30/09	KNM	sell	\$20.22	110	\$2224.21	85.80	18690.85	85.80

**10/1/09**

Today all of my stocks took a nasty turn, and all of the gains I had been making over the past few days are now gone. By the end of the day, I was down about \$5,000 but I took no action. Selling now would only result in a loss that would probably be

made up for in the coming weeks, and at this point, I do not have enough cash to invest in anything. My plan to get rid of Konami will have to wait until the price stabilizes a bit more.

**10/2/09**

My stocks dropped even lower today, bringing me down about \$12,000 by the end of the day. The only saving grace was PepsiCo, which is up about \$1,500. In the hopes that things will get better by next week, I took no action today.

### **6.3.3 Journal for Week of Oct. 5 – Oct. 9, 2009**

**10/5/09**

My stocks continued to drop and I continued to hold out, hoping they would go back up soon.

**10/7/09**

My portfolio finally bounced back up today, but it was not enough for me to take action. I waited on the hopes that it would go up again soon.

**10/8/09**

Today my stocks rocketed up today, bringing my total profit up to about \$10,000. By day's end, I decided that tomorrow I would sell some of my best stocks and buy into a company that I thought was at a low.

**10/9/09**

Although I had planned to sell off and buy more today, I took no action. I plan to follow through on my original plan come Monday.

**10/13/09**

Today I decided to sell all of my shares in Electronic Arts because I was up a very good deal since my last purchase. I gained \$55,000 in cash, which I decided to keep until I found something to purchase with it.

**Table 6.13: Day 17 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
10/13/09								
10/13/09	ERTS	sell	\$20.90	2620	\$54,738.01	6,471.4	73,428.86	6,899.41

**10/15/09**

Today, I noticed that EA's stock price had dropped by about 70 cents since I sold it, and that it was going back up after having dropped in the days before. I decided to purchase another \$45,000 worth of it on the hopes that it would continue to rise. I also decided to sell \$55,000 worth of my shares in Microsoft, since I was up about \$5,000 since I had purchased them and I hoped to secure my profits by gaining some cash.

**Table 6.14: Day 19 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
10/15/09							73,428.86	
10/15/09	ERTS	buy	\$20.18	2966	\$59,874.17		13,554.69	
10/15/09	MSFT	sell	\$26.59	2068	\$54,968.13	2,853.64	68,522.82	2,853.64

### 6.3.4 Journal for Week of Oct. 26 – Oct. 30, 2009

**10/27/09**

Today after over a week and a half without trades I decided to sell some shares to gain some cash from my profits. I sold the rest of my shares in Microsoft since I was up about \$4,000 from my last sale. I noticed that EA's stock had dropped significantly since my last trade, so I decided to buy another \$45,000 worth since I hoped it had reached something of a low and that it would continue to go back up in the future. Finally, I sold all of my shares in Take-Two since I was up about \$6,000.

**Table 6.15: Day 27 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
10/27/09							68,522.82	
10/27/09	ERTS	buy	\$19.00	2371	\$45,068.99		23,453.83	
10/27/09	TTWO	sell	\$12.20	4480	\$54,636.01	4,390.40	78,089.84	4,390.40
10/27/09	MSFT	sell	\$28.59	1888	\$53,957.93	5,311.07	132,047.77	8,164.71

**10/28/09**

Today I bought more stock in EA, since it was dropping even lower. I did the same with Activision, since it too was dropping and I hoped it had reached a low. I figured with so many games coming out in the coming months the stock could only go up and I could make a profit on both of them.

**Table 6.16: Day 28 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
10/27/09							132,047.77	
10/27/09	ERTS	buy	\$18.65	2733	\$50,990.44		81,057.33	
10/27/09	ATVI	buy	\$11.54	4931	\$56,923.73		24,118.50	

**10/29/09**

Although I had planned to take action today, I had dropped far too much to sell anything. With no available cash I did not buy anything either.

**10/30/09**

My portfolio dropped even more today, bringing me to a total of about \$25,000 in losses. I decided to take no action since I wanted to wait until I went back up.

### **6.3.5 Journal for Week of Nov. 2 – Nov. 6, 2009**

**11/2/09** – My stocks continued to drop, bringing me down to about \$36,000 in losses total.

**11/3/09** – Today My portfolio went down a bit, but it was not significant. I am still around \$36,000 in losses. I took no action because of this.

**11/4/09** – I gained some money overall today, but it was not enough to take notice. I am still deep in a hole and waiting for my portfolio to improve. I took no action at all.

**11/5/09** – Today was the first day all week that I made a substantial gain, with an \$8,000 increase for the day which encouraged me. Despite this, all of my stocks were still too low to take any action.

**11/6/09** – I decided to spend my remaining \$24,000 today, and after looking for awhile I invested in Sprint Nextel, since the stock was down to about 2.85; a price I could only assume was just about rock bottom. With nowhere to go but up, I bought 8,421 shares, the max I could with the cash that I had left. Overall, my stocks did very well today, cutting my total losses to only \$10,000, which encouraged me even more. I took no other actions.

**Table 6.17: Day 35 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
11/6/09	N	buy	\$2.85	8421	\$24,019.84		98.66	

**6.3.6 Journal for Week of Nov. 9 – Nov. 13, 2009**

**11/9/09** – My portfolio gained quite a bit today, bringing me up about \$10,000 in overall profit. However, I decided not to take any action today in the hopes it would go up even more tomorrow.

**11/10/09** – My decision to wait was not the optimal move, as today my stocks plummeted back down to about where they were on Friday. I decided to secure some profits by selling about half of my stock in both Sony and Pepsi, since they were up the most out of all of the stocks in my portfolio. Sprint was doing surprisingly well, but I did not foresee it going down so I did not sell it.

**11/11/09** – Today I noticed Sprint was doing well, but had dropped down to below what they were at the day before. I took this as a sign to buy even more stock, so I bought 10,000 shares worth. My portfolio continued to drop overall, so I did not take any other action

**11/12/09** – My stocks were dropping even lower, so I didn't take any action today. Sprint has remained about stationary since I bought more stock in it, so I did not do anything with it despite the fact that it is currently in the positive.

**11/13/09** – Today being the last day of the simulation, I decided that taking action would not make much of a difference, especially since my portfolio was down about \$14,500.

**Table 6.18: Week 8 Transaction Record**

Date	Symbol	buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
11/10/09	PEP	sell	\$62.00	209	\$12,938.01	\$604.01	13,036.67	\$604.01
11/10/09	SNE	sell	\$29.21	719	\$20,982.00	\$488.92	34,018.67	\$488.92
11/11/09	S	buy	\$3.18	10,000	\$31,819.99		2,198.68	

## **Chapter 7: Investing in Technology and Shoe Manufacturing Sectors using the Income and Growth Strategies**

This chapter introduces and evaluates some of the technology giants and the world leading shoe manufacturer for investment. Income investing and growth investing strategies are employed. The backgrounds of the selected companies are described in this section with the reason behind each selection. Recent performance of the companies is also discussed qualitatively and quantitatively.

### **7.1 Strategies employed**

#### *Income Investing Strategy*

This is the strategy by which you invest in the companies that are able to provide steady stream income. It is also one of the most straightforward investing strategies in the stock market. Companies that are able to provide steady income are normally the ones that are not expanding and have a rich history and background. Mature firms tend to not reinvest themselves, but instead, they give the retained earnings to the shareholders as dividends. The main reason is that the well-established firms are no longer targeting for any rapid expansion.

On the other hand, income investing is not just about investing in large and mature companies. More importantly, it is about investing in companies that are able to provide the highest dividend yield. Dividend yield is calculated by dividing the annual dividend per share by share price. For instance, the dividend yields for the fortune 500 companies are all around 2-3%. However, the income investors demands much higher than that with a minimum at about 6% minimum. In the other words, a \$1 million

investment will have a dividend yield at about \$60,000. In conclusion, the key in income investing strategy is to look for good companies with sustainable high dividend yield to receive a steady income over the long term. Companies such as Yahoo, Google, Apple, Nike, Amazon, Dell, HP, and Nokia are well-established companies with the ability to provide a steady stream income to their shareholders.

### *Growth Investing Strategy*

This strategy is exactly the opposite of the value strategy. Growth strategy focuses more on investing the new companies with a short-term expectation that the company will expand rapidly. I believe that direct growth will translate into an increase in stock price. Unlike the income investing strategy, the form of profit for growth investors are capital gains as the young companies tend to reinvest themselves usually for technology innovations. Furthermore, there is no automatic formula to measure the company's potential to grow. Growth investors use a set criterion as a framework for analysis.

There are several guidelines listed by NAIC (National Association of Investors Corp.). Different growth should be expected from firms of different sizes.

**Table 7.1: Criteria of Growth Investing Strategy**

<b>Company Size</b>	<b>Minimum Growth (In last 5 years)</b>
> \$4 Billion	5%
> \$400 Million > \$4 Billion	7%
< \$400 Million	12%

Additionally, the future projected growth rate should be between 10 to 12%. However, since these are just the projection for future growth, the uncertainty is huge, hence higher risks. Companies such as Google and Yahoo have a strong potential for growth. For Google, the stock price peaked at \$690 before the stock market crashed, with the current price at \$475, there is a very strong potential for growth. For Yahoo, the possible merger with Microsoft will bring them back to the top of the online business and search engine market.

The growth investing strategy is a lot more risky than the income investing strategy. However, the potential of expanding and drastic rise in stock price make the growth strategy very tempting for risk takers.

## **7.2 Companies Chosen and Reasons**

### **NOKIA (NOK):**

Nokia is the world leading cell phone company with a long and interesting history. The company was first founded in 1865 by Fredrik Idestam. Interestingly, Nokia first

established itself as a paper mill in southwestern Finland. From 1865 to 1967, Nokia became a major industrial force. With the merger of Nokia, a cable company and a rubber firm, the company found its path to electronics. In 1981, the mobile era started, and Nokia made its first digital telephone switch in 1982. The Nokia mobile revolution started as former president Jorma Ollila took over the cooperation in 1992. In 1998, Nokia became the world leader in mobile phones.

From the history of Nokia, it can be said that it is a very strong force in the stock market. In the end of year 2007, the stock price of Nokia peaked at around \$40.00. However, with the stock market crash in 2008 and the rise of iPhones and G1, the price of Nokia has gone way down and finally hit a low of \$8.47 in March 2009. With the current price of shares at around \$15, I believe that Nokia still has plenty of room to grow in the Market. Additionally, with the launch of the smart phone (Nokia N97), Nokia still has a chance to turn itself into a leader again.

**Table 7.2: Stock Information - Nokia**

NOKIA (NOK)	
Market Cap (Billion)	59.674
Volume (Million)	11.45
52 week high	18.87
52 week low	8.47
Current Price	15.7

**APPLE (AAPL):**

APPLE Computer, Inc. was first founded in 1976 by Steve Jobs and Steve Wozniak. Starting with only \$1,300, APPLE Computer Inc. was already a computer company with \$1 Billion annual sales in 1982. In the 1990s, PowerBook notebooks and Power Macintosh were released.

The launch of the revolutionary 5th generation iPod nano has brought APPLE to another level in the MP3 market. Even before the launch of 5th generation, iPod nano dominated the MP3 market. In the end of year 2007, APPLE's stock price peaked at around \$200. Even though the current price (\$185) is fairly close to the peak price, I still believe that Apple has the potential to bring itself to another level and become not just a world leading company in the MP3 market, but also in the computer industry.

**Table 7.3: Stock Information - Apple**

APPLE (AAPL)	
Market Cap (Billion)	165.744
Volume (Million)	21.49
52 week high	186379
52 week low	78.2
Current Price	185.02

**Hewlett Packard (HPQ):**

Bill Hewlett and Dave Packard founded Hewlett Packard (HP) on January 1st 1939. The company started with just \$5,369 and 2 employees. In 1960, HP established

its first manufacturing plant in Colorado. HP entered the NYSE for the first time in 1961 when they expanded to a company with five-thousand employees. Today, HP is one of the largest computer manufacturing firms with \$118.4 billion in revenue and has about three hundred thousand employees worldwide. HP is also ranked #9 in the Fortune 500 listing.

The reason why HP is able to keep up with DELL is that HP manufactures high quality laptops and computers with a reasonable price. HP has recovered well from the stock market crash. In March 2009, HP got a huge contract to sell 9.2 million units to the United States Marine Corp. With the ability to customize your own laptop and PC at a very cheap price, HP has been a very popular choice for the consumers recently. The economy is starting to get better and HP is a company with strong potentials and management, I believe HP will thrive again in the stock market.

**Table 7.4: Stock Information - HP**

HP (HPQ)	
Market Cap (Billion)	108.357
Volume (Million)	3.13
52 week high	46.72
52 week low	25.39
Current Price	45.5

**DELL (DELL):**

With \$1000 as startup capital, Michael Dell registered Dell Computer Corp. in 1984. Dell was the first in the industry to sell custom-built computers directly to

customer. In the late 1990s, Dell had expanded its market worldwide. Today, Dell is one of the largest companies in the United States, employing over 65,000 people and earning a revenue of \$61.1 billion in 2009.

Dell's revenue and net income hit a low in the second quarter of 2009. However, it is showing an upward trend in the third quarter. As may be seen in all of the other stocks, the current price is very close to the 52-week high. Unlike HP's quick recovery from the stock market crash, Dell is recovering slowly. Dell's peak price in the last three years is \$31/share. With the current price of \$16.62, there is still plenty of room to grow, given the fact that Dell is the leading laptop and computer manufacturer in the US.

**Table 7.5: Stock Information - Dell**

Dell (DELL)	
Market Cap (Billion)	32.052
Volume (Million)	4.75
52 week high	17.26
52 week low	7.84
Current Price	16.62

**Google (GOOG):**

Google has grown into a comprehensive internet advertising business from an online search company. The company's revenue increased from \$440 million to \$21.8 billion in just 6 years. The corporation was reported to have a 31% year-on-year growth in 2009. Google has finally surpassed Yahoo and was rated as the most visited website in May 2008 and January 2009.

Google recovered very quickly from the stock market crash. the net income and net margin in Q1 of 2009 is comparable to that of Q3 2008 (before the stock market crash). With its high percentage of year on year growth, I believe Google is not just a stable company but also a stock possessing a very high potential to have another breakthrough in the stock market.

Google's highest stock price in recent year was \$690 on October 2007. With the current price at \$475 and the reported growth rate, I believe investing in Google is the correct choice.

**Table 7.6: Stock Information - Google**

GOOGLE (GOOG)	
Market Cap (Billion)	114.166
Volume (k)	569.2
52 week high	476.8
52 week low	247.3
Current Price	475.31

**Yahoo (YHOO):**

Yahoo is a global internet service company that provides services such as email, search, media streaming, and downloads. Yahoo was the most visited website before Google took over the crown in January 2009. 86.5% of Yahoo's revenue is made up by their online advertising business. Yahoo used to have the monopoly in the online advertising business; however, the power has shifted since 2004, when Google made amazing progress in the market. Even though Yahoo is no longer the market leader in

online advertising, I believe that the potential merger between Microsoft and Yahoo could bring them back to the top again.

After being hit hard last year in the stock market, Yahoo is recovering very slowly compared to other technology giants in the market. Yahoo's peak stock price was \$30 back in September of 2007. It has shown a downward trend since then. With the low current price, there is a very good possibility that I will be able to make profit by investing in Yahoo.

**Table 7.7: Stock Information - Yahoo**

YAHOO (YHOO)	
Market Cap (Billion)	21.85
Volume (Million)	21.09
52 week high	17.68
52 week low	8.94
Current Price	16.04

**NIKE (NKE):**

Nike is the world's largest athletic footwear manufacturer. The revenue of Nike in 2008 totaled \$18.6 billion. The popularity of Nike's products has made them one of the most global companies in the world. 34% of its total revenue came from the US, and an additional 30% came from the EMEA in year 2008. The economic recession in 2008 hit Nike and other shoe manufacturers hard. Nike's revenue only grew 3%, and the net income dropped 21% in 2009. However, in Q2 of 2009, Nike's net income and net margin has increased from Q1.

I am investing in Nike because it is the largest and the most popular footwear company in the world. The economy is recovering and will only get better in the near future. The demand for shoes will rise again once the economy has recovered. Nike's stock price peaked at \$69 in the beginning of 2008. With the current price at \$54 per share, I believe Nike is a profitable stock in which to invest.

**Table 7.8: Stock Information - Nike**

NIKE (NKE)	
Market Cap (Billion)	21.341
Volume (Million)	1.03
52 week high	67.02
52 week low	38.24
Current Price	54.21

**Amazon (AMZN):**

Amazon was founded in 1995 by Jeff Bezos. It started off as an online bookstore, however, it has expanded to an online superstore that sells products from more than 40 categories. Amazon is the world's largest e-commerce company with revenues growing 29.1% from 2007 to 2008. Amazon offers low prices on high quality products with shipping promotions.

The stock price for Amazon peaked at \$94 in the end of year 2007. Even though the current price is very close to the peak price, Amazon has shown a very stable performance in the stock market in the last four months with its stock price varying from \$87 to \$91. Amazon purchases are tax free in most of the states in the US. Under this

economic situation, everyone wants to save on unnecessary costs, and consumers expect high-quality products at lower costs. I believe Amazon has done a good job and will continue its strong performance in the stock market in the future.

**Table 7.9: Stock Information - Amazon**

Amazon (AMZN)	
Market Cap (Billion)	38.983
Volume (Million)	6.77
52 week high	94.40
52 week low	34.68
Current Price	90.28

## **7.3 Weekly Simulation Reports**

### **7.3.1 Journal for Week of Sept. 21 – Sept. 27, 2009**

**09/21/09**

Starting with \$500,000, I bought 400 shares of Google at \$497.59/share. About 40% of my cash was invested in Google because I believe that it is a company with huge potential. I also bought 500 shares of Yahoo, Nike and Apple. These are my second largest investments. I Bought 300 shares of HP and 100 shares of Dell and Nokia. 200 shares of Amazon was also bought. \$135,000 cash remained in my portfolio after the first day. This cash will be used to invest further in Google.

**Table 7.10: Stock Trading Summary (09/21/2009)**

<b>Date</b>	<b>Symbol</b>	<b>Buy/Sell</b>	<b>Price</b>	<b>Shares</b>	<b>Net Cost/ Proceeds</b>	<b>Profit/Loss</b>	<b>Total Cash</b>	<b>Total Profit</b>
9/21	GOOG	Buy	497.59	400		588	300,944	588
9/21	YHOO	Buy	17.09	500		-115	292,379	-115
9/21	AMZN	Buy	90.37	200		676	274,285	676
9/21	NOK	Buy	15.77	100		-10	272,688	-10
9/21	NKE	Buy	58.32	500		25	243,508	25
9/21	DELL	Buy	15.99	100		-26.06	241,889	-26.06
9/21	HPQ	Buy	46.36	300		195	227,961	195
9/21	AAPL	Buy	184.13	500		175	135,876	175
								1,507.94

**09/22/09**

No trade was made today, as I am still observing the performance of the stocks I invested in.

**09/23/09**

No trade was made today as I am still observing the performance of the stocks I invested in. The stock market has been performing well recently.

**09/24/09**

The stock market didn't do very well today. All of my stocks went down. Therefore, I sold all of my Amazon and HP stocks. I made roughly \$400 from those two companies. Apple's stock price went down drastically, so I bought an additional 800 shares. At the end of the day, Apple turned out to be the only company that I actually made a profit from.

**Table 7.11: Stock-Trading Summary (09/24/2009)**

<b>Date</b>	<b>Symbol</b>	<b>Buy/Sell</b>	<b>Price</b>	<b>Shares</b>	<b>Net Cost/ Proceeds</b>	<b>Profit/Loss</b>	<b>Total Cash</b>	<b>Total Profit</b>
9/24	GOOG						21,295.25	-328
9/24	YHOO						21,295.25	-100
9/24	AMZN	Sell	91.42	200			21,295.25	
9/24	NOK						21,295.25	-69
9/24	NKE						21,295.25	-175
9/24	DELL						21,295.25	-22.06
9/24	HPQ	Sell	46.69	300			21,295.25	
9/24	AAPL	Buy	183.39	800			21,295.25	189.8
								-504.26

**7.3.2 Journal for Week of Sept. 29 – Oct. 2, 2009**

**09/29/09**

No Trades were made today. All of my stocks are not doing well and are still recovering from the stock market hit last Friday.

**09/30/09**

Nike had a 10% growth today, very interesting trend of observe. Nike and Apple both had significant increase in their stock prices. A daily gain of \$5,000 was obtained from just Nike and Apple. Google, however, has not been performing as well as expected as the stock price dropped from the initially purchased \$497.59 down to \$495.85. It is important to note that Google did recover from the drastic drop from last Friday, increasing the stock price from 492.48 to 495.85.

**Table 7.12: Stock-Trading Summary (09/30/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
9/30	GOOG		495.85				21,295.25	-696
9/30	YHOO		17.81				21,295.25	360
9/30	AMZN						21,295.25	
9/30	NOK		14.62				21,295.25	-115
9/30	NKE		64.7				21,295.25	3,090.00
9/30	DELL		15.26				21,295.25	-73.06
9/30	HPQ						21,295.25	
9/30	AAPL		185.35				21,295.25	2,178.80
								4,744.74

**10/02/09**

I have sold all of the Nike Stock at \$62.2. The purchased stock price was at \$58.92 which has about \$3.3 increase over the past 2 weeks. This transaction allowed an overall gain of \$1,850. I bought 109 shares of Google using the rest of the cash since Google's stock price went down by \$8 in the past two weeks.

**Table 7.13: Stock-Trading Summary (10/02/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
10/2	GOOG	Buy	484.58	109			0.00	-5,835.11
10/2	YHOO						0.00	-125
10/2	AMZN						0.00	
10/2	NOK						0	-183.00
10/2	NKE	Sell	64.7	500			0	
10/2	DELL						0.00	-95.06
10/2	HPQ						0.00	
10/2	AAPL						0.00	1,593.80
								-4,644.37

### 7.3.3 Journal for Week of Oct. 5 – Oct. 9, 2009

#### 10/07/09

I sold 1,300 shares of Apple today at \$189.97 to earn \$246,941.01 in cash. The shares were bought at \$183.70. Therefore, this transaction has brought \$8,021 of profit. I sold Google at \$517.54. A net profit of \$10,950 was earned through investing in 509 shares of Google in the past two weeks.

**Table 7.14: Stock-Trading Summary (10/07/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
10/7	GOOG	Sell	517.54	509		8,021	510,428	10,941.53
10/7	YHOO						510,428	200
10/7	AMZN						510,428	
10/7	NOK						510,428	-139
10/7	NKE						510,428	
10/7	DELL						510,428	-63.06
10/7	HPQ						510,428	
10/7	AAPL	Sell	189.97	1300		10,950	510,428	
								10,939.47

#### 10/08/09

I bought 10,000 shares of Nvidia because the stock price has been declining for the past 2 weeks.

**Table 7.15: Stock-Trading Summary (10/08/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
10/8	GOOG						371,148.04	
10/8	YHOO						371,148.04	245
10/8	AMZN						371,148.04	
10/8	NOK						371,148.04	-137
10/8	NKE						371,148.04	
10/8	DELL						371,148.04	-17.06
10/8	HPQ						371,148.04	
10/8	AAPL						371,148.04	
10/8	NVDA	Buy	13.93	10,000		800	371,148.04	800
								890.94

**10/09/09**

I bought 72,935 shares of Sprint-Nextel because the stock price has been declining for the past 2 weeks. With the new launch of HTC Hero next week, I believe Sprint-Nextel's stock price will increase.

**Table 7.16: Stock-Trading Summary (10/09/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
10/9	GOOG						110,028.04	
10/9	YHOO						110,028.04	-110
10/9	AMZN						110,028.04	
10/9	NOK						110,028.04	-108
10/9	NKE						110,028.04	
10/9	DELL						110,028.04	-18.06
10/9	HPQ						110,028.04	
10/9	AAPL						110,028.04	
10/9	NVDA						110,028.04	2,600
10/9	S	Buy	3.58	72,935		7.29	110,028.04	7.29
								2,371.23

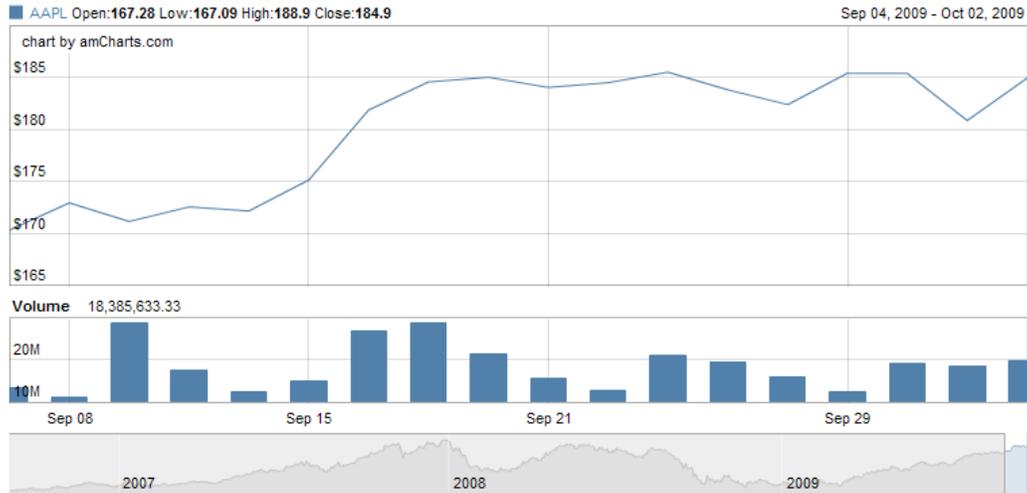
# APPLE INC (NASDAQ: AAPL)

**\$184.90** ▲ 4.04 (2.23%)

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Chart Type:  Compare Symbol:   \* Max 2 symbols



**Figure 7.1: Monthly performance of APPLE (SEP-OCT)**

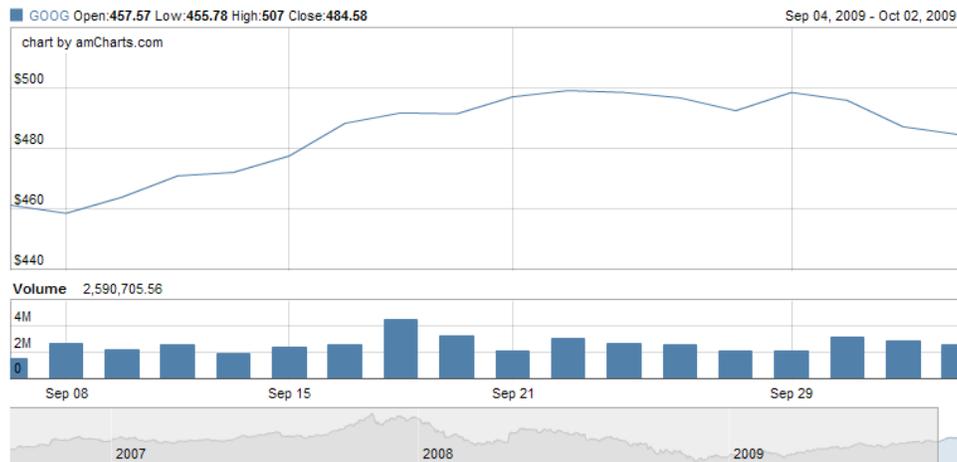
# GOOGLE INC A (NASDAQ: GOOG)

**\$484.58** ▼ 2.62 (0.54%)

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Chart Type:  Compare Symbol:   \* Max 2 symbols



**Figure 7.2: Monthly performance of Google (SEP-OCT)**

# SPRINT NEXTEL CORP (NYSE: S)

**\$2.96** ↓ 0.13 (4.21%)

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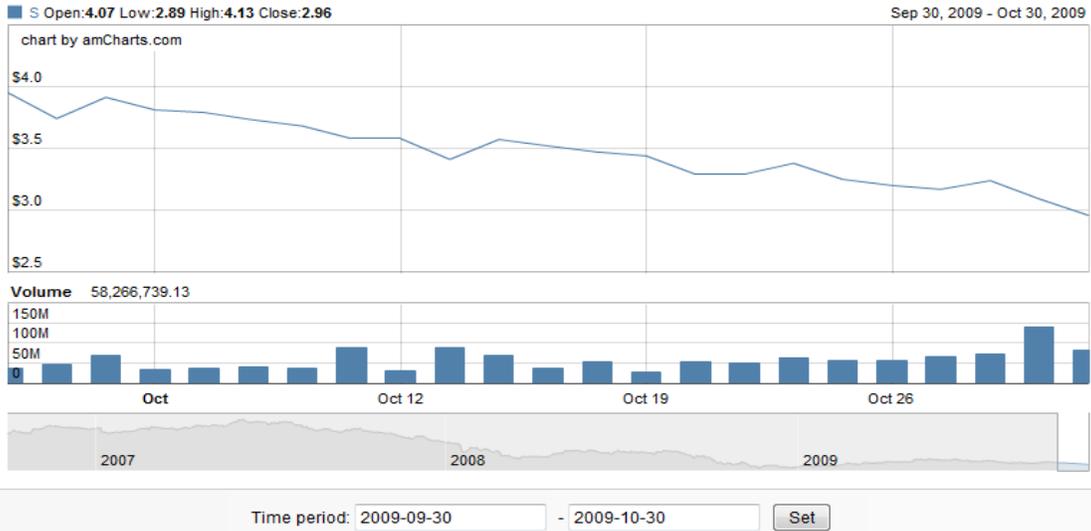


Figure 7.3: Monthly performance of Sprint (SEP-OCT)

# NVIDIA CORP (NASDAQ: NVDA)

**\$11.96** ↓ 0.59 (4.70%)

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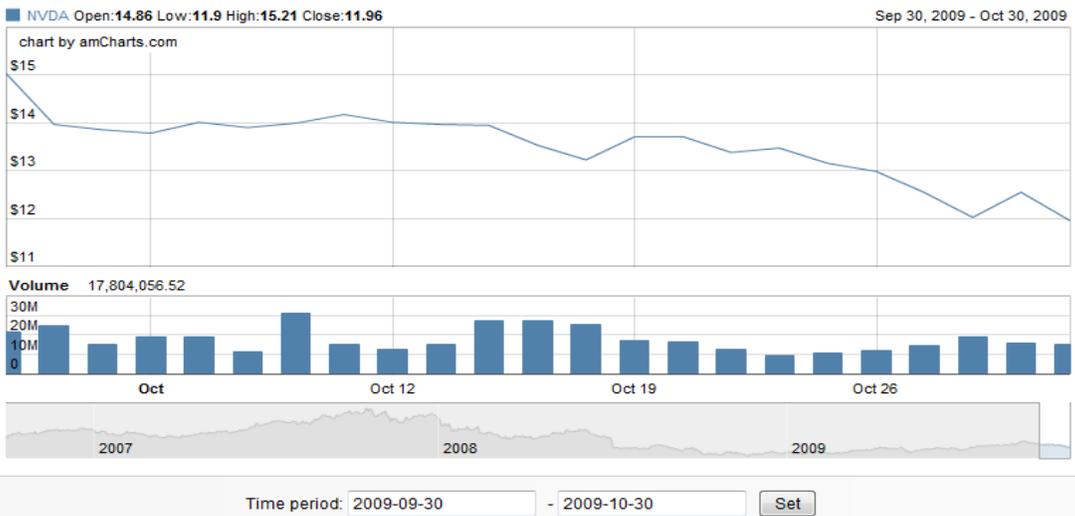


Figure 7.4: Monthly performance of Nvidia (SEP-OCT)

### **7.3.4 Journal for Week of Oct. 26 – Oct. 30, 2009**

**10/30/09**

No trades were made today. The downward trend of Nvidia and Sprint have lasted for more than three weeks. From Figure 7.3, it is clear that the value of Sprint shares has dropped significantly. The stock price per share for Sprint back in August was \$5. I invested most of my cash into Sprint mainly because it dropped down to \$4/share in September, and I expected the stock's poor performance to stop. Better performance was expected from Sprint because of the launch of their new smart phones and the availability of more cell phone plan selections. However, Sprint's stock price per share continued to drop and eventually reached \$2.95/share by the end of this week. The poor performance of Sprint is mainly due to its \$478 million net loss in the third quarter. The loss of 545,000 wireless subscribers was the key. Verizon and AT&T (both are rivals with Sprint) have gained more wireless subscribers in the third quarter. The Chief Executive Officer, Dan Hesse, assumed that the higher sign-up rate in the third quarter was a positive sign and would bring profit to Sprint eventually. However, the poor performance continued into October. The numerous launches of different smart phones was the key impact factors in the decline of Sprint's stock price. Sprint had to subsidize all of their smart phones to attract new customers. The launch of the Palm Pre seemed very helpful; however, Sprint still ended up losing revenue due to the huge amount of subsidies it had to put into sales of the Palm Pre. Therefore, several stock analysts have suggested Sprint to just focus on the customers it has instead of trying to attract new customers by launching even more smart phones. From the reported numbers, I believe selling all of my Sprint stocks would be a wise decision. Moving on to Verizon or AT&T

might be better investment because it will take a long time for Sprint to recover from its loss in the third quarter.

Nvidia's drop occurred due to the overall poor performance by the NASDAQ composite index. The technology sectors have been doing well since March, and this short period decline is just a bit of a breather because of the uncertainty around the Christmas sell-through. Keeping Nvidia stocks might be a wise decision because the holiday season is coming and the tech sectors have been getting boosts from gains in shares of Dell Inc., HP, and EMC Corp.

**Table 7.17: Stock-Trading Summary (10/30/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
10/30	GOOG						110,028.04	
10/30	YHOO						110,028.04	-507.5
10/30	AMZN						110,028.04	
10/30	NOK						110,028.04	-261
10/30	NKE						110,028.04	
10/30	DELL						110,028.04	-107.06
10/30	HPQ						110,028.04	
10/30	AAPL						110,028.04	
10/30	NVDA						110,028.04	-13,517.00
10/30	S						110,028.04	-37,189.56
								-51,582.12

### 7.3.5 Journal for Week of Nov. 2 – Nov. 6, 2009

**Table 7.18: Stock-Trading Summary (11/02/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
11/2	S	Sell	2.82	72935	205,656.71	-55,430	315684.75	-55,430
11/2	WDC	Buy	33.91	5162			140,621.34	

From last week's report and research about Sprint, I have decided to sell all of my Sprint stocks even though I lost \$55,430 by investing in Sprint. With the extra cash, I bought 5,000 shares of Western Digital (WDC). By the end of this week, the stock price of WDC went up to \$36.44 per share. I have made \$13,059.86 in profit by just investing in WDC. Therefore, once the market opens on Monday, I will be trading away all 5,000 shares of WDC because I think it has already hit its peak at \$36.44.

Western Digital has been doing well because of its successful launch of the WD TV. Also, it has posted a Q1 profit increase in October 22nd. Net income of \$288 million was up 36% from \$211 million from last year. In addition, the increasing demand of laptops and desktops has allowed WDC to sell more of its hard drive products. John Coyne, president and CEO, said demand is being driven primarily by the "growing social media phenomenon."

nVidia shares are performing a lot better than last week. The final price/share was \$13.16. The loss was reduced to \$7,500 compared to \$13,517 from last week. This showed that the report I found last week gave a valid prediction. I expect nVidia to keep rising as it is close to the holiday season and the shopping for electronics will hopefully help nVidia Corp.

### 7.3.6 Journal for Week of Nov. 9 – Nov. 13, 2009

\$13,059.86 profit was made from last week by investing in Western Digital. Therefore, the first thing I did on Monday was sell all of the WDC stocks. With the extra cash I had after selling WDC, I have decided to invest in HP (Helmerich & Payne Inc.). HP did well early in the week, accumulating about \$3,000 in profit. However, it did not do so well later in the week and I ended up experiencing a loss of \$4,740.

HP is a Tulsa based energy exploration and production company. HP was bought because I confused it with HPQ (the actual computer company I was going to invest in). However, as mentioned before, HP turned out to be a satisfactory investment overall. HPQ has been outstanding on the other hand. The stock price stood at \$49.91/share by the end of the week. Compare to the \$46.69, it is a very drastic increase.

The loss from investing in nVidia continued to reduce, and the loss was eventually decreased to \$3,500 by the end of the week. In the middle of the week, the stock price almost came back to \$13.92, the purchase price. However, it went back down and ended at \$13.56 per share.

From the performance of nVidia and Western Digital, it could be concluded that the technology sectors are recovering and starting to rise in price. A similar trend can be observed in the previously invested Google and HPQ.

**Table 7.19: Stock-Trading Summary (11/09/2009)**

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Profit
11/9	HP	Buy	38.65	6000	231,919.99		98,642.96	
11/9	WDC	Sell	36.80	5162	189,941.61	13,059.86	330,562.95	13,059.86

## **Chapter 8: Comparison of Cumulative Results and Discussion**

### **8.1 Diversified Portfolio Utilizing Fundamental Analysis**

The initial stock purchases and subsequent trades I have made have been based on fundamental analysis. Fundamental analysis strategies rely on purchasing and selling stocks based on their intrinsic value, not on their perceived value. I started the simulation purchasing a large number of stocks in the financial sector; in particular, I purchased mostly bank shares. I thought that the intrinsic value of Bank of America and the Royal Bank of Canada was higher than the market value.

For the 10 years previous, Bank of America shares had not been sold for less. Additionally, after their acquisitions of Merrill Lynch and Wachovia Financial, I believed that Bank of America was a wise purchase based on fundamental analysis. However, the results of my trading show that relying solely on fundamental analysis is not wise. In a turbulent market, stocks change value more based on reactions to short-term economic reports and emotions than on the intrinsic value of the shares. As a result, I had to sell all of my shares in Bank of America after the market value of the stock started to plummet.

Likewise, my initial investment in the Royal Bank of Canada was based on my perceived intrinsic value of the company. As the company had posted an increase in their net margin from -0.6% to 16% in the most recent quarter, I decided to invest. However, as investor's woes and fears of a quick recovery worsened, the value of the Royal Bank of Canada's stocks declined, and I was forced to sell them and my Bank of America stocks.

Additionally, Baidu.com shares changed value almost at a whim. Many investors disagreed about the intrinsic value of the company, unable to establish a trading target. And as such, the prices fluctuated widely, even falling more than 11% in one day (10/27/09). Shares have since reclaimed much of this loss, but the stock still remains volatile, even with a P/E ratio of more than twice Google's (NYSE: GOOG). Baidu.com is another example of a company whose value is largely based on the emotions and feelings of investors who do not follow fundamental analysis.

Though Activision Blizzard did not seem to be traded based on the intrinsic value of the company's worth, the short-term qualitative analysis conducted by most investors helped my portfolio in the short time I invested in the company. Those who had evaluated the company using fundamental analysis would have known that the company was to make a large profit upon the release of Call of Duty: Modern Warfare 2; however, qualitative analysts, only upon hearing the news of the record sales, quickly purchased shares. Likewise, when the stock price rose quickly, many who had recently invested sold their stocks. This may have been a good short-term strategy for many; however, a more long-term fundamental analysis would recommend holding onto the stocks through the holiday season, as many more copies are likely to be sold. Thus, using fundamental analysis, it is easier to predict the long-term increase or decrease in a company's worth, allowing one to purchase shares before economic news like quarterly reports are released and potentially increasing profits.

Of all of the companies presented thus far, SEI Investments Company epitomizes the qualitative analysis technique that most investors have adopted since the stock market crashed. Qualitative analysts look at the subjective qualities and not the intrinsic qualities

of a company. Though SEI Investments posted Q3 profits that beat expectations by 2 cents per share, share values plummeted 12.5%. Additionally as a sign of the company's good health, the corporation's net margin has been increasing since Q4 2004. Fundamentally, the company looks to be a good investment, but qualitative investors, likely weary of the rapid economic recovery, have driven the price of SEI Investments down.

However, some companies did seem to be more immune to short-term economic news than other. In particular, TD Ameritrade stocks appear to be traded mostly on the intrinsic value of the company and not on the temporal fears and delights of investors. In the past three months (08/20/09 – 11/20/09), TD Ameritrade Holding's stocks have increased in value 12.60%. This augmentation is likely due to increased trading due to market volatility. When stocks are traded in high volume, brokerage firms are expected to make a large profit, allowing them to be somewhat independent of short-term market woes. Thus, for one who wishes to employ fundamental analysis as a trading strategy, it seems that investment in a brokerage firm, like TD Ameritrade, is an excellent choice.

Like TD Ameritrade, other companies seem to be ideal candidates to employ fundamental analysis trading strategies; Raytheon Co. seems to be valued based on its intrinsic worth. Raytheon shares have seen a large increase in value since the start of November (11.19%). Through the recession, the company's revenue and net margin has remained relatively unchanged at 5.3B and 8%, respectively. This has indicated to investors that the company is relatively immune to the recession. After plummeting in value in March of 2009, share prices have regained significant ground to hover around their pre-March values. This indicated that, with the exception of March trading, the

stock is being traded with respect to its intrinsic value. Thus, it seems that defense contractors are relatively immune to short-term problems in the economy and can be traded with respect to their fundamental value.

Investment in the stock market is a risky endeavor and is usually only profitable by investing large quantities of money in an attempt to negate the cost of trade commissions. Significant research, both into entire industries and into individual corporations, must be carried out if the investor is to make educated, strategic decisions. Fundamental analysis, though not employed by all investors, can be used to help determine which stocks to buy and to sell based on the company's intrinsic worth. Though some companies are more susceptible to market fluctuations and should not be traded with respect to fundamental analysis, investment in some industries, such as defense contracting, can be guided by the principles of fundamental analysis.

## **8.2 Investing in the Life Sciences using Company History and Projected Growth**

I began this simulation by searching for companies with historically good reputations. Moreover, I chose companies with high interest coverage ratios, which reflected stable companies able to pay their debts. Additionally, I chose companies with a history of growth or a potential for growth. These companies either had a penchant for consuming other companies, or had products that seemed indispensable for modern health.

Genzyme and Illumina were two companies on my list that had a history of acquiring other companies, an event that caused a leap in stock prices and profit for investors. Genzyme has acquired eight companies in recent history, while Illumina bought-out CyVerta in 2005 and Solexa in 2007.

Gilead Sciences and Celgene seemed to have great potential for growth due to their product lines. Gilead sciences in particular seemed promising, due to its effective line of HIV drugs. It was something of a gamble, but I knew from research that steps were being taken to extend humanitarian aid to AIDS victims that were previously not on the market, and that a big shift in this direction could be explosively profitable.

I also targeted four companies based on their production of the right product at the right time: companies that produced the swine flu vaccine. These companies were AstraZeneca (AZN) Novartis (NVS), GlaxoSmithKline (GSK), and Sanofi-aventis (SNY). As flu season set in and the media fueled hysteria over the disease ran its course, I predicted that these stocks would increase in value.

Unfortunately, most of my investments turned out to be unprofitable, mostly due to problems with FDA approval, company facilities, or low projections made by the companies themselves. This simulation has taught me that any pharmaceutical company is a high-risk investment.

## **Illumina**

I sold all of my stock in Illumina before the simulation had ended. After an excellent start when it was common to see the stock rise by 1-3% in a day, Illumina's value suddenly plummeted on the 22<sup>nd</sup> of October. This occurred because their reported guidance for next year dropped from \$720 million down to 651 million, which executives blamed on slow sales. What was once my star stock had to be sold at a steep loss, costing me \$21,000 total. In the future, it would be far better to anticipate such announcements and sell the stock before the announcement was made. One could gamble on next year's

projection being higher than expected, but this experience has taught me to guard oneself against loss.

### **Gilead Sciences**

Gilead Sciences is another company of which I sold all stock in before the end of the simulation. Despite reporting excellent third quarter results in late October, the stock plummeted shortly afterward. This was probably due to lower than expected sales of the drug, Truvada. The stock recovered most of its value shortly after, but the sharp decline of this day left a bad taste in my mouth. It seemed that Gilead's reputation was unformed in investor's minds, and it was consistently a source of negative income in my portfolio. I sold it at a loss of \$6,000 dollars. It turned out that this was the right thing to do. By the end of the simulation, Gilead had dropped another 4%.

### **Celgene**

Celgene, like Gilead Sciences, experienced a sharp drop in late October despite good third quarter reports (which even predicted that next year's profits would be 18% higher than this year's). However, it quickly recovered the lost value. Overall, the stock retained its value and did not incur much loss or profit.

### **Swine Flu Producers**

AstraZeneca stocks were largely static during the simulation, with the final value being slightly higher than the initial investment. Analysts from all corners were hailing this stock as a great potential, but a recent lawsuit by users of the psychiatric drug, Seqorel, may destroy that potential. Seqorel users claim that the drug causes diabetes, and

recently a federal judge ruled that many of the cases should be held in their local courts, probably to the disadvantage of the company. If the simulation were still running I would unhesitatingly sell this stock for what little profit it now has. Sanofi Aventis was also largely static.

Novartis and Glaxo-Smith-Kline were the only two very successful investments that I made during this simulation. Novartis increased in value by almost twenty percent, and GlaxoSmithKline by almost eight. Each was propelled upward by promising new drugs and FDA approvals, as well as their outputs of the swine flu vaccine. Each experienced shortages, but this was expected due to an impossible demand for the valuable product. Neither company reported the technical difficulties experienced by Genzyme.

### **Genzyme**

Analysts have called the Genzyme stock a “train wreck.” Until recently, the company has shown strong growth, with an average of 22% growth each year from 2003 to 2008. Then, a series of related misfortunes sent the stock on a downward spiral, with my investment in tow.

It started when the FDA announced a three-month-delay on its verdict for a Genzyme drug, Myozyme. This made investors nervous, and when the results finally came out, Myozyme was banned. The drug was not safe for use in humans. After this occurred, contamination problems in one of the company’s manufacturing plants forced it to shut down, causing shortages. This made the company look like an unreliable provider, unable to meet its self-set deadlines. Further problems cropped up last week when the

FDA warned that about 1% of the vials coming out of the company contained bits of steel, rubber, and fiber. The Genzyme drugs that have been flagged as contaminated are still circulating, because they treat diseases that lack other types of therapy. Finally, the last domino fell when Genzyme gave up on a new kidney drug, claiming that it was less effective than another drug they had in circulation. The company's value gradually dropped by 20% while I had it in my portfolio. Due to this, my final losses were close to \$30,000, a 6% decrease in buying power.

Genzyme more than any other company, has taught me that investing in the life sciences, especially pharmaceutical companies, is unsound. The research and development of new drugs is totally inaccessible to the investor, so products may be approved or disapproved by the FDA with no way of accurately predicting the result. There is also the vulnerability of these companies to contamination, and the inflammatory nature (due to its intimate relationship with patients' lives) of any mistake made by the company. Any foul-up and the company laboratories will be sensational news. It would be better to pursue opportunities in other sectors of the marketplace, such as agriculture, which may be more predictable due to weather patterns that are accessible by everyone.

### **8.3 Video Game Industry Stocks with Historically Strong Market Performance**

I had originally picked my stocks based on their historically strong performance. By sticking with companies within the video game industry, I hoped I could make a good judgment about which of the major companies in both software and hardware development performed the strongest over the time that I spent during the simulation.

Of the three hardware companies, Microsoft, Sony, and Nintendo, I made the most profit off of Microsoft shares. By the end of the simulation, my sales had netted me

a profit of \$8,164.71 from the company, whereas Sony only yielded me a profit of \$488.92. I did not make any profit by investing in Nintendo. Nintendo was usually in the red in my portfolio, and when it was in the black, I did not think it was enough to do anything about it.

Overall Microsoft's stock rose by \$4.52 from start to finish. I sold it while it was about \$1 above start and \$3 above start, which were the causes for my large profits. Sony's stock rose by only \$.02, but I managed to sell it while it was about \$1 above starting point; thus, I was able to make a profit. Nintendo's stock actually went down \$0.89.

Of the four Software companies (Activision Blizzard, Konami, Electronic Arts, and Take-Two), I made the most profit from Electronic Arts, which netted me a profit of \$6,471.40 by the end of the simulation. Take-Two made me \$4,390.40, and Activision-Blizzard only made me \$385.76. Konami was the only company that lost me money in the end. It was only about \$85.80, but every other company I invested in either did not make me any profits or made me a profit.

Overall, Activision-Blizzard's stock rose only \$0.06 from start to finish, but I managed to sell it while it was up by about \$1.00, making me a profit. Konami's stock went up by \$.11, but I bought more stocks at a price lower than what I had originally bought at and sold stocks while I was still in the negative, so I ended up losing money overall. Electronic Art's stock dropped by \$0.39 over the course of the simulation, but I was able to sell it while it was up by \$1, and then again up by \$2.50, resulting in a sizeable profit-margin. Take-Two's stock rose by \$0.61; however, I sold off all of my shares while it had gone up by \$.89, so I made a profit on from the investment.

PepsiCo was the only non-video game stock that I purchased, but it only made me a profit of \$604.01. It rose by \$2.42 by the end of the simulation. I sold it while it was down by about \$1, and again while it was up by \$2.50. This gave me a smaller profit than I otherwise would have, but still a profit.

In terms of my own portfolio, Microsoft and Electronic Arts gave me the biggest gains, which does not surprise me. Microsoft is an economic powerhouse and has done very well over the years. It is one of the most well known companies and has some of the highest sales in the video game industry. Electronic Arts is another economic powerhouse, and is one of the best-known video game publishing companies in the world. Both companies aggressively seek out other successful, smaller companies and acquire them through various means to expand themselves and make their companies more profitable. It does not surprise me that they performed the best out of all of the companies I invested in.

Sony, Activision-Blizzard, and Take-Two also did very well overall, and although they did not make me as much as Microsoft or Electronic Arts, they still made me a decent profit. I had expected this, so I was pleased. Konami performed very poorly overall; however, the company is very small and does not have a large presence on the stock market so I was not very surprised by this.

The only company that really surprised me was Nintendo, which ended up being the only company that went below the price I bought it at by the end of the simulation. Share values rose a few times during the simulation, but never by very much. Nintendo is a huge name in video game consoles, and the Nintendo Wii and DS are ahead of competitors in their respective markets. I had expected them to do better than they did,

but overall the choice was not a complete failure. By the end, I still made a profit by investing in Nintendo.

PepsiCo also did a bit worse than I had expected, although I only bought their shares to diversify my portfolio. I had not expected them to make me a significant profit, but they are a leading company in the field of soft drinks and snack foods, so I expected them to do a little better than they did.

I learned a lot about successful stock trading strategies over the course of the simulation, and although my portfolio's value was only slightly above its starting point at the end, I managed to make a profit of about \$17,000 overall. I am quite pleased with this, especially since it was only an eight-week period.

#### **8.4 Investing in Technology and Shoe Manufacturing Sectors using the Income and Growth Strategies**

The companies I had selected at the beginning of the simulation were all mature and consistent stock performers. Initially, I invested a lot of my cash in two major companies, APPLE and GOOGLE. They did not perform as well as I expected in the first few days. However, the stock price/share drastically increased for both stocks, especially GOOGLE. Google has been doing very well recently, reaching its 52-week high at \$572/share in the past week. Even though a lot of profit was made by investing in Google, I should not have sold it at \$519/share. The difference of \$53/share says a lot about Google's potential and innovation in the technology sector. Therefore, Google should be regarded as one of the fastest growing/recovering companies since the stock market crash last year. From this, I have learned that a lot of patient investigations are needed when investing in such big company like Google, because the profit made in the long run could be very

significant. One of the reasons for its top-performance, was Google's innovation of the Google Wave, which is the search engine giant's real-time collaboration platform. It lets users send e-mails and instant messages from one platform. Wave was only created back in May, but the user population rose sharply to 100,000 users in September 30th, 2009. Within a short amount of time, Google was able to understand its customer's desires and made the necessary adjustments to Google Wave. From this case, it can be easily said that in order to succeed in the technology sector, one must do what Google is doing, understanding customer's needs and wants. This is why Google has over-taken Yahoo in a short period of time. I had also invested in Yahoo, but its stock price dropped by 10% within the eight-week simulation period.

Apple's launch of the new generation iPods was very successful, which could be seen from its stock price increase in the past eight weeks. Now standing at \$200/share, Apple was being traded at \$184/share eight weeks ago. That is almost a 10% increase in stock price. In this new generations of iPods, it was well reflected that Apple has done a lot of research in customer's needs and wants, fixing all the problems with the previous generation iPods. Understanding customer desires is why Google and Apple are the two companies that are still standing-tall during this economic recession.

By comparing Apple and Sprint, it is apparent that customers in the technology sectors do not want new models every time, instead, they are looking for the companies to fix the problems they've addressed. Apple has done that well, while Sprint was a complete failure. Its stock price is currently at \$3.76/share, having even dropped below \$3/share during the course of the simulation. Similar comparison could be found in Dell and Hewlett Packard. The two companies are rivals in the computer industries, yet, HP is

doing well at \$50.04/share, whereas Dell is not doing as well at \$14.29/share. Since the simulation started, HP has experienced a 10% overall stock price increase, whereas Dell has been doing poorly with 10% overall stock price decrease. The key difference between the two giants is that HP had offered different styles and designs on their laptop computers where as Dell did not. HP understands that each customer is looking for the "special" laptop for himself or herself. Therefore, HP offered a wide range of customizations that could be done to the laptop from color to the overall design.

In this recession, companies like Apple, Google and HP are doing a lot better when compared to their rivals. These three companies are similar in that they did a very good job performing market research; they addressed customer's problem as quickly as they could and they have established their brands very well, raising the brand-awareness for consumers.

## **Chapter 9: Conclusion**

The members in the simulation team each chose their favorite companies and investing strategies to create his/her own portfolio. The project included four separate portfolios managed by each of the individual members during an eight-week simulation process. Microsoft Excel was used to keep a record of all the transactions made, while Investopedia was chosen as a stock simulator. An allowance of \$500,000 was given to each group member to invest. Each portfolio had its own focus in either the pharmaceutical, gaming or technology sectors.

During the eight-week simulation, the U.S. economy was still recovering from the crash a year ago. Some sectors were recovering quickly whereas the others wereas others

were recovering more slowly, and this had some negative impacts on some of our portfolios. Only one out of the four portfolios made a profit. The performance of the portfolios seemed to be based on the specialization or focus that each member chose at the beginning of the simulation. The one portfolio that chose to specialize in gaming industries turned a profit, showing that the gaming industries were recovering faster than the pharmaceutical and technology sectors. These results were typical given the short time period.

In conclusion, this simulation provided a basic introduction to the investment world. We have accomplished our goals through the research in various investment vehicles and trading strategies. Our understanding of the stock market and its potential to increase the value of an investor's portfolio over time was also improved after the simulation and research experience.

## References:

1. Stock-Picking Strategies: Growth Investing [cited 9/18 2009]  
<http://www.investopedia.com/university/stockpicking/stockpicking4.asp>
2. *The stock market handbook*1970. , ed. Frank G. Zarb and Gabriel T. Kerekes. Homewood, Illinois: Dow Jones-Irwin, Inc.
3. *International Directory of Company Histories*, Vol. 36. St. James Press, 2001.
4. The Official Website of Nokia. [cited 9/18 2009] [www.nokia.com](http://www.nokia.com)
5. The Official Website of APPLE. [cited 9/18 2009] [www.apple.com](http://www.apple.com)
6. The Official Website of HP. [cited 9/18 2009] [www.hp.com](http://www.hp.com)
7. The Official Website of Dell. [cited 9/18 2009] [www.dell.com](http://www.dell.com)
8. The Official Website of Wikinvest. [cited 9/18 2009] [www.wikinvest.com](http://www.wikinvest.com)
9. The Official Website of Forbes. [cited 9/18 2009] [www.forbes.com](http://www.forbes.com)
10. YAHOO Finance [cited 9/18 2009] <http://finance.yahoo.com>
11. The Official Website of Forbes [cited 9/20 2009] <http://www.wikipedia.org/>
12. The Official Website of Forbes [cited 9/20 2009] <http://www.investopedia.com>
13. KONAMI: About Us [cited 9/20 2009] <http://www.konami.com/aboutus/>
14. Take-Two Interactive Software [cited 9/20 2009]  
<http://ir.take2games.com/index.cfm>
15. New report shows increase in AIDS financing [cited 9/20 2009]  
[http://www.unaids.org/en/KnowledgeCentre/Resources/FeatureStories/archive/2007/20070605\\_report\\_donor\\_AIDS\\_financing.asp](http://www.unaids.org/en/KnowledgeCentre/Resources/FeatureStories/archive/2007/20070605_report_donor_AIDS_financing.asp)
16. DART Study Investigators Present Favorable Viread Safety Results at IAS Conference [cited 9/20 2009] [http://www.gilead.com/pr\\_1309408](http://www.gilead.com/pr_1309408)

17. Genzyme to Make Offer for AnorMed [cited 9/27 2009]  
<http://www.nytimes.com/2006/08/31/business/31place.html>
18. Genzyme is Hungry [cited 9/27 2009]  
[http://www.thedeal.com/corporatedealmaker/2007/10/genzyme\\_is\\_hungry.php](http://www.thedeal.com/corporatedealmaker/2007/10/genzyme_is_hungry.php)
19. The Ritalin Explosion [cited 9/27 2009]  
<http://www.pbs.org/wgbh/pages/frontline/shows/medicating/experts/explosion.html>
20. Methylphenidate [cited 10/2 2009] <http://en.wikipedia.org/wiki/Ritalin>
21. About the NASDAQ [cited 10/2 2009]  
<http://www.advfn.com/StockExchanges/about/NASDAQ/NASDAQStockExchange.html>
22. NYSE Euronext: Timeline [cited 10/4 2009]  
[http://www.nyse.com/about/history/timeline\\_2000\\_Today\\_index.html](http://www.nyse.com/about/history/timeline_2000_Today_index.html)
23. The NASDAQ Stock Market [cited 10/4 2009]  
[http://www.stockmarketinvestinginfo.com/smi\\_history\\_add\\_3.html](http://www.stockmarketinvestinginfo.com/smi_history_add_3.html)
24. Stock Take a Beating [cited 10/4 2009]  
[http://www.thestreet.com/story/10605702/1/stocks-take-beating.html?pucc=cnmoney&cm\\_ven=CNNMONEY&cm\\_cat=Free&cm\\_pla=Feed&cm\\_ite=Feed](http://www.thestreet.com/story/10605702/1/stocks-take-beating.html?pucc=cnmoney&cm_ven=CNNMONEY&cm_cat=Free&cm_pla=Feed&cm_ite=Feed)
25. Stock market simulators: play your way to profits [cited 10/4 2009]  
<http://www.investopedia.com/articles/basics/09/stock-market-simulator.asp>

26. History of Online Stock Trading [cited 10/10 2009]  
[http://www.ehow.com/about\\_4672645\\_history-online-stock-trading.html](http://www.ehow.com/about_4672645_history-online-stock-trading.html)
27. Online Stock Market Simulators - Why We Play the Game Instead of Investing [cited 10/10 2009]  
[http://www.associatedcontent.com/article/292008/online\\_stock\\_market\\_simulators\\_why.html?cat=3](http://www.associatedcontent.com/article/292008/online_stock_market_simulators_why.html?cat=3)
28. Stocks take a big slide [cited 10/31 2009]  
[http://money.cnn.com/2009/10/30/markets/markets\\_newyork/index.htm?postversion=2009103017](http://money.cnn.com/2009/10/30/markets/markets_newyork/index.htm?postversion=2009103017)
29. Baidu Profit Jumps, but Outlook Disappoints [cited 10/12 2009]  
<http://online.wsj.com/article/SB10001424052748704335904574497872668562960.html>
30. Signs of an Aging Rally [cited 10/30 2009]  
<http://blogs.wsj.com/marketbeat/2009/10/29/signs-of-an-aging-rally/>
31. Bank of America (BAC) [cited 10/12 2009]  
[http://www.wikinvest.com/stock/Bank\\_of\\_America\\_\(BAC\)/Data?ref=topnav#keyMetrics](http://www.wikinvest.com/stock/Bank_of_America_(BAC)/Data?ref=topnav#keyMetrics)
32. Royal Bank of Canada (RY) [cited 10/12 2009]  
[http://www.wikinvest.com/stock/Royal\\_Bank\\_Of\\_Canada\\_\(RY\)/Data?ref=topnav#keyMetrics](http://www.wikinvest.com/stock/Royal_Bank_Of_Canada_(RY)/Data?ref=topnav#keyMetrics)
33. Raytheon Company [cited 10/17 2009]  
<http://quicktake.morningstar.com/s/stock/analysis.aspx?t=RTN>

34. Raytheon Company (RTN) [cited 10/17 2009]  
[http://www.wikinvest.com/stock/Raytheon\\_Company\\_\(RTN\)/Data/Backlog](http://www.wikinvest.com/stock/Raytheon_Company_(RTN)/Data/Backlog)
35. E3 2009: Guinness World Records Announces Awards at E3 [cited 10/17 2009]  
<http://uk.games.ign.com/articles/992/992211p1.html>
36. List of Public Companies Worldwide [cited 10/20 2009]  
<http://investing.businessweek.com/research/stocks/news>
37. Nvidia's stock bloodbath - company admits faulty chips, shares plunge 22%  
[cited 10/20 2009] <http://www.tgdaily.com/content/view/38237/135/>
38. Amazon, Netflix hit all-time highs, but tech rally fizzles [cited 10/25 2009]  
<http://www.marketwatch.com/story/soaring-amazon-and-microsoft-boost-tech-sector-2009-10-23>
39. Western Digital posts 1Q profit increase [cited 10/25 2009]  
<http://news.moneycentral.msn.com/ticker/article.aspx?Feed=AP&Date=20091022&ID=10586861&Symbol=WDC>
40. Stocks: Buyers 'swooping back in' [cited 11/9 2009]  
[http://money.cnn.com/2009/11/08/markets/sunday\\_lookahead/index.htm?postversion=2009110816](http://money.cnn.com/2009/11/08/markets/sunday_lookahead/index.htm?postversion=2009110816)
41. SEI Investments upgraded to "outperform" [cited 11/9 2009]  
[http://www.newratings.com/en/main/company\\_headline.m?id=1983910](http://www.newratings.com/en/main/company_headline.m?id=1983910)
42. Google Waves Goes Twitter Route with Follow Features [cited 11/22 2009]  
<http://www.eweek.com/c/a/Messaging-and-Collaboration/Google-Wave-Goes-Twitter-Route-With-Follow-Feature-264618/>

## **Appendix**

### **List of Stock Exchanges around the World:**

#### **South America**

##### **Argentina**

- Buenos Aires Stock Exchange (MERVAL)

##### **Bolivia**

- Bolsa Boliviana de Valores (BBV) web site

##### **Brazil**

- BM&F Bovespa (São Paulo Stock Exchange)
- Rio de Janeiro Stock Exchange (BVRJ)
- Maringá Mercantile and Futures Exchange
- BOVMESB (Minas, Brasília and Espírito Santo Stock Exchange)

##### **Chile**

- Santiago Stock Exchange
- Santiago Electronic Stock Exchange
- Valparaíso Stock Exchange (BOVALPO)

##### **Colombia**

- Bolsa de Valores de Colombia (BVC)

##### **Costa Rica**

- Bolsa Nacional de Valores de Costa Rica (BNV)

##### **Ecuador**

- Bolsa de Valores de Guayaquil (BVG)
- Bolsa de Valores de Quito (BVQ)

##### **El Salvador**

- Bolsa de Valores de El Salvador (BVES)

## **Guatemala**

- Bolsa Nacional de Valores (BNV)

## **Guyana**

- Guyana Stock Exchange

## **Honduras**

- Bolsa Centroamericana de Valores (BCV)
- Bolsa de Valores de Honduras (BHV)

## **Nicaragua**

- Bolsa de Valores de Nicaragua (BVDN)

## **Panama**

- Bolsa de Valores de Panama (BVP)

## **Paraguay**

- Bolsa de Valores y Productos de Asunción (BVPASA)

## **Peru**

- Bolsa de Valores de Lima (BVL)

## **Uruguay**

- Bolsa de Valores de Montevideo
- Bolsa Electronica de Valores de Uruguay BEVSA

## **Venezuela**

- Bolsa de Valores de Caracas (Caracas Stock Exchange) (BVC)

## **Africa**

### **Botswana**

- Botswana Stock Exchange (BSE)

### **Cameroon**

- Douala Stock Exchange (DSX)

### **Cape Verde**

- Bolsa de Valores de Cabo Verde (BVC)

### **Egypt**

- Cairo & Alexandria Stock Exchange (CASE)

### **Ghana**

- Ghana Stock Exchange (GSE)

### **Kenya**

- Nairobi Stock Exchange (NSE)

### **Malawi**

- Malawi Stock Exchange (MSE)

### **Mauritius**

- The Stock Exchange of Mauritius (SEM)

### **Morocco**

- Casablanca Stock Exchange

### **Mozambique**

- Maputo Stock Exchange

### **Namibia**

- Namibian Stock Exchange (NSX)

### **Nigeria stock exchange forlagos**

- Nigerian Stock Exchange
- Abuja Stock Exchange

### **South Africa**

- JSE Securities Exchange / Johannesburg Stock Exchange (JSE)
- JSE Alternative Exchange (ALTX)
- The South African Futures Exchange (SAFEX)
- Bond Exchange of South Africa (BESA)

### **Sudan**

- Khartoum Stock Exchange (KSE)

### **Swaziland**

- Swaziland Stock Exchange (SSX)

### **Tanzania**

- Dar-es-Salaam Stock Exchange (DSE)

### **Tunisia**

- Bourse de Tunis (BVMT)

### **Uganda**

- Uganda Securities Exchange (USE)

### **West Africa**

- Bourse Regionale des Valeurs Mobilieres (BRVM)

### **Zambia**

- Lusaka Stock Exchange (LuSE)

### **Zimbabwe**

- Zimbabwe Stock Exchange (ZSE)

## **Asia**

### **Afghanistan**

- Kabul International Stock Exchange

### **Bahrain**

- Bahrain Stock Exchange

### **Bangladesh**

- Chittagong Stock Exchange
- Dhaka Stock Exchange

### **People's Republic of China**

- Shanghai Stock Exchange
- Shenzhen Stock Exchange

### **Hong Kong**

- Hong Kong Exchanges and Clearing (HKEx)

### **India**

- Ahmedabad Stock Exchange
- Bangalore Stock Exchange
- Bhubaneswar Stock Exchange
- Bombay Stock Exchange (BSE)
- Calcutta Stock Exchange
- Cochin Stock Exchange
- Coimbatore Stock Exchange
- Delhi Stock Exchange Association
- Gawahati Stock Exchange
- Hyderabad Stock Exchange (HSE)
- Inter-connected Stock Exchange of India
- Jaipur Stock Exchange
- Ludhiana Stock Exchange Association
- Madhya Pradesh Stock Exchange
- Madras Stock Exchange (MSE)
- Mangalore Stock Exchange
- National Stock Exchange of India (NSE)
- OTC Exchange of India
- Pune Stock Exchange
- Uttar Pradesh Stock Association

- Vadodara Stock Exchange
- Meerut Stock Exchange

### **Indonesia**

- Indonesia Stock Exchange (IDX)
- Jakarta Futures Exchange (JFX)

### **Iran**

- Tehran Stock Exchange (TSE)

### **Iraq**

- Iraq Stock Exchange (ISX)

### **Israel**

- Tel-Aviv Stock Exchange (TASE)

### **Japan**

- Fukuoka Stock Exchange
- JASDAQ Securities Exchange
- Nagoya Stock Exchange
- Osaka Securities Exchange
- Sapporo Stock Exchange
- Tokyo Stock Exchange

### **Jordan**

- Amman Stock Exchange

### **Kazakhstan**

- Kazakhstan Stock Exchange (KASE)

### **Kuwait**

- Kuwait Stock Exchange

### **Kyrgyzstan**

- Kyrgyz Stock Exchange

## **Lebanon**

- Beirut Stock Exchange

## **Malaysia**

- Bursa Malaysia
- Kuala Lumpur Commodity Exchange
- Bursa Derivatives
- MESDAQ
- FTSE Bursa Malaysia Index

## **Maldives**

- Maldives Stock Exchange

## **Mongolia**

- Mongolian Stock Exchange

## **Nepal**

- Nepal Stock Exchange

## **Oman**

- Muscat Securities Market

## **Pakistan**

- Islamabad Stock Exchange (ISE)
- Karachi Stock Exchange (KSE)
- Lahore Stock Exchange (LSE)

## **Palestine**

- Palestine Securities Exchange (PSE)

## **Philippines**

- Philippine Stock Exchange (PSE)
- Philippine Dealing Exchange (PDEX)

## **Saudi Arabia**

- Saudi Arabia Electronic Securities Information System, precursor to Tadawul
- Tadawul

### **Singapore**

- Singapore Exchange (SGX)
- Singapore Commodity Exchange (SICOM)

### **Sri Lanka**

- Colombo Stock Exchange

### **South Korea**

- Korea Exchange

### **Taiwan**

- Taiwan Stock Exchange

### **Thailand**

- Stock Exchange of Thailand (SET)
- Agricultural Futures Exchange of Thailand (AFET)
- Thailand Futures Exchange (TFEX)
- Market for Alternative Investment (MAI)

### **United Arab Emirates**

- Abu Dhabi Securities Market
- Dubai Financial Market
- Dubai International Financial Exchange

### **Uzbekistan**

- Tashkent Stock Exchange

### **Vietnam**

- Ho Chi Minh Stock Exchange (HOSE)
- Hanoi Securities Trading Center (HASTC)

### **Oceania**

#### **Australia**

- Australia Pacific Exchange (APX)
- Australian Securities Exchange (ASX)
- Bendigo Stock Exchange (BSX)
- National Stock Exchange of Australia (NSX) formerly Newcastle Stock Exchange
- Sydney Futures Exchange (SFE)

## **Fiji**

- South Pacific Stock Exchange (SPSE), formerly the Suva Stock Exchange

## **New Zealand**

- New Zealand Exchange Limited (NZX)

## **Papua New Guinea**

- Port Moresby Stock Exchange Limited (POMSoX)

## **Europe**

### **Pan-European**

- Euronext
- OMX Exchanges

### **Armenia**

- Armenian Stock Exchange (Armex)

### **Austria**

- Wiener Börse

### **Azerbaijan**

- Baku Stock Exchange

### **Belgium**

- Euronext Brussels

### **Bosnia and Herzegovina**

- Sarajevo Stock Exchange (SASE)
- Banja Luka Stock Exchange (BLSE)

## **Bulgaria**

- Bulgarian Stock Exchange

## **Channel Islands**

- Channel Islands Stock Exchange

## **Croatia**

- Zagreb Stock Exchange (ZSE)

## **Cyprus**

- Cyprus Stock Exchange (CSE)

## **Czech Republic**

- Prague Stock Exchange (PSE)

## **Denmark**

- Copenhagen Stock Exchange (KFX), one of the OMX Exchanges

## **Estonia**

- Tallinn Stock Exchange, one of the OMX Exchanges

## **Faroe Islands**

- Faroese Securities Market, in cooperation with Iceland Stock Exchange (VMF)

## **Finland**

- Helsinki Stock Exchange, one of the OMX Exchanges (HEX, Helsingin Pörssi / Helsingfors Börs)

## **France**

- Euronext Paris (CAC 40)

## **Georgia**

- Georgian Stock Exchange (GSX)

## **Germany**

- Berliner Börse
- Börse Hamburg
- Börse Hannover
- Börse München
- Börse Stuttgart
- Börse Düsseldorf
- Eurex (Frankfurt-based; (owned by Deutsche Börse and SWX)
- Frankfurt Stock Exchange (owned by Deutsche Börse; Index: DAX)

## **Gibraltar**

- Gibraltar Stock Exchange (GibEX)

## **Greece**

- Athens Stock Exchange (General)

## **Hungary**

- Budapest Stock Exchange (BSE) In association with Wiener Börse

## **Iceland**

- Iceland Stock Exchange (Kauphöll Íslands)

## **Ireland**

- Irish Stock Exchange (ISE or ISEQ)
- Irish Enterprise Exchange (IEX)

## **Italy**

- Borsa Italiana

## **Latvia**

- Riga Stock Exchange, one of the OMX Exchanges

## **Lithuania**

- Vilnius Stock Exchange, one of the OMX Exchanges

## **Luxembourg**

- Luxembourg Stock Exchange

### **Macedonia**

- Macedonian Stock Exchange

### **Malta**

- Malta Stock Exchange

### **Moldova**

- Moldavie Stock Exchange

### **Montenegro**

- Montenegro Stock Exchange
- NEX Stock Exchange

### **Netherlands**

- Euronext Amsterdam (AEX index)

### **Norway**

- Oslo Stock Exchange

### **Poland**

- Warsaw Stock Exchange (WSE, GPW - Giełda Papierów Wartościowych w Warszawie)
- NewConnect

### **Portugal**

- Euronext Lisbon (PSI-20)
- OPEX

### **Romania**

- Bucharest Stock Exchange (*Bursa de Valori București* or BVB) (indices BET, BET-C, BET-FI and ROTX)
- SIBEX (formerly known as Sibiu Monetary Financial and Commodities Exchange)

- RASDAQ, merged with Bucharest Stock Exchange in December 2005, becoming one of its market sections.

## **Russia**

- Moscow Interbank Currency Exchange (MICEX)
- Moscow Stock Exchange (MSE)
- RTS Stock Exchange
- Saint Petersburg Stock Exchange (SPBEX)

## **Serbia**

- Belgrade Stock Exchange (BELEX)

## **Slovakia**

- Bratislava Stock Exchange (BSSE)

## **Slovenia**

- Ljubljana Stock Exchange (LJSE)

## **Spain**

- Bolsas y Mercados Españoles
  - Bolsa de Madrid
  - Bolsa de Barcelona
  - Bolsa de Valencia
  - Bolsa de Bilbao

## **Sweden**

- Nordic Growth Market – specializes in exotic options like turbo warrants
- Stockholm Stock Exchange, one of the OMX Exchanges

## **Switzerland**

- SWX Swiss Exchange
- Bern eXchange (BX)

## **Turkey**

- Istanbul Stock Exchange (ISE)

## **Ukraine**

- PFTS Ukraine Stock Exchange

## **United Kingdom**

- London Stock Exchange (FTSE 100 Index)
- Plus Markets
- Markit BOAT
- Project Turquoise

## **North America**

### **Bahamas**

- Bahamas Securities Exchange

### **Barbados**

- Barbados Stock Exchange (BSE)

### **Bermuda**

- Bermuda Stock Exchange (BSX)

### **Canada**

- CNQ
- Nasdaq Canada
- TSX Group
  - Toronto Stock Exchange
  - TSX Venture Exchange
- Winnipeg Commodity Exchange
- Montreal Exchange

### **Cayman Islands**

- Cayman Islands Stock Exchange (CSX)

### **Costa Rica**

- Bolsa Nacional de Valores de Costa Rica

### **Cuba**

- Havana Stock Exchange closed in September 1960

### **Dominican Republic**

- Bolsa de Valores de la República Dominicana

### **Eastern Caribbean**

- Eastern Caribbean Securities Exchange (ECSE)

### **El Salvador**

- Bolsa de Valores de El Salvador

### **Guatemala**

- Bolsa de Valores de Guatemala

### **Honduras**

- Bolsa Centroamericana de Valores
- Bolsa Honduras de Valores

### **Jamaica**

- Jamaica Stock Exchange

### **Mexico**

- Bolsa Mexicana de Valores (BMV)

### **Nicaragua**

- Bolsa de Valores de Nicaragua

### **Panama**

- Bolsa de Valores de Panama

### **Trinidad and Tobago**

- Trinidad and Tobago Stock Exchange

### **United States of America**

- American Stock Exchange (AMEX)
- Boston Stock Exchange (BSE)
  - Boston Equities Exchange (BEX)
  - Boston Options Exchange (BOX)
- Chicago Board Options Exchange (CBOE)
- Chicago Board of Trade (CBOT) - Owned and operated by CME Group Inc.
- Chicago Mercantile Exchange (CME) - Owned and operated by CME Group Inc.
- Chicago Stock Exchange (CHX)
- International Securities Exchange (ISE)
  - ISE Options Exchange
  - ISE Stock Exchange
- Miami Stock Exchange (MS4X)
- NASDAQ Stock Market, The - Owned and operated by NASDAQ OMX Group, Inc. (formerly The Nasdaq Stock Market, Inc.).
  - NASDAQ Global Select Market
  - NASDAQ Global Market (formerly NASDAQ National Market)
  - NASDAQ Capital Market (formerly NASDAQ Small Cap Market)
- National Stock Exchange (NSX)
- New York Stock Exchange (NYSE) - Owned and operated by NYSE Euronext.
  - NYSE Arca (formerly Pacific Exchange)
- Philadelphia Stock Exchange (PHLX)