

04B012I

Project Number: DTZ 0501-49

An Interactive Qualifying Project Report: submitted to the Faculty of  
WORCESTER POLYTECHNIC INSTITUTE  
in partial fulfillment of the requirements for the  
Degree of Bachelor of Science  
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Submitted:  
December 16, 2004

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## Abstract

Through the use of tools and resources available from the internet as well as text references, our team conducted an eight week stock-market simulation to investigate the effects of different trading strategies on stock market investment. The experience gained throughout this project will allow us to become more competent investors in the future.

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# **1. Introduction**

## **1.1 Goals and Methods**

The primary objective of this stock market project is to establish a solid foundation of understanding in concepts related to the stock market and investing in general. We researched several different types of investment strategies and ran simulations to test our observations with empirical data. The explanation of what was involved within each goal follows.

Our first goal of the project is to familiarize ourselves with the general operations of the market and to develop working knowledge to aid us in possible future, real life investments. The “general operations” of the stock market includes major reasons for market fluctuations. We will discuss factors such as oil prices, interest rates, etc in detail, later in the report. We examined the market for several weeks before we made our initial investments.

Our second goal during this time was to uncover trends, subtle or otherwise, that would motivate us to invest. We use fundamental as well as technical analysis to assist us in making intelligent investment decisions. We also look for promising quarterly earnings and statements that would justify further investigation into the company. Our research method filters out historically “poor” performing sectors of the market and concentrates only on the strong ones. We assign a section of the report to sector strength and direct causes. After choosing a sector of the economy that had a historically strong record of performance, we examined the stocks that we placed within that sector. We used filters that analyzed specific criteria to determine the strongest stocks within a chosen sector. The reader can read in detail about these stocks later in our report. After the screener filters the stocks, we analyzed company financial statements and read detailed background information in an attempt to make an educated buy or pass decision.

Our group acknowledged the difficulties in investing wisely, but we extensively researched each company in an effort to avoid naïve investment errors.

Our third goal involved studying the volatility of the stock by using Bollinger Bands, a chart type that we will explain in the section “Chart types,” which is located in the table of contents. Our group also wanted to understand and be able to use many other graphs that we thought would be pertinent in technically analyzing any chosen stock.

The first simulation we performed consisted of a portfolio of “high-growth” issues. These securities typically trade at high P/E ratios because of past records of impressive growth, signs of strong management, or state-of-the-art products. We based our initial screening on criterion that characterizes high-growth companies, in an effort to gain a primary list of potentials. We will further discuss the details of these screenings later.

The second simulation we performed consisted of a portfolio of value securities. The definition value stock is broad and not strictly defined; however, we will explicitly state our criteria for classifying an investment as such. One of the objectives of value investing is purchasing stocks that the market has incorrectly priced. We based our initial screening on such criteria as high book value, low P/E ratio, low debt to equity ratio and several other traits that we will discuss in detail in the appropriate section.

The third simulation was an analysis of an investment strategy termed “Dog’s of the Dow”. The strategy involves investment in high-grade Dow Jones Industrial Index stocks, and we will explain why it is an intelligent strategy for investors that do not have a lot of time to dedicate to analysis.

The fourth simulation was an analysis of a market phenomenon called “The January Effect”. In the past, there was a tendency for small capitalization stocks to outperform the annual

return of the stock market from the months of December to January. Analysts first observed the effect in the 1980's, however; we have shown that in recent years, the effect is practically unnoticeable because the market has adjusted.

## **1.2 History of the Stock Market**

The idea of a market for goods and services has been around for many millennia. The first official market to open in the United States was the New York Stock Exchange (NYSE). Less than 15 years after the signing of the Declaration of Independence, in 1792, the NYSE was founded in Manhattan in the area of Wall Street (Low, 107). The objective of the newly established exchange was two-fold. The market would serve as a front for the government to sell bonds that would lessen the burden of the Revolutionary War. Another main objective of the NYSE was to serve the many new corporations developing in the states by allowing them a market to trade stocks. (Low, 98)

Business owners originally created the market as a call market where shareowners call off shares from a list and each corporation took bids "one by one". As the popularity of the NYSE grew, it became evident that the list method was not feasible and change was essential. In 1871, a new marketplace was built so that the trading for all companies could occur simultaneously on the same floor; this is termed a continuous market and is the accepted structure for market operations. (Low, 100)

Today there are many markets across the United States serving different parts of the country such as Salt Lake City, Chicago, Spokane, Boston and others. While all of these markets may be separate, their objectives are sure to be the same. One focus of today's markets is to provide a place for buyers and sellers to do business in the form of trading stocks. Another duty

of the markets is to broadcast the prices of all stocks to the public so that they may have a sense of the performance. (Low, 101) This task in particular has become much more efficient since the inception of the World Wide Web. All of the information can be transferred immediately to homes of people with real-time quotes. In addition, other information about the NYSE such as the hours of operation for the market and the rules and regulations can easily be obtained by visiting the official web space for the New York Stock Exchange at [www.NYSE.com](http://www.NYSE.com).

### ***1.3 Speculation vs. Investment – Importance of Knowing the Difference***

Benjamin Graham, author of *The Intelligent Investor*, and mentor of the famous Warren Buffet, went to great lengths in his book to establish the difference between investment and speculation. Speculation in a financial sense, is taking an above average risk with the chance of above average return, usually over a short period. It is buying something based on its potential selling price, rather than its underlying value.

Day trading in the stock market is a classic example of speculation in action. Most of the time, day traders will buy stock issues that have little underlying value, based solely on what they may sell for in the near future. The practice became very popular in the bull markets of the recent past. Traders were making substantial amounts of money in the stock market, and it seemed that there was no limit to how high stocks could soar. The Internet tech stocks of the late 90's would often trade at very high multiples of their earnings because of records of prodigious growth. Stock traders felt the growth would continue forever, but Graham would have advised otherwise. He would have described it all as speculation.

The need to speculate and take risks is inherent to being human, and it is this tendency that must be disciplined in order to become a successful long-term investor. However, there are two types of speculation, intelligent and unintelligent. Intelligent speculation is taking a risk that appears justified after careful weighing of the pros and cons of the situation. An unintelligent speculation is taking risk without an adequate examination of the situation. As long as an individual knows the difference between speculation and investment, it is acceptable to speculate in certain circumstances. Moreover, it is possible to make remarkable gains with intelligent speculative endeavors. However, Graham recommends that no more than 10% of financial assets be distributed to speculative ventures.

Investment on the other hand, is taking an average or low risk, with the chance of solid returns, usually over a long period of time and with extensive research to back up the investment. An investor generally falls into one of two categories: a defensive investor or an enterprising investor. A defensive investor is an individual who does not have the time or skills to dedicate to thorough financial analysis to outperform the stock market. Defensive investors can easily match stock market performance or slightly outperform it by using the virtues taught in Graham's book and by avoiding speculation. Enterprising investors are individuals who dedicate the time necessary to perform thorough in-depth analysis of corporate financial statements to achieve market-beating portfolios. It is this distinction that an individual should make early on to avoid mixing between the two types. A defensive investor must invest without modifying their portfolios over long periods of time. With proper stock selection, frequent trading is completely unnecessary and only works to dilute gains.

## ***1.4 Benefits of Investing as an Individual***

There are several advantages to investing as an individual as opposed to being forced to invest in the stocks of the big mutual fund managers. Mutual funds carry the inherent disadvantage that they cannot invest in extremely high growth small market capitalization stocks. Fund managers need to manage hundreds of millions of dollars, and because putting only a few million dollars into a small cap stock will drastically push its price up, fund managers cannot invest in them without over diversifying and diluting returns. In addition to driving the price into unreasonable territory, putting millions of dollars into a small cap stock will typically cause an ownership exceeding the 5% SEC boundary.

Many people avoid investing in small cap stocks because they fear the risk associated with them. While bad news and poor analyst estimates drastically affect small cap stocks, they can make great investments over the long term if an investor properly researches and analyzes them. From 1925 to 1996, small-cap stocks posted average annual returns of 12.6 percent, versus large caps return of only 10.6 percent (Fool Investment Guide p 99). Over a long period of time, the compounded return from the difference of those two percentage points means a difference of \$3.13 million on an initial investment of \$1000 over a period of seventy-one years. If investing in small caps, it is a good idea to plan on holding them for a long period of time because many fluctuations in price are bound to occur.

There are many investment vehicles that are out of the reach of individuals who do not meet certain criteria defined by the SEC. Being classified as an accredited investor (or qualified purchaser) entitles a person access to investing in unregistered securities, investing more than \$150,000 in hedge funds, and other investments with potential high rates of return. Unregistered securities are corporations that have not gone onto a public exchange yet. For an individual to be

classified as an accredited investor, they must have income exceeding \$200,000 per year, or joint net worth that exceeds \$1 million. The SEC laws are designed to protect people from putting their capital into potentially highly risky and speculative endeavors. However, they also keep lower income individuals from accessing the investments with the highest rates of return.

## **2. Investment Comparisons**

### **2.1 Introduction**

In a financial context, an appropriate definition for investment is the act of turning cash into another form in expectation that the principal amount will increase in value over a period of time, thus income or profit is realized. An investment vehicle is the method by which cash or principle assets are transported into a more valuable form. Each method of investment includes qualities that can be advantageous or disadvantageous depending on the financial situation of the investor. Some traits of different investments include: risk, differing rates of return, insurance, protection from inflation, different lengths of time to reach maturity, differing minimum deposits, volatility, etc. Some types of investment vehicles that will be compared will be stocks, mutual funds, bonds, certificate of deposit, money markets, and hedge funds.

### **2.2 Mutual Funds**

Mutual funds are one type of investment vehicle that has become quite popular in recent times. They are most popular with less experienced investors for their simplicity and low volatility. The mutual fund investor only has to conduct very undemanding research, because the idea is to invest in a fund and automatically have a diversified portfolio. However, most mutual fund managers over diversify their portfolios, and the gains are diluted by losses of companies, so the return tends to under-perform the market indexes. Many mutual funds also have load fees associated with them, which automatically causes a lot of the investment to go towards compensating the fund managers for their valuable research. However, market performance can always be matched by simply investing in an exchange-traded fund, which will be discussed later. The commissions associated with mutual fund investing are usually more costly than

trading with a deep discount brokerage service. One of the investments that can make the greatest substantial gains, small capital stocks, are generally out of reach from mutual funds. Mutual funds must invest millions of dollars into corporations, and investing such large amounts into small cap companies can have considerable impacts on their trading price. Therefore, mutual funds are automatically entitled to investing in corporations that have already made the largest gains in their histories.

### ***2.3 Certificates of Deposit***

Certificates of deposits have been around for a very long time. They offer extremely low risk, but also come with extremely low rates of return if the minimum invested amount does not exceed \$100,000. Certificates of deposit are FDIC insured, which means the rate of return offered is guaranteed, and there is no fear of losing ones money. However, they are not protected from the effects of inflation, and in the case of high inflation, keeping money in a CD is worse than spending it or putting it in an inflation protected investment. A one month certificate of deposit typically has a rate of return around 1.05%, while two year CDs can pay as much as 2.89%.

### ***2.4 Bonds***

Bonds are another form of investment that has not been as glamorous in the media lately. Bonds are a form of debt investment, where the investor is loaning money to a corporation that will borrow the funds at a specific interest rate. Bond interest is usually paid semi-annually (every six months) until maturity is reached. There are several types of bonds: corporate bonds, municipal bonds, treasury bonds, treasury notes, and treasury bills. Treasury bonds are very safe, as the US Government backs them, and there are even inflation-protected bonds called TIPS (Treasury Inflation Protected Securities). Typically, the higher the rates of return of a bond, the

more risky the investment. The main risk associated with the possibility of the bond defaulting, which has happened in the past when corporations could not pay the debt back to the investor. Careful research and finding a good bond rating allows the investor to avoid defaults. Creating a diversified corporate bond portfolio is impossible for the investor without large amounts of money, because minimum investment is around \$10,000 per bond. With ten bonds, the portfolio would be \$100,000. To get the advantage of bonds, however, the casual investor can invest in bond funds, which match the performance of diversified bonds without directly investing in bonds. Investing in high quality bonds is often a great way to diversify a portfolio when the stock market is doing poorly. Bonds and bond funds have a guaranteed rate of return, and they continue to mature while the economy remains flat or weak.

## ***2.5 Money Market***

The money market is a short-term debt market with maturities of about one year. Money market investments are liquid, and relatively safe. It is for this reason that some large brokerage firms keep all of their client's cash in money market funds. The return is typically in the 1-2% per annum range. Money markets are an excellent place to keep cash if there are no higher return, well-researched investments immediately available or if high liquidity is required. Money markets are typically not FDIC insured, which means it is possible to lose money in them. However, it is unlikely that money will be lost because the investments are very low risk.

## ***2.6 Stock Market***

Over the past year, the total return from the S&P 500 Index was 13.62%. Over the past three years, the total market return was 3.88%. Stock market investing is more volatile than

investing in US Treasury bonds, mutual funds, or certificates of deposit. However, over long periods (over one year), the market indexes typically outperform these other investment vehicles. Furthermore, no research is required to invest in an index-tracking fund. A person simply has to place an order to buy shares of S&P Depository Receipts and trust that they have market-matching performance. With a little time and research, an investor can build a defensive stock portfolio with the majority of holdings in an index fund and 10% in some solid corporations.

In the past, stock market trading was associated with high commission stockbrokers. Trades were initiated over the phone, and commissions could cost well over \$40 per trade. The broker would end up being the intermediary between an investor and his security holdings. In addition to trading costs, brokers often made money by selling corporation research information. With the recent advent of online deep discounter brokerages, even an individual without \$10,000 to invest can get into the return on the stock market.

## ***2.7 Hedge Funds***

The term hedging in a financial context means to protect your portfolio from losses. When faced with a declining market, some investors respond by closing their stock positions to protect against further loss. While this is one approach, others available can actually allow and investor to make gains in a declining market. Exchange Traded Funds (ETF's), such as SPY and QQQ can protect a portfolio from losses. Some investors actually short sell these funds during deteriorating markets in order to increase capital. We will discuss the details of short selling later.

Traditionally, hedge funds were only available to individuals classified as accredited investors. We will discuss this classification in more detail later in the report. More recently,

however, hedge funds have become available to lower income investors through funds of hedge funds. Unlike mutual funds, hedge funds are not registered with the SEC. This means that hedge fund investments are not subject to SEC oversight, and without research, they carry some serious risks. Funds of hedge funds are available with much lower purchase minimums than hedge funds themselves. Investors can obtain them with a minimum of \$25,000, which is still substantial for the casual investor. However, this figure is much lower than the minimum necessary for a hedge fund. Before investing in a fund of hedge funds, an investor should carefully review the fund's prospectus, find out how the fund's assets are valued, find out about any fees, and research the backgrounds of the fund managers. Hedge funds attempt to profit in all kinds of markets by pursuing leveraging and speculative practices that can increase the risk of loss (SEC.GOV Hedge Funds <http://www.sec.gov/answers/hedge.htm>).

### **3. Investment Strategies**

#### **3.1 Day trading**

Day trading is a practice that is very risky, but can also be very successful. The term “day trader” or “day trading” means just what it says; you buy and sell stocks at a rapid pace throughout a day’s time. A day trader hopes that these stocks will either continue rising or falling for the seconds or minutes that they actually own the stock. If a day trader makes smart decisions, profits can be made quickly. Since the duration of holding shares in a stock while day trading is very short, a day trader usually invests a large amount of money so that their returns will be worthwhile. Investing a small amount of money at a certain price and selling it at a price that is only a little larger will not reap any worthwhile gains. In fact, money may even be lost on that trade.

Emotion is an important part of day trading. Since many decisions are quick and impulsive, misjudgments are easy to make. Day traders who suffer from lack of discipline often allow their emotions to rule their trading decisions, which then lead to bad decisions and unacceptable trading losses. Emotions should never be allowed to rule trades. One way to become a successful day trader is to construct a plan (subject to any changes from time to time) and consistently adhere to it. A "shoot from the hip" or a "seat of the pants approach" to day trading must not be utilized. A good day trader exits the market when he has reached his initial objective and does not let emotions like fear and greed influence day trading decisions.

A successful day trader usually possesses certain qualities. Confidence is a trait usually found in day traders because lack of self-confidence will usually lead to second-guesses which can then lead to missed trading opportunities. A good trader must possess discipline in order to keep from straying from a set plan or a set of goals. Not following a plan can also lead to poor

trading performance. Good day traders also show decisiveness, they do not hesitate to execute a trade. Hesitant day traders do not become successful. The ability to accept risk and failure, patience, and concentration are also traits that are associated with a successful day trader. Perhaps one of the most important qualities is passion, because without a passion for trading and investing, it is easier for a trader to become frustrated and lose sight of the important goals.

### **3.2 What is Value Investing?**

Value investing is a form of investing created by Benjamin Graham and David Dodd that became popular after the publication of the revolutionary *Security Analysis* in 1934. In value investing, much emphasis is placed on determining a stock's underlying value through thorough analysis of financial statements and past records. Graham created the method of calculating a stock's intrinsic value, a per share price valuation, independent of the current trading price. Intrinsic value is based solely on a company's underlying hard assets and cash, which allows it to assess a company for its actual value, rather than what the market has valued the stock for.

Graham observed that in the stock market, companies typically trade at extremes of their actual value. A corporation with a past history of astonishing growth would typically be trading at high multiples of its earnings per share or underlying value, an effect solely based on the market speculation that the company would continue to grow at its past rate. Large market capitalization corporations would trade at very expensive prices, because investors believed that they were the safest places to put their money. On the opposite end of the spectrum, corporations that encountered some financial mishap or halts in growth would end up trading at prices much lower than their intrinsic value. Value investors scavenge through the market trying to find

bargain stocks that have been wrongly priced by the market. Successful value investors dig through financial statements and find stocks that are worth much more than their current price.

Instead of relying on price to earnings ratio for only the trailing twelve months, value investors will sometimes look at an average of the past few years' earnings in relation to the price, to average out a large spike in earnings due to rapid growth. A good value investor will typically look at the past five years of form 10-K's and at least a year's worth of form 10-'s. Corporations with more cash from financing than from operating activities should be avoided. Graham specifies that a defensive investing portfolio should meet some strict criteria to remain safe. The price to book value per share should not exceed a ratio of 1.5. When valuing a corporation, the intangible assets and goodwill should not be part of the book value of the security. Price to earnings ratios should be moderate and no greater than 15. If the company issues dividends, it should have a consistent dividend issue record. A conservative earnings indicator is that over the past ten years, the company's earnings should have increased by at least 1/3. Another important ratio to calculate is Return on Invested Capital (ROIC), which is a useful indicator for comparing a company's efficiency of management and practicality of product lines. The ROIC is calculated by dividing the owner earning by invested capital. Owner earnings are calculated by the sum of operating profit, depreciation, amortization, and goodwill minus federal income tax. Any ratio greater than 7% is good.

When analyzing a company's quarterly and yearly financial statement, an intelligent investor should check several vital things. Any corporation that acquires more than two to three companies in a year is heading for trouble. We will discuss problems associated with acquisitions below. Graham gives several examples of past companies that were "serial acquirers", and the author of his commentary shows that the same was true of Lucent

Technologies, and Tyco. When analyzing the financial statements, it is intelligent to make sure the company has many customers, rather than just a few customers that are buying a lot of product. The company should be a marathoner, not a sprinter. The fastest growing companies tend to overheat and flame out (Ramezani, Soenen, Jung 56-67). The management of the company should state in past financial statements what their intentions for the future were, then check ahead in the future to make sure that what was said was actually done. The executive of the corporation should not be seen publicly promoting the company. The most successful companies did not have executives that were constantly exposed publicly trying to stir up a buzz and make the company appear sensational. Executives who do this are obviously not focused on the long term. Graham recommends reading the financial statements backwards because accountants generally put the things they don't want the public to know at the end. Reading the footnotes in financial statements is also very important. It is also crucial to understand that pro-forma statements of earnings are not genuine. They have been completely abused in the past. Pro-form earnings and statements allow a corporation to state what they would have earned in the absence of some prodigious expense or if some serious problem had not occurred. Graham also supports the idea that the efficient market hypothesis does not always apply. Otherwise, it would be impossible to find any type of value investment in the market.

An important discernment in *The Intelligent Investor* is knowing the difference between being an enterprising investor and a defensive investor. An investor must decide which one these categories he or she fits into before making any decisions. As an enterprising investor, one should prepare to dedicate substantial effort and time to analyzing financial statements and calculating important ratios. In addition, they must be prepared to check up on the corporations they are invested in from time to time when quarterly and annual reports are released to verify

that everything is going well. Enterprising investors must also possess patience, as holding stocks through inclement market conditions is crucial to realizing the most gains. A defensive investor must be prepared to put all of their assets into less risky vehicles such as index funds and bonds. Time and patience is crucial to being a successful defensive investor as well. A defensive investor must be prepared to hold onto their stocks and trust that the market will return substantially over a long enough time line.

### ***3.3 Reasons supporting value-investing techniques***

Some of the best evidence supporting the use of value investing techniques is in the record of accomplishment of famous value investors. Some of these investors are: Warren Buffet, Charles Munger, Benjamin Graham, and Peter Lynch. Historically, value investing has proven the most likely to outperform the market over a long period of time. Additionally, it was Benjamin Graham's famous book "Security Analysis" that completely revolutionized the way people on Wall Street chose to invest. Before Graham, most trading was heavily based on speculation and the stock market was viewed much more as an art than a science. Graham invented the term intrinsic value, which is an indicator of corporations' fundamental worth based upon its assets rather than its market capitalization. Another mistake investors have been making since early days of the stock market is believing that because growth happened in the past, it will continue in the future. There is no basis to believe that because a stock has incredible historical growth that it will continue to grow at that rate in the future. Graham strongly advises that investments not be based solely on growth. He dictates that only if a security has both exceptional growth and a high intrinsic value (greater than the current trading price by at least 1.5 times) should it be purchased.

### **3.4 Intrinsic Value (Net Asset Value)**

The formula for calculating intrinsic value is  $(\text{Total Shareholder Equity} - \text{Soft Assets}) / (\text{Fully Diluted Number of Shares Outstanding})$ .

Value investors invest with the intent of holding their stocks for very long periods, many years. A good value investor stands by the idea that they are so confident in the research they performed on their investment that they should very rarely have to check what the current quoted trading price is. Of course, intrinsic value is not the only important rating to look for when choosing an investment.

### **3.5 Diversification**

Although Warren Buffet is famous for saying, “Put all your eggs in one basket, then watch that basket very closely”, diversification of a portfolio is crucial to succeeding as a defensive or enterprising investor. Graham advises that unless an individual has ties to management enough to understand the inner happenings of a company, portfolios should remain diversified. Furthermore, he advises that all defensive investors keep 90% of their investment assets in an index fund and only leave 10% to their own selection. Unless an individual is prepared to dedicate the time and effort needed to perform thorough financial analysis, Graham simply says to avoid investing or keep money in an index fund and hold it indefinitely. Investing in an index fund provides automatic diversification. Stock indexes can be tracked by the symbol SPY, which is S&P 500 Depository Receipts. This stock follows the S&P 500 index almost exactly and has very low fees on the return. An additional benefit is that it regularly issues dividends in bear markets or bull. As an enterprising investor, Graham advocates keeping some

more reputable stocks in a portfolio as long as they are not overpriced based upon their intrinsic value.

### **3.6 Resources**

One source for investors is Reuters. Reuters is a global information company providing indispensable information geared toward for professionals in the financial services, media and corporate markets. More than 90% of their revenue derives from their financial services business. Some 427,000 financial market professionals working in the equities, fixed income, foreign exchange, money, commodities and energy markets around the world use Reuters products. Reuters provides financial institutions with specially designed tools to help them reduce risk and distribute and manage the ever-increasing volumes of market data. They also offer personalized automated trading products for the treasury market. News, text, graphics, video, and pictures to media organizations and websites around the world is also offered by Reuters.

Another resource is Morningstar, Inc. Morningstar is a leading provider of independent investment research. The company offers an extensive line of internet, software, and print-based products for individual investors, financial advisors, and institutional clients. Morningstar is a trusted source for insightful information on stocks, mutual funds, variable annuities, closed-end funds, exchange-traded funds, separate accounts, and 529 college savings plans. With operations in 16 countries, Morningstar currently tracks more than 100,000 investment offerings worldwide.

Bloomberg is another investor resource. Bloomberg deals with more than 260,000 professionals in more than 125 countries. The Bloomberg Professional service integrates data, news, analytics, multimedia reports and e-mail onto a single platform. It is used by market

professionals around the world to make informed decisions and to complete transactions in any currency. Bloomberg enables access to more than 3.6 million financial instruments. They have a full arsenal of investment tools and services, putting them in the top five most trafficked websites this year.

Edgar Online is a provider of business, financial and competitive information derived from U.S. Securities and Exchange Commission data and a developer of financial and business system solutions. Edgar Online is a company specializing in making complex regulatory reporting by public companies actionable and easy-to-use. The company makes financial information and a variety of analysis tools available via online subscriptions and licensing agreements to professionals in financial institutions, corporations, and law firms.

There is another online trading resource located at Barchart.com. They offer fast, accurate and dependable streaming quotes and charts. These services have 60 customizable and user-programmable technical analytics. The site offers advanced equities designed for the technical trader, with tools for selecting, analyzing, charting, and comparing stock and commodity contracts. Some features include sector and signal analysis, as well as customized technical search and portfolio management tools.

Finally, the last resource to be mentioned is Investor's Business Daily. IBD is mainly a paper resource, including news articles and informative columns on the market. Investor's Business Daily is a great source for picking up the latest news pertaining to the market. It contains the latest charts, figures, and tables that have to do with important fluctuations in the economy. IBD is definitely a primary source when getting up-to-date information about the market is needed.

### **3.7 Fundamental Analysis vs. Technical Analysis**

There are two common types of methods used for obtaining information on a stock: fundamental and technical analysis. A fundamental analysis will emphasize the performance of the company and the product; this is a study of the company and its viability based on financial and product performance. A Technical analysis, on the other hand, will focus on the market performance of a company. With a technical analysis this data is used as an indication of a stocks practicality in a purchase decision. While the benefits and uses of each of these analysis methods may be preferred in specific markets or particular stock types, both analysis types have their place when a prospective buyer is interested in gaining knowledge on a company. Some stockholders will often use both forms of analysis in their evaluation of a stock because both methods have their benefits and drawbacks.

A quality fundamental analysis will include a broad range of company performance measures. Some common indices of merit for a perspective stock might include the company's profitability and growth rate, its sales growth, and its return on equity (ROE). Sometimes investors will find it advantageous to also research the particular product or service that a company may offer with focus on its ingenuity and robustness. A company with a clever product is more likely to perform better in the market than a company that has an unexciting product line as its main focus. William O'Neil, founder of *Investor's Business Daily*, writes that when performing a fundamental analysis on a company, that "[t]he stock should also have strong institutional sponsorship and in most cases be in a leading industry group." He states that the foremost institutions supposedly have done more in-depth research than the average consumer and he makes the point that if these institutions have conducted research on a company and are willing to invest in them, then they are most likely a safe option to invest in. There are a variety

of other fundamental factors that play a role in the analysis of a company, but the common ones have been specified above as a guide. Some common focuses when performing a technical analysis are specified below. (O'Neil, 18-20)

A complete technical analysis should pay careful attention to the many available charts that track the performance of a stock as well as its volume in trading. Much of this type of analysis relies on the use of pattern recognition to recognize the 'proper' time to invest in a stock. There are a several popular patterns that are recognizable with the right data, and properly understanding and identifying these repeatable market performances can be very profitable to an investor. One popular pattern is the "cup with handle". (O'Neil, 44-84)

## **3.8 Technical Analysis**

### **3.8.1 Approach and Overview**

The most extensive part of our analysis of each security came through the use of the Moving Average Convergence Divergence (MACD) chart. Only the "standard" 26-day and 12-day exponential moving averages were used. The moving averages act as lagging indicators and provide an adequate approximation of a company's momentum. MACD graphs are one of the most reliable technical indicators and are commonly used in computer tracking programs.

The difference between the 26-day and 12-day moving average is used to create the MACD graph which is usually superimposed over a 9-day moving average, also called the "trigger-line." You can see in the example figure 3.1, on the next page, where you would typically see the 26-day, 12-day, 9-day moving averages, as well as the MACD line and the MACD-histogram. This particular example is that of Microsoft Corporation and their performance within the past year. Keep in mind that there is no "technical analysis" in this

introduction, the figure is there to show you where you can find the aforementioned names later in this chapter.



Figure 3.1: Microsoft Corporation Technical Chart

The Bollinger Band, which you can see in the top section of figure 3.1, is simply a way to measure a company’s volatility. Volatility is a “measurement of change in price over a given period. It is usually expressed as a percentage and computed as the annualized standard deviation of the percentage change in daily price. The more volatile a stock or market, the more money an investor can gain (or lose!) in a short time” (www.stockcharts.com).

To start off, you can think of the MACD chart as a momentum indicator for the security. If you look at figure 3.1, you will see that the MACD behaves almost exactly the same as the security itself. If you look at the stock price, it is very difficult to tell whether a bearish market will continue downwards, stop and level off, or rebound back up. Same for a bullish market; will

it continue on to new highs? The MACD and MACD-histogram helps us to recognize trends, and offers potential buy and sell signals.

A general rule of thumb when trying to interpret the movement of a security is to watch for “trigger-line crossovers.” This will occur when the MACD line crosses over the trigger line in either a bullish or bearish fashion. A bullish crossover will occur when the MACD line comes from below the 9-day moving average line (Trigger Line), and moves to a position above it. A bearish crossover will occur when the MACD line moves from a position above the 9-day moving average to a position below it. Referring back to figure 3.1, in almost every bearish crossover, you will see a downtrend in the security’s value; same goes for the bullish crossover, you almost always see a rise in the security’s value.

There are a few exceptions which may not always appear on every stock you analyze. This occurrence is called a “false signal.” A false signal is produced when the MACD either moves in a bullish or bearish fashion, and the security’s value trends in the opposite direction. This can be caused by numerous factors and is usually followed by a correction, which negates the original movement causing the MACD to produce the right signal. This rapid movement in buy and sell signals is known as a “whipsaw.” By definition, a whipsaw occurs when a buy or sell signal is reversed in a short time. “Volatile markets and sensitive indicators can cause whipsaws. For example, a whipsaw would occur if a position trader initiates a long position on a bullish MACD crossover and has to close it the next day because of a bearish moving average crossover. The signal was reversed and the trader had to exit quickly” ([www.stockcharts.com](http://www.stockcharts.com)).

The MACD-histogram helps to foresee any radical and false changes in the MACD graph. The MACD-histogram has the unique ability to identify and present false signals by

interpreting the momentum of the MACD graph versus the 9-day moving average. The histogram represents the difference between the 9-day moving average and the MACD graph.

Figure 3.2, taken from the SanDisk (SNDK) technical analysis, shows exactly how buy or sell signals can be confirmed. The red line indicated a negative divergence. You can see how the MACD graph goes from a current high to an even higher high. However, if you take a look the MACD-histogram, you will see a current high but when the MACD graph approaches its new high, the histogram does not follow. Even though the MACD graph is in bullish territory, the histogram failed to back it up. This would contradict the MACD graph's signal of a high momentum stock, in which case potential buyers should consider holding off. After this signal was reviewed, you can see a sharp drop in the stock's value. The same goes for the green line. A second high for the MACD graph was not backed up by a secondary high from the histogram. This might be confused as a positive divergence, where the second high on the histogram is nearly equal to that of its' previous. In this case, an investor would have to keep a sharp eye, and use other technical indicators to aid in his/her decision.



Figure 3.2: SanDisk Technical Chart

### 3.8.2 Analysis

#### SanDisk (SNDK)

The technical analysis of SanDisk starts on September 20, 2004 and runs until October 14, 2004. Because of the short duration of this simulation, it is difficult to fully analyze this chosen region of the security’s behavior. It is necessary to incorporate data outside the designated time limit and to historically track the company’s fluctuations. This helps us to better understand the company’s typical stock behavior and gives us the benefit of being able to take a more defensive position when a negative “flag” is tripped. It also helps us to foresee any positive spikes that may occur.

In figure 3.3, we have four separate but relative graphs. The very top graph is the Bollinger Band, the second is the twelve and twenty-six day moving average graph overlaid on a

HCL Bar performance graph of the SNDK. The third graph represents the volume traded, and the fourth graph is the Moving Average Convergence Divergence (MACD).

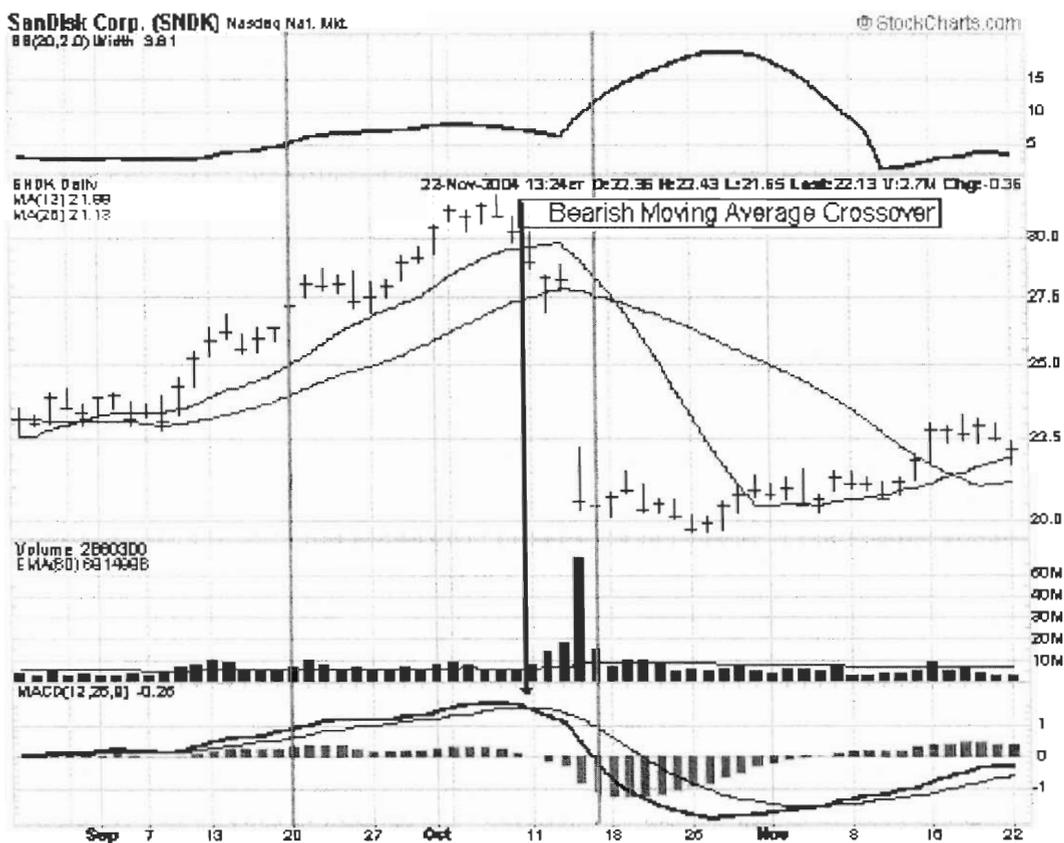


Figure 3.3: SanDisk Technical Chart

The particular stock has relatively low volatility, except for “semi-circle” part located between mid October and early November. This semi-circle is explained by the sharp drop in price of the stock between October 11<sup>th</sup> and the 18<sup>th</sup>. The Motley Fool released an article on October 14<sup>th</sup> that read...

*“After the bell yesterday, **SanDisk** (Nasdaq: SNDK) reported third-quarter earnings that came up short, and now shares of the leading flash-memory maker are getting absolutely smashed, down nearly 24% to \$21 and change.”*

You can see for yourself that in the volume portion of figure 3.3, the large spike was warranted, and was a result of SanDisk's poor financial news release. The MACD graph didn't predict the release of a negative financial report, what it did do was attempt to analyze any instability the company may have had during this general time period. Marked in figure 3.3 is the Moving average Crossover. Although the wording is in moving average (9, 26) graph, what this is referring to is the MACD graph on the very bottom. If you examine where the arrow is pointing you will see the MACD line crossing over the trigger line in a bearish fashion. If you are properly following this company and all their news releases, you might see this as a sell signal and sell off your shares. In this particular case, the signal was not false and represented a large threat to investors.



Figure 3.4: SanDisk Technical Chart, showing year

If you had been following this company for a long time, figure 3.4 might have helped you to predict this fallout. This method also uses the MACD analysis method, and makes use of the histogram as well as the MACD and trigger line.

The red line near the number one represents a negative divergence. If you look closely you can see positive momentum, signified by the fact that the histogram bars with two relatively high peaks are on the top side of the center line. The left peak starts a new high and as time progresses it dips slightly and attempts to climb again. We will consider this attempt at another “new” high a failure and now examine the MACD and trigger line. Looking at the MACD line, you can see how it mimics the activity of the histogram set with one slight but significant difference. In the histogram, the attempt to create a new high was a failure, but the MACD and trigger line show it as a success. This represents a decrease in momentum of the stock and usually signifies either a price plateau or fall. In this case, the stock price would have fallen from about \$32 to under \$25.

The green line near number two can be seen as either a negative or positive divergence. I understood it to be a positive divergence because the peaks of the histogram appeared to be fairly equal, and as you can see, the second peak of the MACD graph displays a false “new” high on the second climb. The MACD continued on to “new” highs, but the histogram showed equal or even lesser highs. This equal high seen in the histogram failed to support the strength seen in the MACD.

### **Bradley Pharmaceuticals, Inc. (BDY)**

The technical analysis of Bradley Pharmaceuticals, Inc. begins on September 20<sup>th</sup> and ends on September 21<sup>st</sup>. This stock was only in our portfolio for one day. Because of its

extremely short holding time, a beneficial analysis over that one day cannot be given. Instead, we will analyze the full period that is shown by the graph (figure 3.5) below.

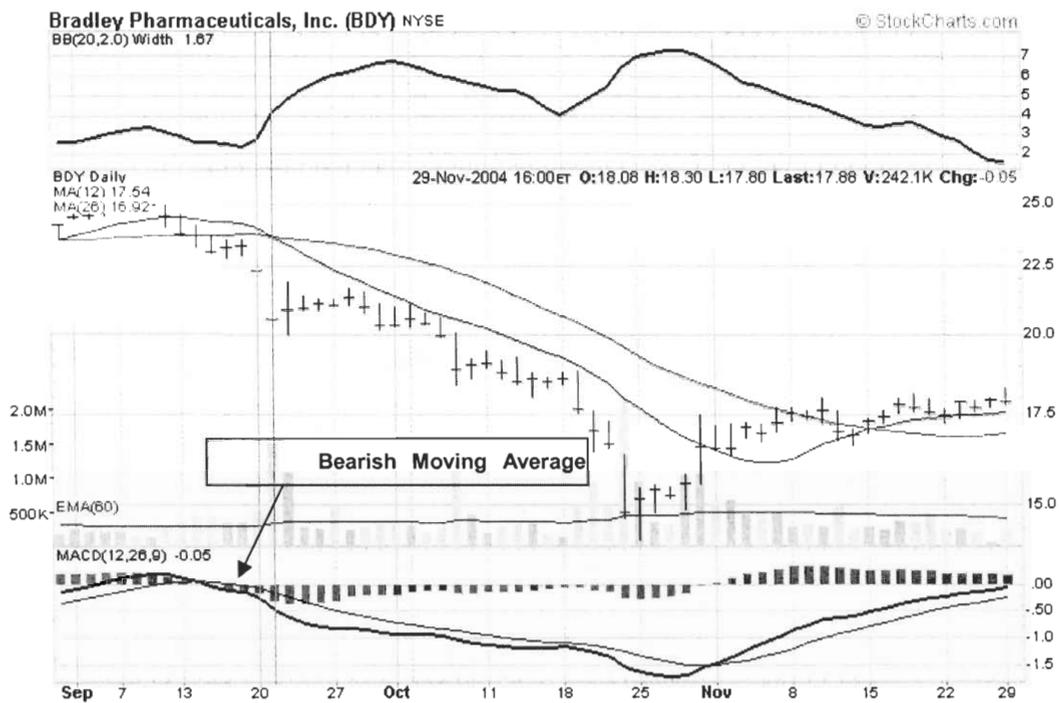


Figure 3.5: Bradley Pharmaceuticals Technical Chart

If we had performed a technical analysis on this stock before purchasing it, we would have not purchased it at all. We see a bearing moving average crossover, occurring just one week prior to our purchase date. This crossover generally indicates a fall in prices that occurs a short time after the actual crossover.

This stock has particularly high volatility. We see that on September 21<sup>st</sup> and on October 24<sup>th</sup>, the Bollinger band chart started to increase. This action was caused by the large volume of trading on those two days.

## eBay, Inc. (EBAY)

The technical analysis of this stock began on October 11<sup>th</sup> and ended on November 11<sup>th</sup>. We bought this about half way through the simulation. This was purchased half way through the simulation because we had extra money to spend but we also believed that purchasing shares of eBay would be a wise decision. The stock had little to no volatility at the time of purchase. We can see this by looking at the Bollinger band graph (figure 3.6).

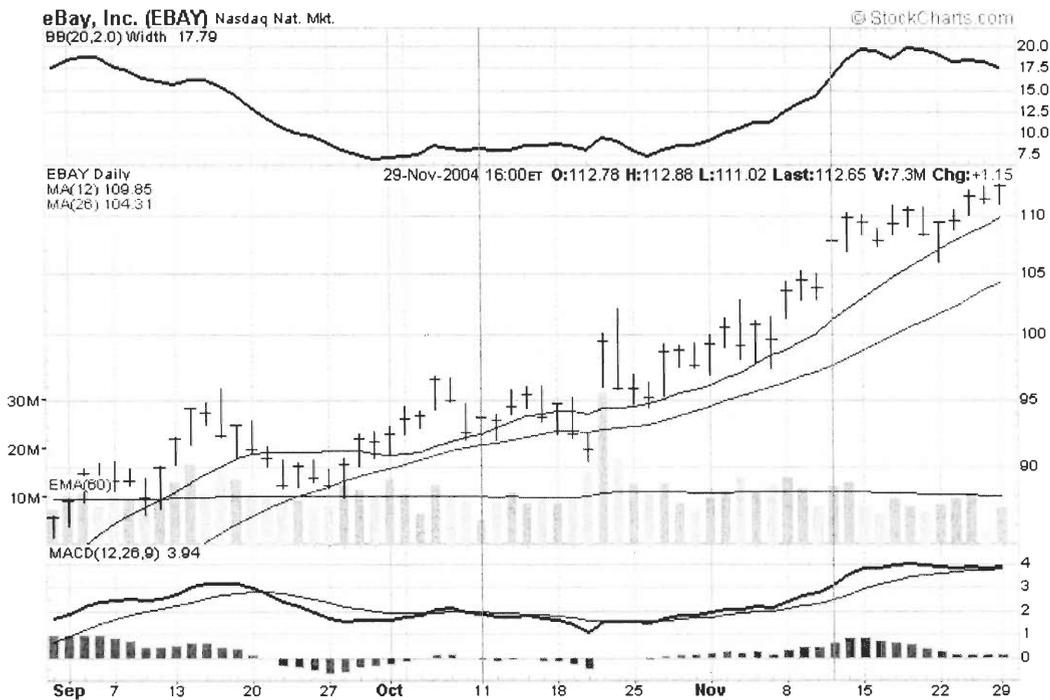


Figure 3.6: Ebay Technical Chart

We bought this stock at the same time that the MACD line and the 9-day moving average line converged. On October 21<sup>st</sup>, eBay's share price had a significant increase due to the constant positive feedback that the company has received. The Motley Fool published an article on October 21<sup>st</sup> that read...

*“Something else worth noting is that while the tally of active users was 51.7 million -- or 38% higher than last year's head count -- the number of listings*

*grew by 48%. While that last number was skewed favorably by a fivefold surge in eBay Stores listings (which have a longer shelf life yet are clearly not as active as the traditional auction items), the company served as the intermediary in deals with a gross merchandise volume of \$8.3 billion. That's a 44% improvement over the past year. So, ultimately, yes, it seems as though eBay continues to blossom even on a per capita basis!"*

The fact that eBay performed so well has been attributed by some analysts to the approaching holiday season. The steady increase in value from September to the end of November supports this speculation. If an investor were to study eBay's past two years (figure 3.7), he would see that there has been a steady increase in value.

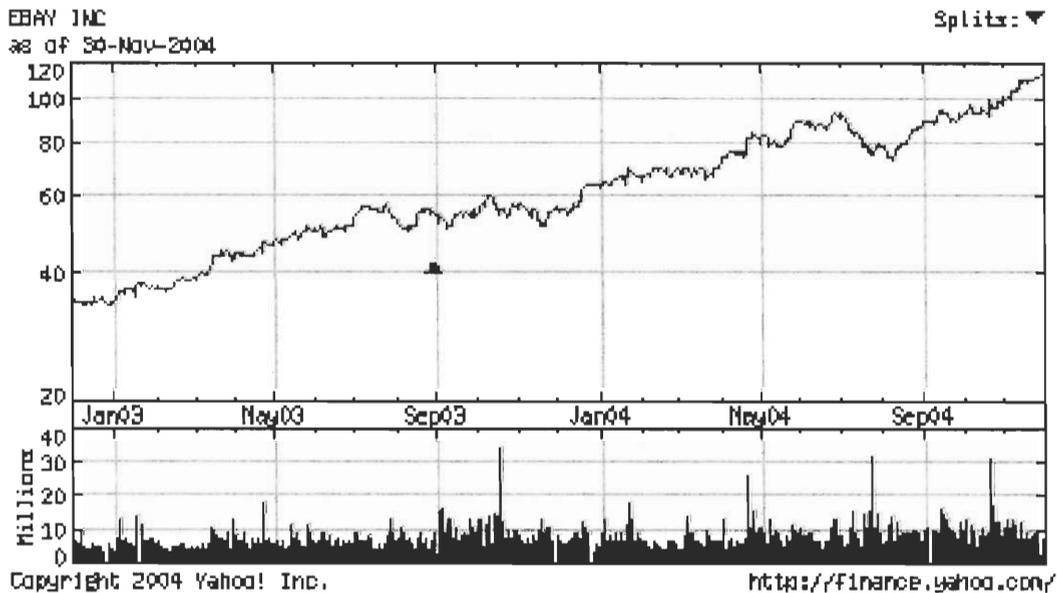


Figure 3.7: Ebay 2004 Value Chart

## Eon Labs, Inc. (ELAB)

The technical analysis of Eon Labs, Inc. begins on September 20<sup>th</sup> and ends on September 28<sup>th</sup>. Similarly to our Bradley Pharmaceutical, Inc. simulation, it will be difficult to give an in depth analysis of Eon Labs, Inc. due the short period we owned it. This stock was fairly volatile for the time we owned it as well as the time around our owning period. This can be seen in the Bollinger band graph in figure 3.8.

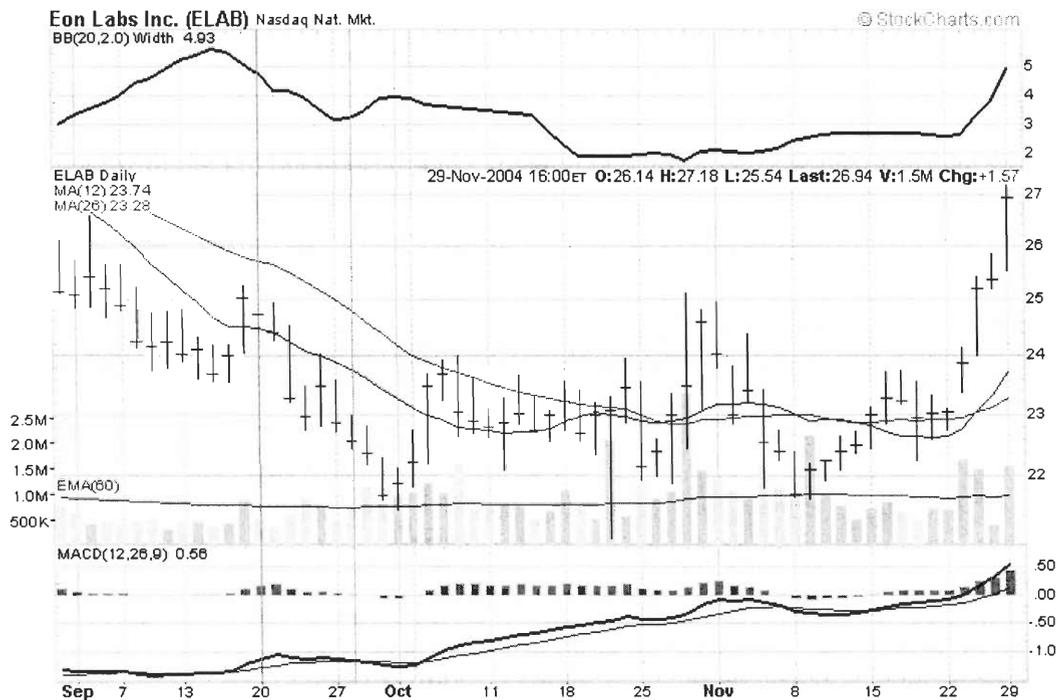


Figure 3.8: Eon Labs Technical Chart

If we had looked at this stock's history before buying it, we would have seen that it was in a downward trend in terms of its value. Unfortunately, the value of the stock continued to decrease through the time period we owned it. The value also kept dropping after we sold the stock. On September 16<sup>th</sup>, CBS MarketWatch released an article suggesting that Eon Labs, Inc. could be a takeover target for a larger pharmaceutical company. The two moving average lines

never once had a positive slope while we owned shares in Eon Labs, Inc. There was only one day in which the closing price was higher than the previous day's closing price. Buying Eon Labs, Inc. on September 20<sup>th</sup> would not a choice that a wise investor would make. However, we chose this stock on its overall criteria, not on its immediate history.

### Fox Entertainment (FOX)

There does not seem to be any strong trend or pattern that is immediately obvious from the past performance for this company. For the time frame surrounding our simulation there seems to be relatively high volatility present and a very active trading value. One feature that might strike the attention of a prospective buyer, as seen in figure 3.9, is the relatively high volume of trading and corresponding raise in value on October 5<sup>th</sup> and 6<sup>th</sup>. It is reported that FOX executive Rupert Murdoch spoke at a conference in downtown Manhattan with high levels of confidence in his company's future as a network leader.



Figure 3.9: Fox Entertainment Technical Chart

Another measure that would indicate a purchase should take place around October 15<sup>th</sup> is the crossing of the MACD with the trigger line. Our purchase date happened to correspond to this date, and the value of the stock continued to grow as expected. The cycling of such a stock, however, cannot be accurately predicted by the graphs alone, as we have seen, because there are many outside factors which tend to affect its volatility. For the three month period shown in figure 3.9 the stock has shown an overall increase in value, while it had performed poorly towards the end of our simulation. There was an indicator on November 5<sup>th</sup> that could have led a cautious investor to sell the FOX stock, but that was overlooked by us. The high volume in trading, most likely due to the anticipated worries of the presidential election held on November 8<sup>th</sup> could have been a sign of the larger investors selling large quantities of stocks. It can be seen in figure 3.9 that the volatility was on the decline following the simulation, and this might warrant a possible buy situation for a potential investor.

### **j2 Global Communications, Inc. (JCOM)**

The technical analysis of j2 Global Communications, Inc. begins on September 20<sup>th</sup> and ends on November 11<sup>th</sup>. On the day we bought the stock, there was a particularly high volume of trading. This can be seen by looking at figure 3.10.



Figure 3.10: j2 Global Communications Technical Chart

Looking at the time period before we bought this stock, we see that both moving average lines have a positive slope. Sure, this is good news for anyone owning the stock at the beginning of September. Since we don't know when the stock is going to fall again (fortunately we only gained from this stock), buying it just because it has been rising is still risky. This stock is also another very volatile stock. The high fluctuation in the Bollinger Band graph confirms this.

There is also another trend we can see from these graphs. When the MACD line and the 9-day moving average line start to decrease at the same rate around October 7<sup>th</sup>, the two moving average lines come close to leveling out. As the MACD line and the 9-day moving average line start to increase again (at a similar rate), the value of the stock also starts to increase. The profit that we made off this stock was small, but it was profit nonetheless.

## Kraft Foods (KFT)

The analysis for KFT runs from October 11<sup>th</sup> until November 11<sup>th</sup> at the end of our simulation. It should be obvious by the end of this analysis that this stock should have been purchased sooner because of its historic end-of-year value growth.

There are certain companies and markets that will exhibit patterns in their values; this appears to be one of them. Near the end of the fiscal year KFT typically experiences a jump in value, and one might easily speculate that this is due to the boost in sales during the holiday season. The 2 year value chart, seen in figure 3.11, is a graphical representation of the value of the stocks from December of 2003 until November of 2004. In each of the two years that are represented in the chart, Kraft's earnings are on the rise from August through December. It is also expected that after December stock prices will start to decline based on the trend of the company's stock.



Figure 3.11: Kraft Foods Weekly Chart

The charts of this company also depict the rise in volatility of KFT as its stock values gain in the 3<sup>rd</sup> and 4<sup>th</sup> quarters. This phenomenon can be clearly seen in figure 3.12. This volatility was on the rise just as we had purchased the stock which happened to be advantageous.



Figure 3.12: Kraft Foods Technical Chart

Our purchasing time could not have been better, and it turns out that in the time frame of our simulation the selling time could not have been better either. The purchase of 440 shares of KFT resulted in a gain of \$1,667 on a \$13700 investment. That means that for this stock we had a 12% gain on our investment. Our analysis and timing for this stock was on target, and because of careful speculation and analysis we yielded a good profit on this stock.

**Louisiana Pacific Corp. (LPX)**

The technical analysis for Louisiana Pacific Corp. will include the dates from September 20<sup>th</sup> to November 11<sup>th</sup>. Looking at the two moving averages lines in figure 3.13, we can see that the stock fluctuates quite a bit during the region of our ownership.

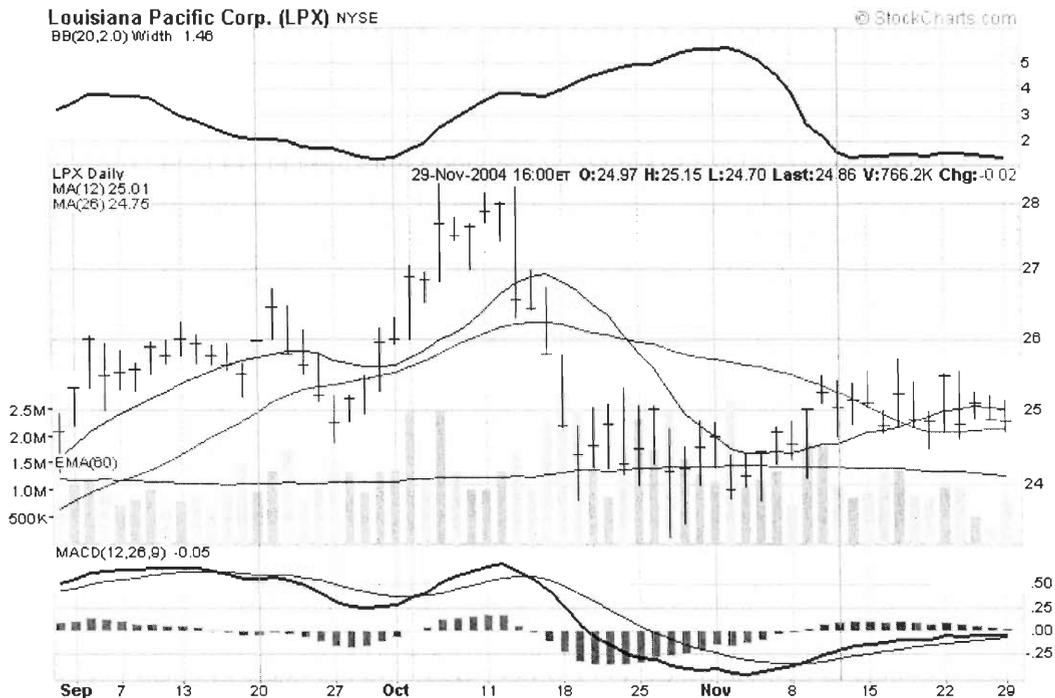


Figure 3.13: Louisiana Pacific Corp. Technical Chart

Unfortunately, we did lose money on this stock. When we look at the Bollinger band graph, we see that at the beginning of October, the value was very low. Within a week after this low period, the value of the stock increased to its highest point in 3 months. Halfway along the stocks' value uptrend, the Bollinger band started to rise, meaning that the volatility of the stock was increasing. This means that the stock is more likely to fluctuate in value, and we can see that happening by looking at the charts.

On October 13<sup>th</sup>, the value of the stock took a dive dropping almost 4 points in that week. On October 14<sup>th</sup>, the day after the stock started falling in value, there was a crossover between the MACD line and the 9-day moving average line. If we had sold the stock at this

crossover, we would have still actually made a profit. At the very last day of our simulation, the Bollinger Band line dropped down to a low again. At this time the value of the stock started leveling out as well, giving it a less volatile characteristic.

### New Frontier Media, Inc. (NOOF)

The time frame for this analysis runs throughout the duration of our simulation. This was a strong stock for us and did not go below the 8% loss threshold. While there were times which we could have sold the stock and made a large gain, we opted to hold onto this stock in hopes that it might have a strong rebound. The performance of this stock for the duration of the simulation is represented in figure 3.14. Note that the stock did, in fact rebound for us and produce a hefty profit margin.

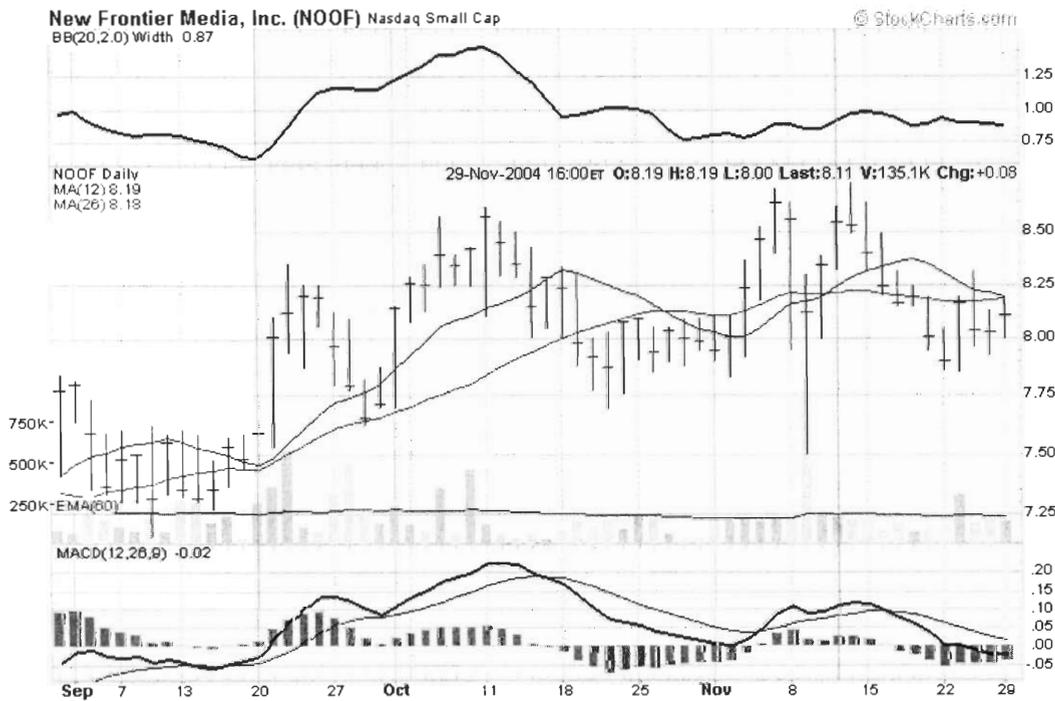


Figure 3.14: New Frontier Media Technical Chart

While many of our stock investments started to decline as the presidential election neared, this is one of the few stocks that retained its value, and actually started to climb. Another time of interest was the 9<sup>th</sup> of November, when NOOF released their earnings report for the year. The stock did dip to a low value but finished strong while in the days following it continued to climb.

This seemed to us to be a risky investment when we looked at the historic performance charts, but it turned out to be a great investment that helped us yield a profit on our initial investment.

### **Silicon Laboratories, Inc. (SLAB)**

The technical analysis of Silicon Laboratories, Inc. starts on September 20<sup>th</sup> and ends on September 29<sup>th</sup>. This simulation was short because we were forced to sell this stock when it dropped below the predetermined 8% mark. During the time period of this simulation, the value of the stock fell, there was one small rise in close-price but that was it. Figure 3.15 shows where this short analysis is coming from.



Figure 3.15: Silicon Laboratories Technical Chart

Previously and during our simulation, the Bollinger band graph remained relatively stable. The fluctuations that existed from the beginning of September until the end of our simulation were not reflected in the Bollinger band graph until after our simulation was over. It is difficult to assess what is really happening in this region of simulation because the time period is so small. Overall, we lost about 4 points through this short simulation.

### Sohu.com, Inc. (SOHU)

This stock was not a safe bet for us, as we had to sell it only a week into the simulation, as seen in figure 3.16. With a bullish moving average crossover occurring on the 8<sup>th</sup> of September and great news coming just a few days later on the 14<sup>th</sup>, we feel that we were justified in our purchase of this stock. The news on September 14<sup>th</sup> that SHU and the National Basketball

Association (NBA) “renewed a two-year deal to produce China.nba.com” [1] (<http://www.marketwatch.com/news/yhoo/story.asp?source=blq/yhoo&siteid=yhoo&dist=yhoo&guid=%7B98F4F0C1%2D07D6%2D497E%2DAA72%2D44B87235220E%7D>) shaped a strong day in the market for SOHU, and we had hopes of a strong market gain.



Figure 3.16: Sohu.com Technical Chart

It is seen that the value of SOHU dropped off very quickly following the good news. The volatility of the stock can be seen to be a great indicator of the pricing of this stock tremendously. It is also clear that this stock, perhaps more than our other nationally-based stocks, are susceptible to large fluctuations in pricing. We can only speculate that this activity is due to the lack of mainstream knowledge about the company. Regardless, because of our 8% selling factor we lost only a small fraction of our investment.

## Verizon (VZ)

Two hundred seventy six shares of Verizon were purchased on September 20. The stock was held through the entire eight week simulation, although it proved to be rather shaky at times. Figure 3.17 shows a bearish crossover only a few days before we initially purchased the security. It was a risky buy, however the company's financial status and quarterly report had fit the bill as far as our screening was concerned. Verizon continued on a negative divergent path for the first couple of weeks that we owned shares. We were wary of the stock performance for these first few weeks but not at all surprised to see the stock hold above the 8% cutoff. Verizon spiked to about 41.5 in early to mid October and we considered possibly selling the stock but decided to hold it. We held it because early October produced a bullish trigger line crossover, which in turn produced a slightly positive divergence in the MACD graph. We figured Verizon was picking up momentum and we decided to let it run through the rest of the month as long as it did not dip below the 8% cutoff.

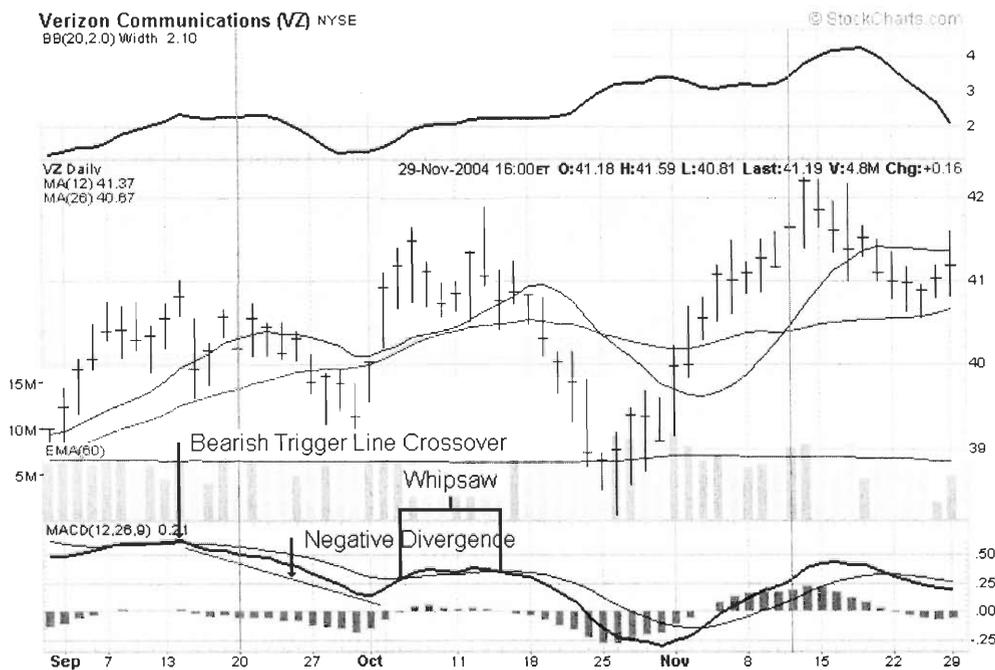


Figure 3.17: Verizon Technical Chart

If you refer back to figure 3.17, you can see a segment labeled “whipsaw”, what this means is there was a rapid change in a buy/sell signal. Within a week or two, there was a bullish crossover as well as a bearish. By the time we had realized this rapid movement we would already have been in the red if we decided to sell; again we decided to wait for the 8% dip to pull out. This time we were surprised to see it not only hold above this point, but jump to a final selling price of \$41.64, which was \$1.45 more than what we originally paid. This large jump was partly due to Verizon’s announced release of the new “Ringback” tones for wireless phones. Released by the Associated Press “‘Ringback’ Tones May Be Next Big Thing in Cellular Industry; Music Plays While Dialing.” Verizon was expecting increased revenues of several million dollars, assuming their sales would rival that of SK Telecom of Korea, whose sales were upwards of \$8 million for the first year.

## **4. Simulations**

### **4.1 Simulation I Value Investment Portfolio**

Our value investment simulation consisted of several stocks that met various criteria for being classified as value securities. Investors should expect to hold the stocks in their value portfolio for a long period, because it generally takes a long time for the market to realize a company's underlying value. Therefore, we do not expect our value portfolio to display any substantial returns on the principally invested \$100,000 over the eight-week simulation. Each security selected in the portfolio had an intrinsic value above the trading price at the time of purchase.

The initial screening of the entire stock market included all securities with a price to book value ratio below one, a trading price above seven dollars per share, an insider holding exceeding 10% of the float, a P/E ratio below twenty, a positive operating cash flow, and a PEG ratio below one. The screen returned about thirty stocks and after thorough analysis of the financial statements, we narrowed the list to thirteen.

#### **4.1.1 Selection of Stocks**

The initial stock market screening returned a list of thirty-three stocks that met the rough criteria for value investments. We then needed to perform an analysis of the stocks based on the principles discussed in the value analysis section. After the screening and a thorough analysis of financial statements we finally settled on a list of thirteen stocks: Bon-Ton Stores, Culp Inc., EZ-Corp, General Motors, Haggar Corporation, M&F Worldwide Corporation, Northwest Pipe Corporation, Octel Corporation, P&F Industries Inc., Pomeroy IT Solutions, Tandy Brands Accessories, Tescos Technologies Inc., and Village Supermarket Inc. To maintain a proper value

portfolio, we decided that we would not trade any of these stocks based on behavior of the quoted trading price. With thorough initial research, frequent trading is unnecessary. One of the only reasons for selling a value stock is if the underlying intrinsic value drops significantly below the purchase price. Other reasons are related to poor management, such as if fraud is discovered on financial statements or if the management makes promises it does not keep.

### **Bon-Ton Stores Inc. (BONT)**

Bon-Ton Stores Incorporated is a department store retailer that recently acquired Elder-Beerman Stores Incorporated. We chose it for our value investment portfolio because it displayed characteristics of the market undervaluing it. The market capitalization of the corporation is \$232.50M, which places it into the small capitalization stock category. The industry average market capitalization is \$2.24B for department and discount retail. Small market cap stocks have much greater opportunity for growth as mentioned previously in our report. This company displays a lot of potential in terms of growth and good fundamentals.

Insiders hold 54% of the total shares outstanding, which is a good indication that the management stands by their company and they believe there will be much growth in the future. A value stock should have at least 10% of its shares held by insiders. Another strong management indicator is conservative payments for the top management positions. The Chairman of Bon-Ton pays himself only \$1.45M per annum. This is only 0.1% of the company's yearly \$1.3B revenue. A very modest amount indeed when compared to many of the stocks of the Internet boom. Further management indicators are the return on equity and return on assets indicators. The return on equity for Bon-Ton is 7.62%, which is very impressive for the industry. The return on assets is 2.59%, which is a little over half of the industry leaders ROA.

The Price/Book value ratio is 0.98, which means the corporation's assets cause its value to be greater than the current quoted trading price. The operating cash flow over the trailing twelve months is \$151.75M. The current ratio is 2.21, which is an excellent indication that the company can meet their short-term debt obligations. A current ratio greater than two is a good sign. The average three-month trading volume is a low 67,457 shares, which means the company is rather thinly traded. The daily-dollar volume typically should not be below \$1M for growth stocks. However, exceptions are made for value stocks because the investment strategy is so focused on the long term. This is not a good sign if an investor needs to quickly sell off their shares. However, we feel that the positive factors outweigh the negatives. The dividend yield is 0.70%, and the company has a consistent past record of paying dividends.

At the simulation end on November 11<sup>th</sup>, Bon-Ton was at a loss of 6.6% on our initial investment. However, our intention with the value stock portfolio is to hold the stocks for long periods of time. Soon after the simulation end, Bon-Ton stores showed a return of over 10% on our initial investment.

### **Culp Inc. (CFI)**

Culp Incorporated manufactures and markets mattress and upholstery fabrics. The Company's fabrics are used in the production of residential and commercial furniture and bedding products, including sofas, recliners, chairs, loveseats, sectionals, sofa-beds, office seating, panel systems and mattress sets (Yahoo Finance Profile). We chose Culp Corporation because it displayed some traits of being a value stock. The corporation has a \$62.25M market capitalization, which places it in the micro-cap category. The current Price/Book ratio is 0.68, so the company's current stock price is very much below the company's asset value. The cash flow from operations is \$19.58M. Insiders hold 25.53% of the shares outstanding; a good indicator

that they believe the company has a lot of room to grow. The average three month trading volume is 26,090. This indicates that the stock is very thinly traded, typical of small capitalization stocks. Culp, being a micro-cap stock, is only in the youth of the room it has to grow. It has a current ratio of 3.44, which means the company is very liquid in its ability to cover short-term debts. At the simulation end on November 11<sup>th</sup>, Culp Incorporated was at a loss of 15.69% on our initial investment.

### **Ezcorp Inc. (EZPW)**

EZCorp is a pawnshop and payday loan store. EZCORP meets the short-term cash needs of the cash and credit constrained consumer by offering non-recourse loans collateralized by tangible personal property, commonly known as pawn loans; by offering short-term non-collateralized loans, often referred to as payday loans, and by purchasing customers' merchandise at its pawnshop locations (Yahoo Finance Profile: EZPW). The PEG ratio is 0.40. Any PEG value below 1.0 is a good indicator that the analysts predict future growth. PEG's are usually calculated with 5 year expected growth in mind. The cash flow from operations is \$15M. The current ratio is an exceptional 5.914. The percentage of floating shares shorted is 5.14%. This can be seen as a bullish sign as it means the stock price is below what it will be when the shorting investors have to cover their positions. Insiders hold 24.77% of the corporation's shares outstanding. When insider holdings are greater than 10%, it is an indicator of insiders who are holding for the long term. When we invested in EZCorp, it had a Price/Book value below one. Since that time, it has returned about 55% on that initial investment. The return on assets indicator is 5.66%, and the return on equity is 7.96%. At the simulation end on November 11<sup>th</sup>, EZ-Corp was at a gain of 26% on our initial investment.

## **General Motors Corp (GM)**

General Motors Corporation is involved in the automotive industry through General Motors Automotive, and it is involved in financing and insurance through General Motors Acceptance Corporation. We chose GM because we believe the market has undervalued it for its asset holdings. The market capitalization is \$22.3B. The return on assets is 0.50%. The return on equity is 12.97%. The PEG ratio is 1.22. The price/book ratio is 0.79. Insiders hold 18.08% of the shares outstanding. The percentage of floating shares that are shorted is 9.15%. The cash flow from operations is \$2.40B. Total cash per share is \$66.55. The Debt/Equity ratio is 10.472 because GM has \$290.92B in debt. The revenue is \$190.78B. The average volume over a three-month period is 4,948,500 shares, which means the stock is heavily traded and very liquid. 9.15% of the floating shares are sold short, which is a good sign that the stock has significantly dropped below its value. Selling shares causes the share price to drop, and 9% of the float will have to be purchased again before the days to cover ends.

At the simulation end on November 11<sup>th</sup>, General Motors was at a loss of 4.6% on our initial investment. However, our intention with the value stock portfolio is to hold the stocks for long periods of time.

## **Haggar Corp (HGGR)**

Haggar Corporation designs, manufactures, imports and markets casual and dress clothing for men and women. We chose Haggar Corporation because it displayed several characteristics that would qualify it as a value investment. The market capitalization is \$146.15M. The Price/Book ratio of the stock was 0.83. The return on assets is 3.81%. The return on equity is 5.81%. Insiders hold 48.5% of the outstanding shares. The trailing twelve-month revenue is \$487.9M. The debt/equity ratio is an impressive 0.012. The current ratio is 2.627. The

company has \$5.46M in cash flow from operations. The Price/Sales ratio is 0.29. The total cash per share is \$4.26. Haggar has a consistent dividend payment program. The previous year paid \$0.20 per share or 0.99%.

At the simulation end on November 11<sup>th</sup>, Haggar was at a loss of 1% on our initial investment. However, our intention with the value stock portfolio is to hold the stocks for long periods of time.

### **M&F Worldwide Corp (MFW)**

M&F Worldwide is a holding corporation that holds Pneumo Abex Corporation. Pneumo Abex produces licorice flavors and distributes them to confectioners and tobacco companies. Over 70% of M&F's sales are to tobacco companies. It has a market capitalization of \$245.82M. The enterprise value is \$151.22M. The price/book value ratio is 0.76. Return on assets is 5.82%, and return on equity is 6.98%. The debt/equity ratio is zero. The cash flow from operations is \$23.6M. The current ratio is a very impressive 12.071. Insiders hold 74.2% of the corporation's outstanding shares. The average volume over a three-month period is only 38,136. The EBITA is \$39.5M. At the simulation end on November 11<sup>th</sup>, M&F Worldwide Corporation was at a gain of 1.3% on our initial investment.

### **Northwest Pipe Corp (NWPX)**

Northwest Pipe Corporation is a manufacturer of welded steel in two business segments. The water transmission business supplies US and Canada with large diameter, high-pressure steel pipe for water transmission. The tubular products business manufactures smaller diameter, electric resistance welded steel pipe for a wide range of applications (Yahoo Finance Profile: NWPX). The market capitalization is \$126.57M. The PEG ratio is 2.16. The average daily

trading volume over a three-month period is 10,590. This is \$190,020 worth of shares at \$18.51 per share. Daily dollar volumes that are less than \$1M represent illiquid trading. It can be difficult to sell or buy shares if the volume is very low. The Price/Book value ratio is 0.90. The return on assets and return on equity is 3.28% and 7.08% respectively. Insiders hold 12.7% of the outstanding shares. Institutions hold 85.16% of the outstanding shares. The cash flow from operations is \$11.50M. The current ratio is 2.172. The Debt/equity ratio is 0.63.

At the simulation end on November 11<sup>th</sup>, Northwest Pipeline Corporation was at a gain of 3.35% on our initial investment. Soon after the simulation ended, it was at a gain of 16%.

### **Octel Corp (OTL)**

Octel Corporation is an international chemical company that specializes in manufacturing, distributing, and marketing fuel additives and specialty chemicals. The market capitalization is \$263.00M. The Price/Book value ratio is 0.57. The Price/Sales ratio is 0.53. The Return on Assets is 4.40%. The Return on Equity is 7.56%. The Debt/Equity ratio is 0.33. The current ratio is 1.286. The cash flow from operations is \$66.10M. Insiders hold 19.36% of the shares outstanding. The average of the daily volume over a three-month period is 52,954 shares. This places the daily-dollar volume at \$1,121,154.34 at \$21.21 per share. The revenue per share is \$37.722. The profit margin is 6.84% and the operating margin is 14.72%. The dividend yield is 0.58%.

At the simulation end on November 11<sup>th</sup>, Octel Corporation was at a loss of 9.7% on our initial investment. However, our intention with the value stock portfolio is to hold the stocks for long periods of time.

## **P&F Industries Inc. (PFIN)**

P & F Industries is a holding company of: Florida Pneumatic Manufacturing Corporation, Countrywide Hardware Incorporated, Green Manufacturing Incorporated, and Embassy Industries Incorporated. Florida Pneumatic is engaged in the importation, manufacture and sale of pneumatic hand tools, primarily for the industrial and retail markets, and the importation and sale of compressor air filters. Countrywide conducts its business operations through Nationwide Industries, Inc., a wholly owned subsidiary, and through its Franklin Manufacturing division. Nationwide is an importer and manufacturer of door, window and fencing hardware. Franklin imports a line of door and window hardware. Green is engaged primarily in the manufacture, development and sale of heavy-duty welded custom designed hydraulic cylinders. Embassy is engaged in the manufacture and sale of baseboard heating products and the importation and sale of radiant heating systems (Yahoo Finance Profile: PFIN).

The market capitalization of this corporation is \$51.10M. The Price/Book value of the company is now 1.38. When we purchased shares of the corporation for our value portfolio, it was below 1. The Return on Equity is 4.23%. The current ratio is 3.098. The cash flow from operations is 5.30M. The total debt/equity ratio is 1.245. Insiders hold 54.51% of the shares outstanding. The average daily trading volume over a three-month period is 5,454. This is a daily-dollar volume of \$79,246. This is a very low daily dollar volume, which makes the stock very illiquid.

At the simulation end on November 11<sup>th</sup>, P&F Industries incorporated was at a gain of 30.8% on our initial investment. Soon after the simulation ended, it was at a gain of 46%.

### **Pomeroy IT Solutions Inc. (PMRY)**

Pomeroy IT Solutions, Inc., together with its subsidiaries, provides enterprise-wide information technology solutions (IT) that leverage its portfolio of professional services. The Company operates in three industry segments: products, services and leasing. Its product business is composed of the sale of a broad range of desktop computer equipment, including servers, infrastructure and peripherals. Its services business entails providing IT services that support such computer products. The services segment can be classified into three components: enterprise consulting, infrastructure solutions and lifecycle services (Yahoo Finance Profile: PMRY).

The market capitalization is \$161.66M. The Price/Book value ratio is 0.80. The return on assets ratio is 3.66%. The return on equity ratio is 5.06%. The total debt/equity ratio is 0.019. The current ratio is 1.698. The cash flow from operations is \$3.38M. Insiders hold 15.08% of the outstanding shares. The average daily-volume is 22,722 over a three-month period.

At the simulation end on November 11<sup>th</sup>, Pomeroy IT Solutions was at a gain of 9.54% on our initial investment. Soon after the simulation ended, Pomeroy was up 14.5% on the initial.

### **Tandy Brands Accessories (TBAC)**

Tandy Brand Accessories is a designer, manufacturer, and marketer of branded men, women and children clothing. The market capitalization is \$91.35M. The PEG ratio is an impressive 0.63. The Price/Book Value ratio is 0.87. The return on assets is 4.66%. The return on equity is 7.05%. Insiders hold 26.53% of the outstanding shares. The average daily volume is 4,545 over a three-month period. The current ratio is 5.383. The dividend yield is 0.78%. The

return on assets is 4.66%. The return on equity is 7.05%. The total debt/equity ratio is 0.332. The cash flow from operations is \$14.00M.

At the simulation end on November 11<sup>th</sup>, Tandy Brands Accessories was at a gain of 3.3% on our initial investment.

### **Tessco Technologies Inc. (TESS)**

TESSCO Technologies Incorporated provides integrated products to professionals that design, build, run, maintain and use wireless voice, data, messaging, location tracking, and Internet systems (Yahoo Finance Profile: TESS). The market capitalization is \$55.47M. The PEG ratio is 1.24. The Price/Book value ratio is 0.98. Insiders hold 26.23% of the outstanding shares. The total debt is \$5.54M, which makes the total debt to equity ratio 0.096. The cash flow from operations is \$10.6M. The daily trading volume average is 31,065 over a three-month period. The return on assets is 3.22%, and the return on equity is 7.01%. The Price/Sales ratio is 0.13.

At the simulation end on November 11<sup>th</sup>, Tessco Technologies Incorporated was at a gain of 10.17% on our initial investment. Soon after the simulation ended, it was up to 11.7% gain.

### **Village Supermarket Inc. (VLGEA)**

Village Supermarkets Incorporated operates a chain of 23 ShopRite supermarkets. Village Super Market is a member of Wakefern Food Corporation, retailer-owned food cooperative and owner of the ShopRite name. This relationship provides the Company many of the economies of scale in purchasing, distribution, advanced retail technology and advertising associated with chains of greater size and geographic coverage.

The market capitalization is \$119.85M. The Price/Book value is 1.00. When we purchased the stock, it was much more below 1.00. The stock made a 22.4% gain throughout our simulation. Insiders hold 42.91% of the shares outstanding. The cash flow from operations \$30.9M. The current ratio is 1.97. The total debt/equity is 0.308. The return on equity is 11.73%. The return on assets is 5.99%. Low volume and small quantity of shares outstanding causes drastic price changes on small trade lots. If 200 shares are traded, it can cause a \$2 decrease in the stock. This seems like a disadvantage. However, it keeps day traders away and allows investors in the stock to remain focused on the long term.

At the simulation end on November 11<sup>th</sup>, Village Supermarket was at a gain of 27.4% on our initial investment. Soon after the simulation ended, Village had reached a gain of 30%.

#### **4.1.2 Analysis of Value Portfolio Trading**

Because of the nature of value investment portfolios, trading is very infrequent. There were no trades during our simulation for our value investment portfolio. However, the data we collected for tracking our value portfolio is below.

Date	Symbol	Order	Shares	Price	Proceed
20-Sep	BONT	BUY	575	\$13.29	\$7,652.75
20-Sep	CFI	BUY	1068	\$7.20	\$7,700.60
20-Sep	EZPW	BUY	883	\$8.72	\$7,710.76
20-Sep	GM	BUY	183	\$41.84	\$7,667.72
20-Sep	HGGR	BUY	409	\$18.80	\$7,700.20
20-Sep	MFW	BUY	591	\$13.00	\$7,694.00
20-Sep	NWPX	BUY	452	\$17.00	\$7,695.00
20-Sep	OTL	BUY	344	\$22.31	\$7,685.64
20-Sep	PFIN	BUY	800	\$9.61	\$7,699.00
21-Sep	PMRY	BUY	622	\$12.37	\$7,705.14
22-Sep	TBAC	BUY	563	\$13.65	\$7,695.95
23-Sep	TESS	BUY	646	\$11.89	\$7,691.94
24-Sep	VLGEA	BUY	248	\$31.00	\$7,699.00
				<b>Total Investment</b>	<b>\$99,997.70</b>
				<b>Tangible Money</b>	<b>\$2.30</b>

Figure 4.1: Value Portfolio Investments

Our initial account contains \$100,000 for investment in value securities. The standard commission is \$11.00 for buying and selling any amount of shares during normal market hours. In each table the **Total Investment** title represents the cost of the securities with commissions included. Tangible money is the cash that is available that we did not invest because it was too small to purchase a whole share. The purpose of our value portfolio was to perform an extensive analysis on stocks to find “values”, stocks that are selling for much below their intrinsic per-share value. With this extensive analysis backing our investment, no trades will be needed unless detrimental problems are found within the company.

Date	Symbol	Order	Shares	Price	Proceed	Monetary Gain/Loss
11-Nov	BONT	SELL	575	\$12.46	\$7,153.50	
11-Nov	CFI	SELL	1,068	\$6.07	\$6,471.76	
11-Nov	EZPW	SELL	883	\$11.02	\$9,719.66	\$2,008.90
11-Nov	GM	SELL	183	\$39.90	\$7,290.70	
11-Nov	HGGR	SELL	409	\$18.54	\$7,571.86	
11-Nov	MFW	SELL	591	\$13.05	\$7,701.55	\$7.55
11-Nov	NWPX	SELL	452	\$17.57	\$7,930.19	\$235.19
11-Nov	OTL	SELL	344	\$20.15	\$6,920.60	
11-Nov	PFIN	SELL	800	\$12.57	\$10,045.00	\$2,346.00
11-Nov	PMRY	SELL	622	\$13.55	\$8,417.10	\$711.96
11-Nov	TBAC	SELL	563	\$14.10	\$7,927.30	\$231.35
11-Nov	TESS	SELL	646	\$13.10	\$8,451.60	\$759.66
11-Nov	VLGEA	SELL	248	\$39.50	\$9,785.00	\$2,086.00
				<b>Total Assets</b>	\$105,388.12	\$5,388.12
				<b>Profits</b>	\$5,388.12	
				<b>% Gain/Loss</b>	5.39%	

Figure 4.2: Value Portfolio Sells

Figure 4.2 is representative of the liquidation of our value portfolio at the end of the simulation. The data illustrates that we made a gain of 5.39% on our initial investment. The total assets at the end of the simulation are \$105,388.12, which indicates a profit of \$5,388.12. The greatest gains were made on Village Supermarket Incorporated with a gain of \$2,086 or 27.09%.

### 4.1.3 Value Portfolio Total Assets

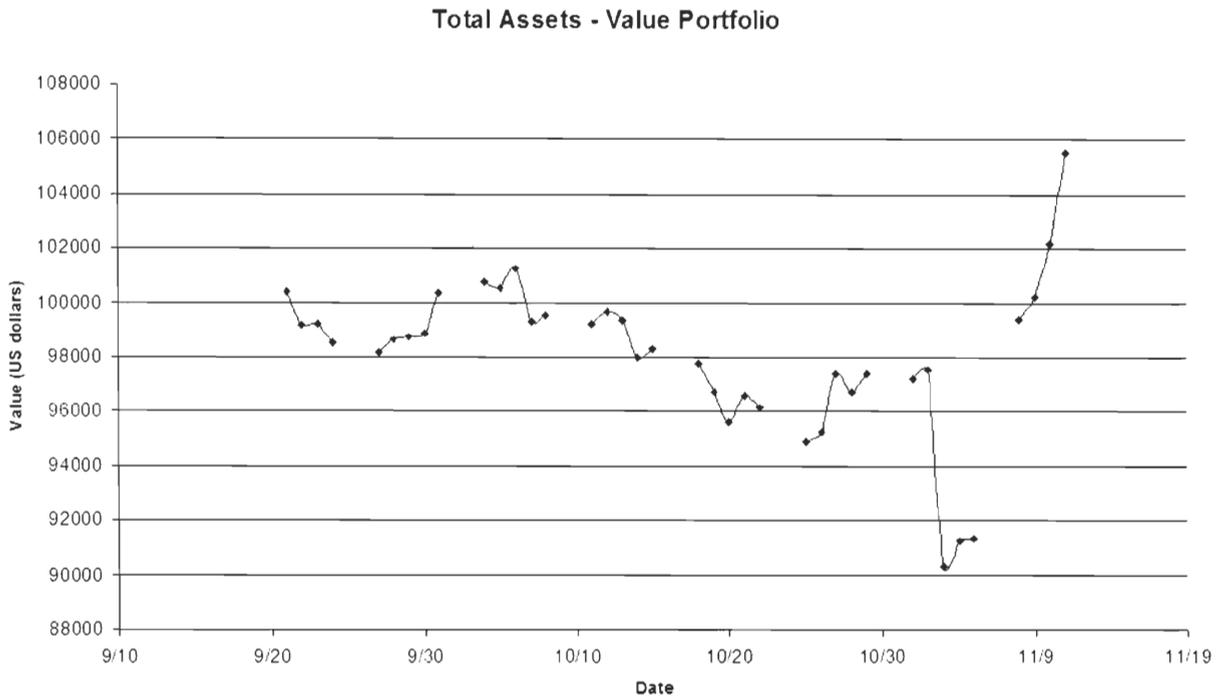


Figure 4.3: Value Portfolio Total Assets

Figure 4.3, above, is representative of the total assets for the value portfolio; which consisted of large capital stocks. When compared to the high growth asset chart, you can see that there are far fewer fluctuations in the total assets. This is because value stocks do not react as quickly to the changing market; they are less volatile. The daily value of our portfolio as well as any trading can be seen in Appendix A-1. This is the finalized record of all trades and assets during the eight week simulation.

It is important to note that the breaks in the data are not due to careless handling and misplacement of numbers, but appear because changes in a securities price does not change over the weekend. The beginning of November put a large dent in the value portfolio. With occasional an intraday loss of over \$10,000.00, our group was convinced that the market would

not recover fast enough to land is in the “green” by the end of the simulation. This particular portfolio had much larger gains than that of the high growth portfolio. Our total profits were 5.39%, or just about \$5,390.00.

#### 4.1.4 Value Portfolio Market Comparison

It can be insightful to compare the performance of our simulation value portfolio against the performance of well established index such as the S&P 500. A visual representation of this comparison can be seen below in figure 4.4. The S&P 500 is a good stock market indicator and has been used by many analysts as well as brokers to track the performance of the stock market. To ensure an impartial assessment we compared the purchase of 89 shares of the S&P 500 at \$1,122.20, which was its selling price on the first day of our simulation. The total sale was then the total cost of the shares plus an \$11 trade commission, or \$99886.80.

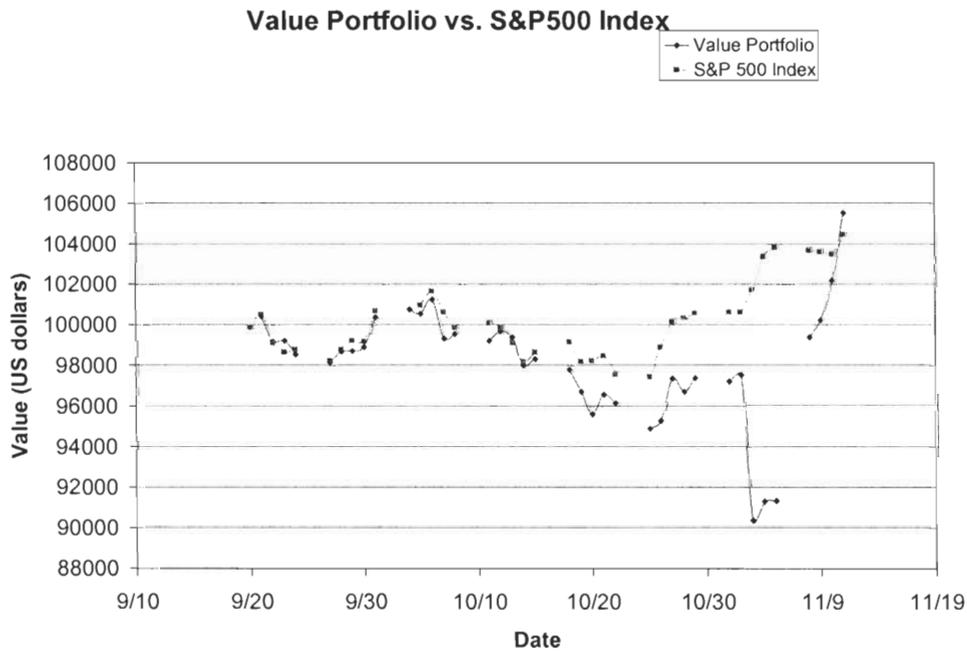


Figure 4.4: Value Portfilo vs. S&P 500 from September 20th to November 11th

It is seen that our value portfolio and the S&P 500 index were producing similar yields for the first four weeks of our simulation, but for the last few weeks our assets dipped low as the S&P 500 equivalent portfolio would have held strong. The end of our simulation was a strong growth period for our portfolio and as a result we finished with a simulated return on investment that would have outperformed the S&P 500. But this is just a mere indication that our portfolio was a suitable investment for the selected timeframe of September 20<sup>th</sup> through November 11<sup>th</sup>.

## **4.2 Simulation II Growth Stock Simulation**

Our growth stock simulation portfolio consisted of stocks that met strict criteria for having a history of increasing growth. Typically, growth stocks have higher P/E ratios because the market has realized that a history of growth is worth something, and more investors buy into these stocks in speculation that the growth will continue at its past rate. We avoided outrageously high P/E ratios if the PEG ratio ((P/E) / Growth) was not below one (a trait that indicates analyst expected growth in the future). PEG ratios will be discussed in more detail later.

The initial screening included the following criteria: an insider holding exceeding 10%, average daily trading volume greater than \$1 million (for liquidity), sales under \$500 million (companies most likely to double and triple in next few years), current trading price above seven dollars per share, a positive operating cash flow, greater than 25% earnings growth in past five years, and a profit margin above seven percent. In addition to this list, our group decided to add two corporations that we expected to rebound in price, San Disk and Verizon.

### **4.2.1 Analysis of High Growth Portfolio Trading**

Our investment transactions are tracked through the use of excel formatted tables. Our initial account contains exactly \$100,000.00 for “high growth” investing. The standard

commission is \$11.00 for buying and selling; and is accounted for in the tables. In each table, the **Total Investment** title represents the cost of the securities including the \$11.00 commission. The total investment for each table represents *only* the investment total for that particular group of trades. In every chart, however, you will see a cell labeled **Tangible Money**. This represents the money we have readily available to make more investments. You can see that at times we have substantial amounts in the tangible money account, but it is quickly used in other investments after we have accumulated enough to make a considerable investment. We track everything in chronological order in an attempt to clarify our trading process throughout the simulation.

Date	Symbol	Order	Shares	Price	Proceed
20-Sep	BDY	BUY	497	\$22.33	\$11,109.01
20-Sep	LPX	BUY	427	\$25.98	\$11,104.46
20-Sep	ELAB	BUY	449	\$24.74	\$11,119.26
20-Sep	SLAB	BUY	298	\$37.21	\$11,099.58
20-Sep	JCOM	BUY	355	\$31.26	\$11,108.30
20-Sep	SOHU	BUY	645	\$17.20	\$11,105.00
20-Sep	NOOF	BUY	1,436	\$7.59	\$10,910.24
20-Sep	VZ	BUY	276	\$40.19	\$11,103.44
20-Sep	SNDK	BUY	408	\$27.22	\$11,116.76
				<b>Total Investment</b>	<b>\$99,776.05</b>
				<b>Tangible Money</b>	<b>\$223.95</b>

Figure 4.5: Initial Portfolio Record

Figure 4.5 is representative of our initial investments. We selected a total of nine stocks through a series of screeners and invested nearly equal amounts of money into each. Our total investment including commissions, cost us a total of \$99,776.05, and we were left with \$223.95 “tangible money” for future investing. Our initial purchases took place on September 20<sup>th</sup>.

Date	Symbol	Order	Shares	Price	Proceed	Monetary Gain/Loss
21-Sep	BDY	SELL	497	\$20.53	\$10,192.41	-\$916.60
27-Sep	SOHU	SELL	645	\$15.72	\$10,128.40	-\$976.60
28-Sep	ELAB	SELL	449	\$22.57	\$10,122.93	-\$996.33
29-Sep	SLAB	SELL	298	\$33.31	\$9,915.38	-\$1,184.20
				<b>Tangible Money</b>	\$40,583.07	

Figure 4.6: Selling Record

Figure 4.6 is representative of our first four sells. We sold Bradley Pharmaceuticals (BDY), Silicon Labs (SLAB), SOHU.Com Inc (SOHU), and Eon Labs Inc. (ELAB). All the stocks were sold because they passed below the 8% selling threshold that we set at the beginning of the simulation. The technical reasons for the sale of each of these stocks can be viewed in the technical analysis section of the report. The trades happened in the chronological order shown and no purchases were made until October 11<sup>th</sup>. We lost \$4,073.73 from the total investment of these stocks, which is inclusive of both the buying and selling commissions. We added over \$40,000.00 to the tangible money account and were now in a condition to invest into other securities.

Date	Symbol	Order	Shares	Price	Proceed
11-Oct	EBAY	BUY	264	\$93.73	\$24,755.72
11-Oct	KFT	BUY	440	\$31.21	\$13,743.40
				<b>Investment</b>	\$38,499.12
				<b>Tangible Money</b>	\$2,083.95

Figure 4.7: Kraft Foods and E-bay Buy Record

Figure 4.7 is representative of our second round of buying. We were hopeful that October 11<sup>th</sup> would bring about some promising investments. Both E-bay (EBAY), and Kraft Foods Inc (KFT), had previously released some strong quarterly earnings reports, and both have excellent financial outlooks. \$38,499.12 is used to invest into the companies, which leaves us with \$2,083.95 in our tangible money account.

Date	Symbol	Order	Shares	Price	Proceed	Monetary Gain/Loss
14-Oct	SNDK	SELL	408	\$20.52	\$8,361.16	
				<b>Tangible Money</b>	\$10,445.11	Total losses = -2,743.84

Figure 4.8: SanDisk Sell Record

Figure 4.8 is representative of our second to last sale in the simulation for the high growth portfolio. The SanDisk Corporation reported third-quarter earnings that came up short of financial analysts' estimates. The bad report caused SanDisk's stock value to fall over 20%, which was well below our 8% selling mark. Our losses from this one stock totaled \$2,743.84 and added \$8,361.16 to the tangible money account.

Date	Symbol	Order	Shares	Price	Proceed
15-Oct	FOX	BUY	357	\$29.20	\$10,435.40
				<b>Investment</b>	\$10,435.40
				<b>Tangible Money</b>	\$9.71

Figure 4.9: Fox Entertainment Buy Record

Figure 4.9 represents our last purchase before the end of the simulation. Fox Entertainment Group Inc (FOX) was purchased primarily for its promising financial outlook. It also passed through the screener criteria and was in bullish technical trend while we purchased it. The investment into Fox Entertainment Group totaled \$10,435.40 and left us with a tangible account of \$9.71.

Date	Symbol	Order	Shares	Price	Proceed	Monetary Gain/Loss
11-Nov	VZ	SELL	276	\$41.64	\$11,481.64	\$378.20
11-Nov	NOOF	SELL	1,436	\$8.54	\$12,252.44	\$1,342.20
11-Nov	EBAY	SELL	264	\$107.84	\$28,458.76	\$3,703.04
11-Nov	KFT	SELL	440	\$35.00	\$15,389.00	\$1,645.60
11-Nov	FOX	SELL	363	\$29.40	\$10,661.20	\$225.80
11-Nov	JCOM	SELL	355	\$32.46	\$11,512.30	\$404.00
11-Nov	LPX	SELL	427	\$25.03	\$10,676.81	
				<b>Total Assets</b>	\$100,432.15	
				<b>Profits</b>	\$432.15	
				<b>% Gain/Loss</b>	0.43%	

Figure 4.10: Final High Growth Portfolio Assets

Figure 4.10 is representative of the stocks we held as the simulation drew to a close. Our gains for each stock are highlighted in green and our losses are highlighted in red. Our profits totaled only \$432.15, which was a gain of +0.43% of our initial capital.

Overall we were successful in the simulation, in the sense that we did not lose any money. Although the gain was small, a mere \$432.15, the group collectively decided that this portfolio was a success...by a small margin. Many of the large losses are attributed to the lack of experience in deciphering trends in the market. Investment in small capital stocks takes much more time and focus than investing in blue-chip companies. It's much more of a risk to invest in the small capital stocks but they payoff can come much quicker, and vice versa for losses. Small capital stock investing is a tricky art, and as we have learned, probably not something for the average investor. Unless you have a lot of time available for investing, our groups' consensus was to stick with value or long term investments.

#### **4.2.2 High Growth Portfolio Total Assets**

Our financial records were tracked on a day to day basis and logged in an excel spreadsheet. The spreadsheet is used to store data and aid in the presentation of the high growth portfolio assets. Our financial status is inclusive of summed monetary figures in both the tangible money account as well as the "current" investment portfolio. The daily value of our portfolio as well as any trading can be seen in Appendix A-2. This is the finalized record of all trades and assets during the eight week simulation. Figure 4.11 is a representation of our total assets for the high growth portfolio. Again, it is important to note that the breaks in the data are not due to careless handling and misplacement of numbers, but appear because changes in a securities price does not change over the weekend. Theoretically you should be able to connect

each broken segment together with a horizontal line. However, since stock prices can open at lower values than which they close, and vice versa, we see inconsistencies in the “horizontal” line theory.

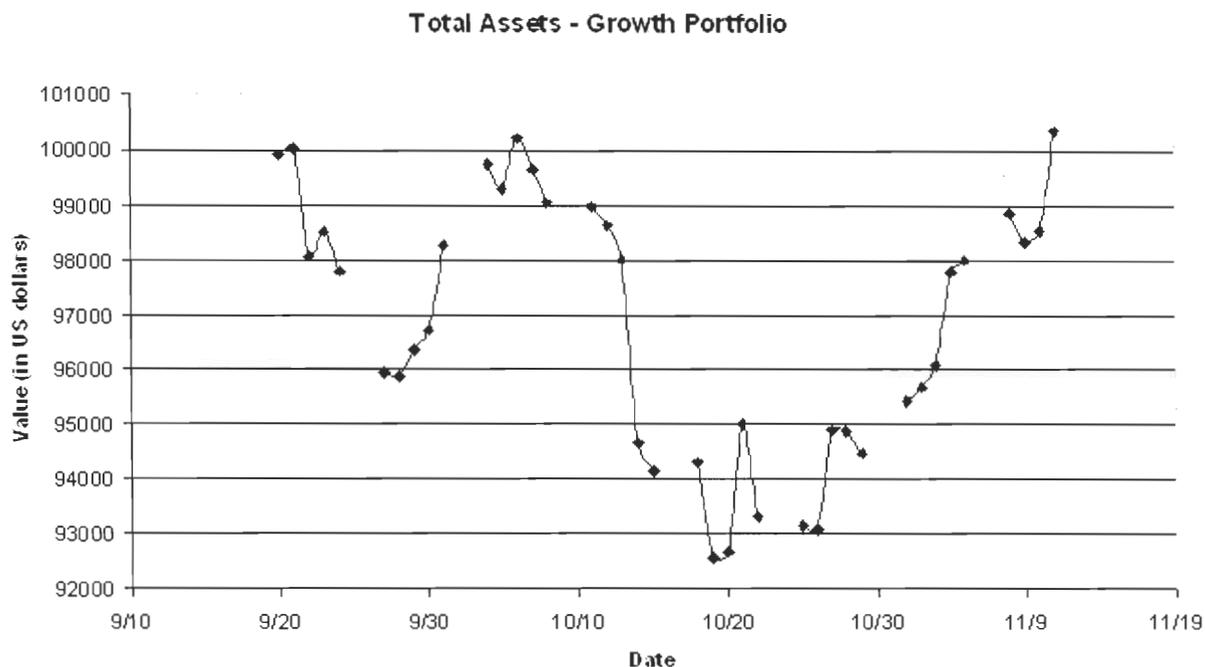


Figure 4.11: High Growth Portfolio Total Asset Plot

The chart below shows the erratic behavior of our portfolio assets. The large “dip” or “cup” that took place between early October and early November was largely due to rapidly rising crude oil prices and the presidential election. This portfolio demonstrates how much small capital stocks can be affected by a sensitive market. Generally you will not see such rapid and extravagant fluctuations in blue-chip investment portfolios.

Our ending portfolio value was only +0.43% of the initial \$100,000 that we started with; which is around \$430.00. Not a significant amount if you compare it to the value portfolio, but nonetheless it was a gain, and even more importantly, a rewarding investment experience.

### 4.2.3 High Growth Market Comparison

The following graph shows an overlay of the S&P 500 index with our high-growth portfolio. The values shown in figure 4.12 are the closing prices for each day. The time we used to plot with is from September 20<sup>th</sup> to November 11<sup>th</sup>. One of the first things that is noticeable about this overlay is that the S&P 500 outperformed our high-growth portfolio on every single day during this simulation period. Both of these lines go through a “dip” from the beginning of October to the beginning of November. The reason we see this dip in both the lines is because some of our high-growth stocks are also in the S&P 500 index. Therefore, the change in value is seen in both lines. The fact that the S&P 500 started at the same value but ended above our high-growth means that we would have earned more money if we had just simply invested in the S&P 500 index.

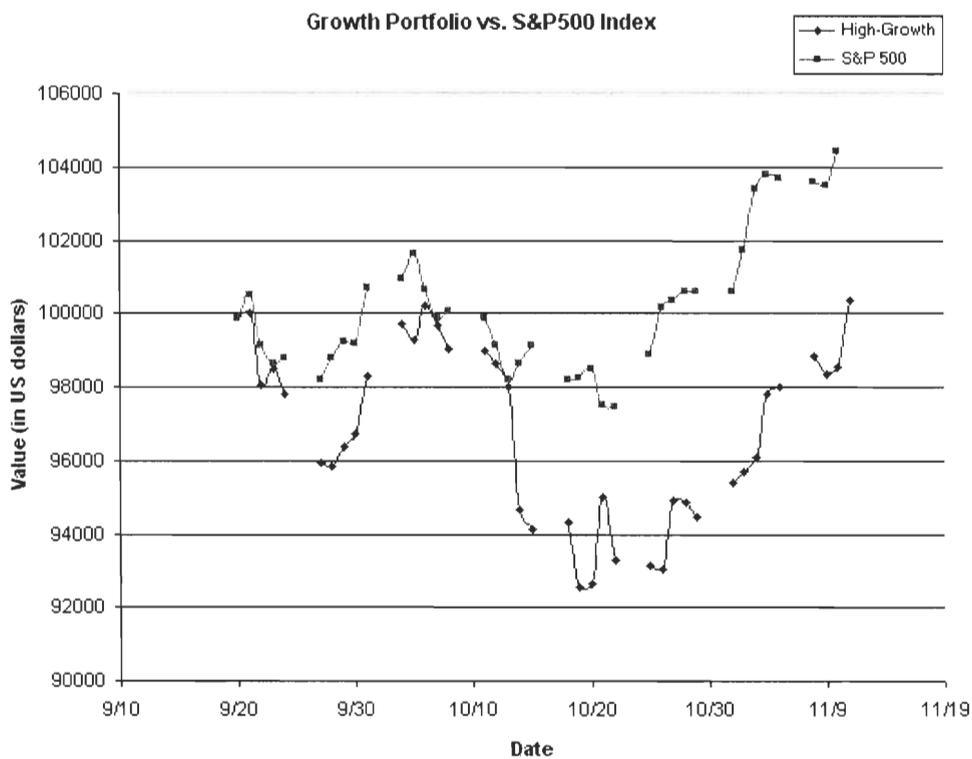


Figure 4.12: Growth Portfolio vs. S&P 500 from September 20th to November 11th

### ***4.3 Dog's of the Dow Simulation***

Dog's of the Dow is an investment strategy that has proven successful since 1972 when it was first introduced. The strategy consists of buying ten stocks from the Dow Jones Industrial Index with the highest dividend yields and lowest prices at the beginning of the year. The idea is based around the fact that all stocks on the Dow Jones Index are high quality companies with low risk in investing in them. Each year, the portfolio is re-adjusted with the new dogs of the Dow. While the companies are out of favor, their stock prices are generally low, and by the end of the year they will have rebounded.

The Dogs of the Dow investment strategy focuses on the projected performance of the high dividend yield stocks on the Dow Jones Industrial Average; commonly known as just the Dow. What this technique consists of is an equal dollar investment into the ten highest annual dividend-yielding stocks on the index.

The Dow consists of thirty blue chip companies. The companies contained within this index are usually well established and cover numerous sectors of the market. The wide coverage of market sectors, allows the Dow to accurately gauge the market condition. Usually companies that pay dividends are the ones that are well established and are no longer rapidly expanding (Blue Chip). They issue dividends as an incentive for investors to buy their stock.

When the market closes on any date you so choose, the first step is to look up the thirty stocks that make up the Dow. The key here is to choose a date in which you will be able to remain consistent for several years or for however long you plan to use this investment strategy. You then select the ten stocks with the highest dividend yield and invest an equal dollar amount into each. You won't touch this portfolio until the same date on the following year in which you initially purchased the stocks. It is important to try and remain consistent with your buy/sell date.

At the end of the year, the simulation repeats itself. You reinvest in the current top ten dividend yielding stocks and wait again, until the same time the following year. This method should earn you a percentage point or two above the market average. However, keep in mind that the strategy was based upon investing in the companies with the highest dividend yield, that's it. "The high yielding stocks are the ones with prices that are low relative to the dividend paid, indicating stocks that are out of favor" (The Motley Fool). Sometimes stocks can be out of favor for a reason, so it would be smart to do some research...companies can be removed from the Dow but there's usually reason's for it.

*-During the tech bubble of the late 90s, the high dividend stocks of the Dogs of the Dow were up 28.6% in 1996, up 22.2% in 1997, up 10.7% in 1998, and up 4.0% in 1999.*

([www.dogsofthedow.com](http://www.dogsofthedow.com))

*-During the difficult bear market years of 2000 - 2002, the Dogs of the Dow were down 4.9% in 2001, and down 8.9% in 2002, and that was enough to significantly outperform the Dow, S&P 500, and Nasdaq.*

([www.dogsofthedow.com](http://www.dogsofthedow.com))

*-In 2003, the high dividend stocks of the Dogs of the Dow gained 28.7% and made new, all-time highs despite the massive bear market of 2000-2002!*

([www.dogsofthedow.com](http://www.dogsofthedow.com))

This simulation was replicated for the years of 1999, 2000, 2001, 2002, and 2003. We researched historical data for the companies on the Dow during the given years and record the yield for each. You can see this in figure 4.13.

1999		2000		2001		2002		2003	
Symbol	%Yield								
JPM	3.77	MO	8.35	MO	4.82	EK	6.12	MO	6.32
MO	3.29	JPM	3.16	EK	4.47	MO	5.06	JPM	5.67
MMM	3.09	CAT	2.76	GM	3.93	GM	4.12	GM	5.43
CHV	2.94	GM	2.75	DD	2.9	JPM	3.74	EK	5.14
GM	2.79	EK	2.66	CAT	2.87	DD	3.29	SBC	3.98
DD	2.64	MMM	2.29	JPM	2.82	CAT	2.68	DD	3.3
CAT	2.61	XOM	2.18	IP	2.45	SBC	2.61	HON	3.13
EK	2.44	DD	2.13	SBC	2.12	IP	2.48	GE	3.12
GT	2.38	SBC	1.99	XOM	2.02	MRK	2.38	CAT	3.06
XON	2.24	IP	1.77	MMM	1.93	XOM	2.34	T	2.87

Figure 4.13: Dogs of the Dow Value Data

Our group wanted to show how these high yielding stocks historically outperform the top indices on an annual basis. To do this we researched the opening price of each one of the stocks, in each year, as well as the closing price for each one of the stocks, in each year. The index prices were also recorded so that they could be compared to the individual stocks. We adjusted for splits so that there were not any inconsistencies when charting the data.

Figure 4.14, next page, shows the historical prices, gains, and losses, for the indices and the stocks that appear in figure 4.13 for each year. The average gain or loss for the Dogs is listed in this chart, as well as the gains or losses for the Dow index. We also decided to include the historical gains and losses from the NASDAQ composite and the S&P500. To get a better feel for the achievements of the Dogs of the Dow compared to the indices, you would have to research back further than 1999. A website called “Dogs of the Dow,” located at <http://www.dogsofthedow.com>, do a study that dates back to 1973 and shows a cumulative gain of 17.3%, which was 5.8% above the Dow Jones return. You can also see in the chart that the Dogs of the Dow outperformed the Dow Jones Industrial Average every year except for 1999.

This loss could have been due to the sudden crash of the dot-com companies near the turn of the century.

This method of selecting stocks does not guarantee an out performance of the Dow on a yearly basis. What we are presenting here is a method that historically out performs this index on average. The Dogs of the Dow investment method should be considered a long-term investment because money needs to be held in the market for a long time to redeem the high returns. Also, even if you're portfolio does out perform the Dow; it doesn't necessarily mean that it is going to make a positive impact on your bank account. A loss could still be out performing the index; it just might mean "less" of a loss.

Dogs of the Dow Stocks											
1999				2000				2001			
Symbol	Buy Price	Sell Price	% Gain/Loss	Symbol	Buy Price	Sell Price	% Gain/Loss	Symbol	Buy Price	Sell Price	% Gain/Loss
JPM	44.2	48.37	9.43	MO	17.69	36.42	105.88	MO	36.42	39.27	7.83
MO	39.02	17.69	-54.66	JPM	48.37	42.43	-12.28	EK	33.78	26.37	-21.94
MMM	28.22	40.84	44.72	CAT	40.96	42.66	4.15	GM	42.53	42.13	-0.94
CHV	27.31	31.03	13.62	GM	58.94	42.53	-27.84	DD	42.69	38.3	-10.28
GM	46.73	58.94	26.13	EK	55	33.78	-38.58	CAT	42.66	48.48	13.64
DD	44.55	56.53	26.89	MMM	40.84	52.88	29.48	JPM	42.43	33.95	-19.99
CAT	39.14	40.96	4.65	XOM	34.81	39.21	12.64	IP	37.09	37.62	1.43
EK	58.27	55	-5.61	DD	56.53	42.69	-24.48	SBC	40.6	34.07	-16.08
GT	41.46	24.24	-41.53	SBC	40.57	40.6	0.07	XOM	39.21	36.61	-6.63
XON	30.25	34.81	15.07	IP	50.62	37.09	-26.73	MMM	52.88	54.12	2.34
<b>% Average Gain/Loss</b>			<b>3.87</b>	<b>% Average Gain/Loss</b>			<b>2.23</b>	<b>% Average Gain/Loss</b>			<b>-5.06</b>
Competing Indices											
^DJI	9181.43	11497.12	25.22	^DJI	11497.12	10355	-9.93	^DJI	10355	10021.57	-3.22
^GSPC	1229.23	1469.25	19.53	^GSPC	1469.25	1320.28	-10.14	^GSPC	1320.28	1148.08	-13.04

2002				2003			
Symbol	Buy Price	Sell Price	% Gain/Loss	Symbol	Buy Price	Sell Price	% Gain/Loss
EK	26.37	33.1	25.52	MO	36.59	52.26	42.83
MO	39.27	36.59	-6.82	JPM	22.41	35.48	58.32
GM	42.13	33.38	-20.77	GM	33.38	50.98	52.73
JPM	33.95	22.41	-33.99	EK	33.1	25.22	-23.81
DD	38.3	39.97	4.36	SBC	24.42	24.83	1.68
CAT	48.48	43.75	-9.76	DD	39.97	44.77	12.01
SBC	34.07	24.42	-28.32	HON	22.95	32.89	43.31
IP	37.62	33.44	-11.11	GE	23.27	30.43	30.77
MRK	51.42	50.79	-1.23	CAT	43.75	81.44	86.15
XOM	36.61	33.36	-8.88	T	23.89	19.41	-18.75
<b>% Average Gain/Loss</b>			<b>-9.10</b>	<b>% Average Gain/Loss</b>			<b>28.52</b>
^DJI	10021.57	8341.63	-16.76	^DJI	8341.63	10453.92	25.32
^GSPC	1148.08	879.82	-23.37	^GSPC	879.92	1111.92	26.37
^IXIC	1950.4	1335.51	-31.53	^IXIC	1335.51	2003.37	50.01

Figure 4.14: Dogs of the Dow Data

*\*\* The emphasized average gain/loss percentages are focused on the Dogs of the Dow and the Dow Jones Industrial Average. The other indices are there to further prove the strength of the Dogs of the Dow.*

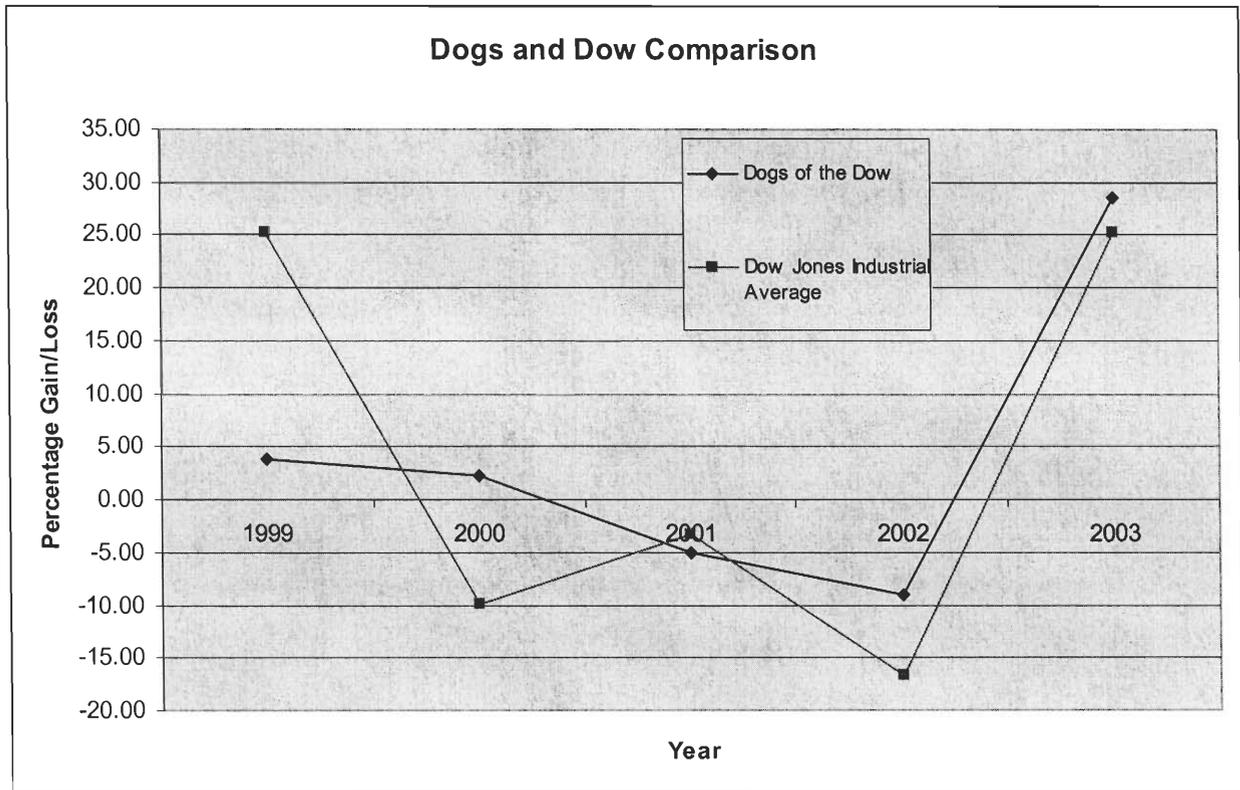


Figure 4.15: Dogs and Dow Comparison Graph

Figure 4.15, above, tracks the yearly trends of the Dogs of the Dow and the Dow Jones Index. You can see that the Dow index as a whole fluctuates, or is more volatile, than the Dogs of the Dow themselves. In figure 4.14, you can calculate the return from the Dogs of the Dow to be the average of the returns for each year. For three out of the five years that the Dogs of the Dow out perform the Dow index, it does so by an average of 7.67%. Nonetheless, in order to reap the benefits of investing in these high yielding stocks, you would need to stay in the game for a number of years; but like any stock investments, it is never a sure thing.

## 4.4 The January Effect

The January Effect is a phenomenon first observed in the 1980's and popularized by many books throughout the period. It observed that it was possible to make gains outperforming the market by investing in small-cap stocks in the beginning of December, and unloading them in January. There were several factors that contributed to the cause of the effect. Investors would sell off the underperforming stocks in their portfolio at the end of the year to use the loss to offset their capital gains. A second cause was that fund managers would want to lock in their out performance or minimize their underperformance of the market towards the end of the year, so they would sell off their worst stocks. It mainly affected small cap stocks because small cap stocks have fewer shares outstanding and less market capitalization. When traders sell a substantial quantity of shares, the price drops significantly. The effect caused stocks to drop in price in December during the sell offs, then rise in price in January as people bought back. The market has since adjusted for the effect, and it has not been noticeable in years. This is apparent in figure 4.16. The S&P 500 is used as the primary index.

S&P 500 Closing Prices		
Date	Closing Price	Percentage Gain
10-Dec-03	1059.05	
26-Jan-04	1155.37	8.34 %
12-Dec-02	901.58	
14-Jan-03	931.66	3.23 %
11-Dec-01	1136.76	
4-Jan-03	1172.51	3.05 %
15-Dec-00	1312.15	
18-Jan-01	1347.97	2.66 %
14-Dec-99	1403.17	
14-Jan-00	1465.15	4.23 %

Figure 4.16: S&P 500

## 5. Conclusion

We based our IQP around an eight-week stock market simulation that ran over two terms. We based the simulation on two types of portfolios: a high-growth portfolio and a value portfolio. The results culminated in a formal research report that analyzed different investment strategies and portfolio performances. We included historical information on the origins of the modern trading market, information on valuable financial resources, and diversification techniques. When we initially began planning our project, we considered keeping competition between members of the group. However, we quickly realized that value portfolios are a completely different animal than high growth portfolios. It was for this reason that all of the group members contributed mutually to the simulations.

As the stock market simulation ended, we determined that it would be difficult to judge the superiority of either our value or high growth portfolios. Both of our portfolios had very similar returns at the end of the short eight-week simulation, and we created both portfolios with completely different goals. Moreover, value investment experts dictate that it is impossible to realize the benefits of a value investment portfolio over a period less than one year. Therefore, our value portfolio becomes solely an experiment in demonstrating the methods involved in analyzing and discovering suitable value stocks and avoiding pitfalls.

Initially, the high growth portfolio was outperforming the value portfolio, which is precisely what we predicted. With surging oil prices and the upcoming presidential election, many of the blue-chip corporations were at all time lows, which created an optimal environment for selecting value stocks. During the first few weeks of our simulation, the value portfolio decreased substantially in value as news of poor economic conditions continued. Decreases in oil prices and the release of optimistic economic data nearing the end of our simulation caused the

value portfolio to begin outperforming the high growth portfolio. The market was adjusting and beginning to realize the true value of the stocks.

After studying our trading records and comparing profits to losses, we found that our value portfolio outperformed the high growth portfolio. This behavior was a completely unexpected fluke event. It does not indicate anything in terms of the superiority of value portfolio investment. We still stand by the fact that assessing a value investment technique requires a year or more of holding.

We ran each high growth stock through a selection of screeners, which was supposed sift through a grouping of stocks and point us in the directions of the ones in which the proper criteria was met. The same went for the value stocks; a group of stocks were sent through a screener and what we were left with were the securities we purchased. However, we came to find that each given stock did not perform equally as well as another; even though each one had been filtered through the same screener. We determined this was primarily due to the differences in industries and industry sectors. Take for example General Motors (GM). We had initially bought this blue-chip (value) stock at a price of \$41.84 per share. This was in late September when oil prices were roaring to unreal prices of over \$50 a barrel. We found that the automotive industry tends to be affected by high oil prices because people tend to drive less when gas prices go up. When people drive their cars less, the demand for new cars go down, which directly affects automotive sales.

We determined that many of the losses in the high growth portfolio came from missed technical signals. We missed several “sell” signals simply because we lacked experience in short term trading. As the simulation progressed, we used the knowledge gained, and we were able to uncover and recognize trends that aided in several significant buys.

At the end of the simulations, we felt like the experience we gained from this project was very rewarding. We dedicated a significant amount of time to research and analysis of the stocks in our portfolios, and it was very gratifying to see such respectable gains on our initial investments. The experience from this project has provided us with a head start to become more intelligent investors. We hope that those who read this report will gain knowledge about investing and be inspired to create their own stock portfolios.

## 6. Company Profiles

**Bradley Pharmaceuticals Inc (BDY)**  
**Index Membership: S&P 600 Small Capital**  
**Sector: Healthcare**  
**Industry: Biotechnology & Drugs**

Bradley Pharmaceuticals, Inc. is a specialty pharmaceutical company that acquires, develops and markets prescription and over-the-counter products in select markets. The Company's subsidiary, Doak Dermatologics, promotes its core branded dermatologic and podiatric products including Bradley Pharmaceuticals' Carmol40, Lidamantle, Rosula and Zoderm product lines, primarily to dermatologists and podiatrists. Its Kenwood Therapeutics division promotes the Company's core branded gastrointestinal products including Anamantle HC, Pamine, Pamine Forte and Flora-Q, primarily to gastroenterologists and colon and rectal surgeons, and, to a lesser extent, it also markets nutritional supplements and respiratory products. (<http://finance.yahoo.com/q/pr?s=BDY>) Bradley's products include prescription and ethically-promoted non-prescription drugs that are marketed in 31 markets worldwide. By targeting unfilled marketing opportunities, observing discipline within well-defined budgets and introducing product line extensions to answer unmet needs, Bradley has entered a vibrant growth stage -- seven new line extensions to the Company's key promoted product families were launched beginning in September 2000. (<http://www.bradpharm.com/bradabout.htm>)

**Louisiana-Pacific Corp (LPX)**  
**Index Membership: S&P 500**  
**Sector: Basic Materials**  
**Industry: Forestry & Wood Products**

Louisiana-Pacific Corporation is a manufacturer and distributor of building products used primarily in new home construction, repair and remodeling and manufactured housing. The

Company delivers these products to the retail, wholesale, home building and industrial markets predominantly in North America. It also sells and distributes its products to the light industrial and commercial construction markets, and runs an export business for some of its specialty building products to Asia, Europe and South America. Louisiana-Pacific operates in four principal segments: Oriented Strand Board (OSB), Composite Wood Products, Plastic Building Products and Engineered Wood Products (EWP). (<http://finance.yahoo.com/q/pr?s=LPIX>) Louisiana-Pacific Corporation has more than 40 manufacturing facilities in North America. (<http://www.lpcorp.com/about/default.jsp>) In addition to its United States operations, the Company also maintains manufacturing facilities in Canada and Chile through foreign subsidiaries and joint ventures. (<http://finance.yahoo.com/q/pr?s=LPIX>)

**Eon Labs Inc (ELAB)**

**Index Membership: N/A**

**Sector: Healthcare**

**Industry: Biotechnology & Drugs**

Eon Labs, Inc. is a generic pharmaceutical company engaged in developing, licensing, manufacturing, selling and distributing a range of prescription pharmaceutical products primarily in the United States. The Company focuses primarily on drugs in a broad range of solid oral dosage forms, utilizing both immediate and sustained release delivery, in tablet, multiple layer tablet, film-coated tablet and capsule forms. Eon Labs obtains new generic pharmaceutical products primarily through internal product development and from strategic licensing or co-development arrangements with Hexal AG, as well as with other companies. The Company is involved in the development of over 45 pharmaceutical products, including products with applications pending with the United States Food and Drug Administration. (<http://finance.yahoo.com/q/pr?s=ELAB>) Their diverse product line consists of approximately

200 products representing various dosage strengths for 60 drugs. Eon Labs' ongoing commitment to R&D and significant manufacturing capacity serve as the springboard for future growth.  
(<http://www.eonlabs.com/aboutus.asp>)

**Silicon Laboratories Inc (SLAB)**

**Index Membership: S&P 400 MidCap**

**Sector: Technology**

**Industry: Semiconductors**

Silicon Laboratories Inc. designs and develops proprietary, analog-intensive, mixed-signal integrated circuits (ICs) for use in a range of applications. The Company groups its products into two categories: mobile handset products and broad-based, mixed-signal products. Its mobile handset products include the Aero transceivers and radio frequency (RF) synthesizers. Its broad-based, mixed-signal products include silicon Direct Access Arrangement, ISOModem, ProSLIC (subscriber line interface circuits), digital subscriber line analog front end, clock chips, SiPHY, optical transceivers and clock and data recovery ICs, general purpose RF Synthesizers for non-handset applications, as well as the Cygnal eight-bit microcontroller family of products.  
(<http://finance.yahoo.com/q/pr?s=SLAB>) Silicon Laboratories is a fabless semiconductor company, enabling it to take advantage of widely available process technology that allows for reliable, mass production of the company's products at the world's most prominent semiconductor foundries.

([http://www2.silabs.com:80/tgwWebApp/appmanager/tgw/tgwHome;jsessionid=BLPMbTd87x715JcwhqVVVL8c2W3mD3ylvRY2xp7HvgSDTLWl6Y1h!482413951?\\_nfpb=true&\\_pageLabel=GenericContentPage&contentObjectId=/public/web\\_content/coinfo/overview/en/index.htm](http://www2.silabs.com:80/tgwWebApp/appmanager/tgw/tgwHome;jsessionid=BLPMbTd87x715JcwhqVVVL8c2W3mD3ylvRY2xp7HvgSDTLWl6Y1h!482413951?_nfpb=true&_pageLabel=GenericContentPage&contentObjectId=/public/web_content/coinfo/overview/en/index.htm))

**J2 Global Communications Inc (JCOM)**  
**Index Membership: S&P 600 SmallCap**  
**Sector: Services**  
**Industry: Communications Services**

J2 Global Communications, Inc. provides outsourced, value-added messaging and communications services to more than 7.6 million subscribers around the world. (<http://www.j2global.com/jcom/j2/page/companyOverview>) j2 Global's network spans more than 1,100 cities in 20 countries on five continents. The Company offers its services and software under the j2, eFax, jConnect, jFax, Consensus, Hotsend, PaperMaster, Protifax, M4 Internet, Electric Mail and Documagix brands. (<http://finance.yahoo.com/q/pr?s=JCOM>)

**Sohu.com Inc (SOHU)**  
**Index Membership: N/A**  
**Sector: Technology**  
**Industry: Computer Services**

Sohu.com Inc. is a holding company with no operating assets other than investments in Chinese operating entities, including its intermediate holding company, Sohu.com Limited and its indirect wholly owned subsidiaries. The Company and its variable interest entities offer content, advertising, e-subscription and e-commerce services through the Internet portal sites, Sohu.com, Chinaren.com, focus.cn and 17173.com. Sohu.com markets its products and services to clients primarily in the People's Republic of China. (<http://finance.yahoo.com/q/pr?s=SOHU>)

**New Frontier Media Inc (NOOF)**  
**Index Membership: N/A**  
**Sector: Services**  
**Industry: Motion Pictures**

New Frontier Media, Inc. is a provider of adult programming to low-powered (C-Band) direct-to-home (DTH) households through its networks TEN\*Xtsy and TEN\*Max. The

Company also operates five networks targeted at cable television system operators and high-powered DTH satellite service providers called the direct broadcast satellite (DBS): TEN, Pleasure, TEN\*Clips, TEN\*Blue and TEN\*Blox. New Frontier Media is organized into two segments: Pay TV Group, which distributes branded adult entertainment programming via pay-per-view networks and video-on-demand content through electronic distribution platforms, including cable television, DBS, hotels and C-Band, and the Internet Group, which aggregates and resells adult content via the Internet. The Internet Group sells content to monthly subscribers through its broadband Website, [www.TEN.com](http://www.TEN.com). (<http://finance.yahoo.com/q/pr?s=NOOF>)

**Verizon Communications (VZ)**

**Index Membership: Dow Industrials, S&P 500**

**Sector: Services**

**Industry: Communications Services**

A Fortune 20 company, Verizon Communications is one of the world's leading providers of communications services, with approximately \$68 billion in annual revenues. (<http://investor.verizon.com/profile/index.html>) Verizon is a provider of communications services with four operating segments: Domestic Telecom, Domestic Wireless, Information Services and International. Domestic Telecom services principally represent Verizon's telephone operations that provide local telephone services in 29 states and the District of Columbia. Domestic Wireless products and services include wireless voice and data services and equipment sales across the United States. The Information Services segment encompasses the Company's domestic and international publishing businesses, including print SuperPages and electronic SuperPages.com directories, as well as Website creation and other electronic commerce services. This segment has operations principally in North America and Latin America. The International

segment has wireline and wireless communications operations and investments primarily in the Americas, as well as investments in Europe. (<http://finance.yahoo.com/q?s=vz>)

**Sandisk Corp (SNDK)**

**Index Membership: S&P 400 MidCap, Nasdaq 100**

**Sector: Technology**

**Industry: Computer Storage Devices**

SanDisk Corporation is the world's largest supplier of flash memory data storage card products. SanDisk (formerly SunDisk) was founded in 1988 by Eli Harari, an international authority on non-volatile memory technology. SanDisk designs, develops and markets flash memory data storage card products used in a wide variety of electronic systems. The company has optimized its flash memory storage solution, known as "system flash," to address the needs of many emerging applications in the consumer electronics and industrial/communications markets. Many major OEMs sell cards produced by SanDisk under their own brand names. These companies include Hewlett-Packard, Fujitsu, Motorola, Kodak and Panasonic. (<http://www.sandisk.com/corporate/>) SanDisk's product families include removable CompactFlash cards, Ultra CompactFlash cards, Wi-Fi CompactFlash cards, Secure Digital (SD) cards, SD Ultra cards, Wi-Fi SD cards, the Memory Stick product line, SmartMedia cards, xD-Picture cards, FlashDisk cards, the Cruzer USB Flash Drive product line, MultiMediaCards and embedded Flash ChipSets, embedded TriFlash and the semi-removable T-Flash module that SanDisk announced in late February 2004. (<http://finance.yahoo.com/q/pr?s=SNDK>)

**Fox Entertainment Group Inc (FOX)****Index Membership: N/A****Sector: Services****Industry: Broadcasting & Cable TV**

Fox Entertainment Group, Inc. is an entertainment company with operations in four business segments: Filmed Entertainment, Television Stations, Television Broadcast Network and Cable Network Programming. The Filmed Entertainment segment consists of the production and acquisition of motion pictures for distribution and licensing in all entertainment media primarily in the United States, Canada and Europe, and the production of original television programming in the United States and Canada. The Television Stations segment principally consists of the operation of broadcast television stations in the United States. The Television Broadcast Network segment consists of the broadcasting of network programming in the United States. The Cable Network Programming segment consists of the production and licensing of programming distributed through cable television systems and direct broadcast satellite operators in the United States and professional sports team ownership in the United States. (<http://finance.yahoo.com/q/pr?s=FOX>)

**eBay Inc (EBAY)****Index Membership: S&P 500, Nasdaq 100, AMEX Internet****Sector: Services****Industry: Retail (Specialty)**

eBay Inc. developed an Internet-based community in which buyers and sellers are brought together to buy and sell almost anything. The eBay online service permits sellers to list items for sale, buyers to bid on items of interest and all eBay users to browse through listed items in a fully automated, topically arranged service that is available online seven days a week. Through the PayPal service, the Company enables any business or consumer with e-mail in 38 countries to send and receive online payments. (<http://finance.yahoo.com/q/pr?s=EBAY>) Today,

the eBay community includes more than a hundred million registered members from around the world. People spend more time on eBay than any other online site, making it the most popular shopping destination on the Internet.

(<http://pages.ebay.com/aboutebay/thecompany/companyoverview.html>)

**Kraft Foods Inc (KFT)**

**Index Membership: N/A**

**Sector: Consumer Non-Cyclical**

**Industry: Food Processing**

Kraft Foods Inc. is engaged in the manufacture and sale of branded foods and beverages around the globe. The Company's brands span five consumer sectors: Snacks, primarily cookies, crackers, salted snacks and confectionery; Beverages, primarily coffee, aseptic juice drinks and powdered beverages; Cheese, primarily natural, process and cream cheeses; Grocery, primarily ready-to-eat cereals, enhancers and desserts, and Convenient Meals, primarily frozen pizza, packaged dinners, lunch combinations and processed meats. Kraft conducts its global business through its subsidiaries, Kraft Foods North America, Inc. and Kraft Foods International, Inc. The Company has operations in 68 countries and sells its products in more than 150 countries.

(<http://finance.yahoo.com/q/pr?s=KFT>)

**Bon-Ton Stores Inc (BONT)**

**Index Membership: N/A**

**Sector: Services**

**Industry: Retail (Department & Discount)**

The Bon-Ton Stores, Inc. is a traditional department store retailer with a 106-year history of providing merchandise to its customers in secondary markets. On October 24, 2003, the Company acquired The Elder-Beerman Stores Corp., nearly doubling its number of stores and adding 5.7 million square feet of retail space. As a result of the acquisition, at January 31, 2004,

The Bon-Ton Stores operates 140 department stores and two furniture stores in 16 states, from the Northeast to the Midwest, under the Bon-Ton and Elder-Beerman names. The stores carry an assortment of brand name and private-label fashion apparel and accessories for women, men and children, as well as cosmetics and home furnishings. The Company's primary target customers are women between the ages of 35 and 65 with annual household incomes between \$35,000 and \$100,000. (<http://finance.yahoo.com/q/pr?s=BONT>)

**Culp Inc (CFI)**

**Index Membership: N/A**

**Sector: Consumer Cyclical**

**Industry: Textiles - Non Apparel**

Culp, Inc. manufactures and markets mattress fabrics and upholstery fabrics. The Company's fabrics are used in the production of residential and commercial furniture and bedding products, including sofas, recliners, chairs, loveseats, sectionals, sofa-beds, office seating, panel systems and mattress sets. Culp offers its products in a range of fabric constructions, patterns, colors, textures and finishes. The Company's operating segments are mattress fabrics and upholstery fabrics, with related divisions organized within those segments. The division within mattress fabrics is Culp Home Fashions. The divisions within upholstery fabrics are Culp Decorative Fabrics, including the company's yarn manufacturing facilities and the operation located in China, and Culp Velvets/Prints. The mattress fabrics segment sales accounted for 33.4%, and the upholstery fabrics segment accounted for 66.6% of the Company's consolidated sales during the fiscal year ended May 2, 2004 (fiscal 2004). (<http://finance.yahoo.com/q/pr?s=CFI>)

**Ezcorp Inc (EZPW)**  
**Index Membership: N/A**  
**Sector: Services**  
**Industry: Retail (Specialty)**

EZCORP, Inc. is engaged primarily in operating pawnshops and payday loan stores in the United States. As of September 30, 2003, the Company operated 280 pawn locations in 11 states under the name EZPAWN. EZCORP meets the short-term cash needs of the cash and credit constrained consumer by offering non-recourse loans collateralized by tangible personal property, commonly known as pawn loans; by offering short-term non-collateralized loans, often referred to as payday loans, and by purchasing customers' merchandise at its pawnshop locations. Also in its pawnshops, the Company acquires inventory for its retail sales primarily through pawn loan forfeitures and, to a lesser extent, through purchases of customers' merchandise. (<http://finance.yahoo.com/q/pr?s=EZPW>)

**General Motors Corp (GM)**  
**Index Membership: Dow Industrials, S&P 500**  
**Sector: Consumer Cyclical**  
**Industry: Auto & Truck Manufacturers**

General Motors Corporation (GM) participates in the automotive industry through the activities of General Motors Automotive, which consists of four regions: GM North America (GMNA), GM Europe (GME), GM Latin America/Africa/Mid-East (GMLAAM) and GM Asia Pacific (GMAP). GMNA designs, manufactures and/or markets vehicles, primarily in North America under the following nameplates: Chevrolet, Pontiac, GMC, Oldsmobile, Buick, Cadillac, Saturn and Hummer. GME, GMLAAM and GMAP meet the demands of customers outside North America with vehicles under the following nameplates: Opel, Vauxhall, Holden, Saab, Buick, Chevrolet, GMC and Cadillac. GM's Financing and Insurance Operations primarily relate to General Motors Acceptance Corporation. It provides consumer vehicle financing,

automotive dealership and other commercial financing, residential and commercial mortgage services, automobile service contracts, personal automobile insurance coverage and selected commercial insurance coverage. (<http://finance.yahoo.com/q/pr?s=GM>)

**Haggar Corp (HGGR)**

**Index Membership: S&P 600 SmallCap**

**Sector: Consumer Cyclical**

**Industry: Apparel/Accessories**

Haggar Corp. designs, manufactures, imports and markets casual and dress men's and women's apparel products, including pants, shorts, suits, sportcoats, sweaters, shirts, dresses, skirts and vests in the United States and abroad. The Company markets its premium men's apparel products under the Haggar brand name, and markets more moderately priced lines of men's clothing under a variety of trademarks offered by its mass-market retailer division, The Horizon Group. The Horizon Group also offers to retailers quality men's apparel bearing the retailers' own label. The Company offers its women's apparel products under the Haggar brand and several other trademarks offered by its women's wear subsidiary, Jerell, Ltd. (<http://finance.yahoo.com/q/pr?s=HGGR>)

**M & F Worldwide Corp (MFW)**

**Index Membership: N/A**

**Sector: Consumer Non-Cyclical**

**Industry: Beverages (Non-Alcoholic)**

M & F Worldwide Corp. is a holding company that conducts its operations primarily through its indirect wholly owned subsidiary, Pneumo Abex Corporation. The Company produces a variety of licorice flavors from licorice root, intermediary licorice flavors produced by others and certain other ingredients at its facilities in the United States, France and in the People's Republic of China. Over 70% of M & F Worldwide's licorice sales are to the worldwide

tobacco industry for use as flavoring and moistening agents in the manufacture of American blend cigarettes, moist snuff, chewing tobacco and pipe tobacco. The Company also sells licorice to worldwide confectioners, food processors and pharmaceutical manufacturers for use as flavoring or masking agents. In addition, it sells licorice root residue as garden mulch under the name Right Dress. (<http://finance.yahoo.com/q/pr?s=MFW>)

**Northwest Pipe Co (NWPX)**

**Index Membership: N/A**

**Sector: Capital Goods**

**Industry: Construction - Supplies & Fixtures**

Northwest Pipe Company manufactures welded steel pipe in two business segments. In the Company's Water Transmission business, it is a supplier in the United States and Canada of large diameter, high-pressure steel pipe used primarily for water transmission. In its Tubular Products business, the Company manufactures smaller diameter, electric resistance welded steel pipe for use in a range of construction, agricultural, energy and industrial applications. In addition, Northwest produces propane tanks from its manufacturing facility in Monterrey, Mexico. During the year ended December 31, 2003, Water Transmission and Tubular Products revenues represented approximately 60% and 40% of the Company's net sales, respectively. (<http://finance.yahoo.com/q/pr?s=NWPX>)

**Octel Corp (OTL)**

**Index Membership: N/A**

**Sector: Basic Materials**

**Industry: Chemical Manufacturing**

Octel Corp. is an international chemical company specializing in the manufacture, distribution and marketing of fuel additives and specialty chemicals. Its primary manufacturing operation is located at Ellesmere Port, South Wirral, United Kingdom. The Company's products

are sold globally, primarily to oil refineries. Principal product lines are tetraethyl lead (TEL), other petroleum additives and performance chemicals. Octel is organized into two business units: TEL and Specialty Chemicals. The principal product of the TEL business is lead alkyl antiknock compound. The Specialty Chemicals Business Unit comprised of two developing business areas: Petroleum Specialties and Performance Chemicals. The Petroleum Specialties business develops, produces and markets a range of specialty products, used as additives to fuels. The Refinery Specialties unit supplies a growing list of products and services that improve operational efficiencies and product performance at the refinery. (<http://finance.yahoo.com/q/pr?s=OTL>)

**P&F Industries Inc (PFIN)**

**Index Membership: N/A**

**Sector: Consumer Cyclical**

**Industry: Appliance & Tool**

P & F Industries, Inc. conducts its business operations through its four wholly owned subsidiaries: Florida Pneumatic Manufacturing Corporation, Countrywide Hardware, Inc., Green Manufacturing, Inc. and Embassy Industries, Inc. Florida Pneumatic is engaged in the importation, manufacture and sale of pneumatic hand tools, primarily for the industrial and retail markets, and the importation and sale of compressor air filters. Countrywide conducts its business operations through Nationwide Industries, Inc., a wholly owned subsidiary, and through its Franklin Manufacturing division. Nationwide is an importer and manufacturer of door, window and fencing hardware. Franklin imports a line of door and window hardware. Green is engaged primarily in the manufacture, development and sale of heavy-duty welded custom designed hydraulic cylinders. Embassy is engaged in the manufacture and sale of baseboard heating products and the importation and sale of radiant heating systems. (<http://finance.yahoo.com/q/pr?s=PFIN>)

**Pomeroy IT Solutions Inc (PMRY)****Index Membership: N/A****Sector: Technology****Industry: Computer Hardware**

Pomeroy IT Solutions, Inc., together with its subsidiaries, provides enterprise-wide information technology solutions (IT) that leverage its portfolio of professional services. The Company operates in three industry segments: products, services and leasing. Its product business is composed of the sale of a broad range of desktop computer equipment, including servers, infrastructure and peripherals. Its services business entails providing IT services that support such computer products. The services segment can be classified into three components: enterprise consulting, infrastructure solutions and lifecycle services. The Company also offers leasing solutions to its clients. In July 2004, the Company acquired Alternative Resources Corporation, a provider of information technology solutions and staffing services. (<http://finance.yahoo.com/q/pr?s=PMRY>)

**Tandy Brands Accessories Inc (TBAC)****Index Membership: N/A****Sector: Consumer Cyclical****Industry: Apparel/Accessories**

Tandy Brands Accessories, Inc. is a designer, manufacturer and marketer of branded men's, women's and children's accessories, including belts and small leather goods such as wallets. Its product line also includes handbags, socks, scarves, gloves, hats, hair accessories, suspenders, cold weather accessories and sporting goods accessories. The Company markets its merchandise under a portfolio of licensed and proprietary brand names, including Dockers, Levi's, Levi Strauss Signature, Jones New York, Perry Ellis Portfolio, Perry Ellis America, Rolfs, Haggar, Woolrich, Jordache, Bugle Boy, Canterbury, Prince Gardner, Princess Gardner,

Coletta, Stagg, Amity, Accessory Design Group and Tiger, as well as private brands for major retail customers. (<http://finance.yahoo.com/q/pr?s=TBAC>)

**Tesco Technologies Inc (TESS)**

**Index Membership:** N/A

**Sector:** Technology

**Industry:** Communications Equipment

TESSCO Technologies Incorporated (TESSCO) is a provider of integrated products and supply chain solutions to the professionals that design, build, run, maintain and use wireless voice, data, messaging, location tracking and Internet systems. TESSCO links customers with integrated products and supply chain solutions configured from product choices made by manufacturers. While creating Your Total Source opportunity for the Company's customers to improve the way business is done, TESSCO presents, markets, sells, supplies and supports manufacturers' products as a part of a total customer solution. TESSCO's operational platform, which it refers to as its Knowledge, Configuration, Delivery and Control System (KCDC), provides availability and delivery to the point of use. (<http://finance.yahoo.com/q/pr?s=TESS>)

**Village Super Market Inc (VLGEA)**

**Index Membership:** N/A

**Sector:** Services

**Industry:** Retail (Grocery)

Village Super Market, Inc. operates a chain of 23 ShopRite supermarkets, 16 of which are located in northern New Jersey, one of which is in northeastern Pennsylvania and six of which are in the southern shore area of New Jersey. The Company's superstores provide a one-stop shopping experience and features expanded higher-margin specialty departments such as home meal replacement, an onsite bakery, an expanded delicatessen including prepared foods, a natural and organic food section, ethnic and international foods and a fresh seafood section. Its

superstores also offer an expanded selection of non-food items such as cut flowers, health and beauty aids, greeting cards, videocassette rentals, small appliances, and, in most cases, a pharmacy. Remodeled and new superstores emphasize a Power Alley, which features high-margin convenience offerings such as salad bars, bakery and home meal replacement in an area within the store that provides quick customer entry and exit.  
(<http://finance.yahoo.com/q/pr?s=VLGEA>)

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# Appendix

## A-1 Value Portfolio Finalized Records

Symbol	Shares	9/20	9/21	9/22	9/23	9/24
BONT	575	13.29	12.79	12.51	12.38	12.44
CFI	1068	7.2	7.23	7.25	7.24	7.22
EZPW	883	8.72	8.78	8.8	8.94	8.85
GM	183	41.84	42.05	41.48	41.19	41.36
HGGR	409	18.8	19.04	18.91	18.7	17.26
MFW	591	13	13.05	13.02	13.03	12.98
NWPX	452	17	17.22	17.04	16.78	16.65
OTL	344	22.31	23.15	22.1	22.42	22.66
PFIN	800	9.61	9.3	9.3	9.19	9.09
PMRY	622	12.37	12.56	12.56	12.58	12.59
TBAC	563	13.65	13.96	13.5	13.98	13.8
TESS	646	11.89	12.16	11.78	11.71	11.88
VLGEA	248	31	31	31	31	31
Symbol	Shares	9/27	9/28	9/29	9/30	10/1
BONT	575	12.25	12.42	12.04	12.19	12.17
CFI	1068	7.38	7.3	7.25	7.35	7.37
EZPW	883	8.68	8.75	8.72	8.7	8.86
GM	183	41.15	41.25	41.1	42.48	43.14
HGGR	409	17.37	17.19	17.24	17.15	17.36
MFW	591	12.8	12.7	12.93	13.01	13.3
NWPX	452	16.82	16.91	17.1	17.36	17.85
OTL	344	22.31	22.12	22.22	21.24	22.44
PFIN	800	9.01	9.17	9.47	9.59	9.28
PMRY	622	12.25	12.49	12.45	12.66	13.01
TBAC	563	13.98	14.28	14.22	14.25	14.25
TESS	646	11.54	11.76	11.64	11.18	11.37
VLGEA	248	32	32	32	32	32.86
Symbol	Shares	10/4	10/5	10/6	10/7	10/8
BONT	575	12.46	12.2	11.98	11.01	11.7
CFI	1068	7.2	7.12	7.38	7.21	7.19
EZPW	883	9.03	9.07	9.44	9.11	9.04
GM	183	42.48	42.16	42.08	41.54	41.49
HGGR	409	17.4	17.2	17.88	17.27	17.18
MFW	591	13.2	12.94	13.13	13.19	13.13
NWPX	452	18.79	19	18.75	18.05	17.78
OTL	344	22.61	22.73	22.7	21.85	21.24
PFIN	800	9.25	9.52	9.52	9.52	9.3
PMRY	622	13.06	12.97	13.03	12.85	12.84
TBAC	563	14.25	14.28	14.27	14.38	14.25
TESS	646	11.28	11.36	11.25	11.57	11.66
VLGEA	248	32.86	32.5	32.5	32	34

<b>Symbol</b>	<b>Shares</b>	<b>10/11</b>	<b>10/12</b>	<b>10/13</b>	<b>10/14</b>	<b>10/15</b>
BONT	575	12.02	12.07	11.85	11.98	11.92
CFI	1068	7.19	7.3	7.16	7.16	7.15
EZPW	883	8.9	8.58	8.72	8.4	8.3
GM	183	41.42	41.8	41.3	38.84	38.95
HGGR	409	16.59	16.95	16.53	16.3	16.23
MFW	591	13.3	13.3	13.12	13.06	13.19
NWPX	452	17.92	18.19	17.8	18.15	18.03
OTL	344	20.29	20.65	20.6	20.2	20.66
PFIN	800	9.5	9.51	9.74	9.32	9.44
PMRY	622	12.86	13.1	13.01	12.75	12.87
TBAC	563	14.25	14.25	14.44	14.33	14.45
TESS	646	11.45	11.43	11.43	11.44	11.5
VLGEA	248	34.06	34	34.75	34.5	34.5
<b>Symbol</b>	<b>Shares</b>	<b>10/18</b>	<b>10/19</b>	<b>10/20</b>	<b>10/21</b>	<b>10/22</b>
BONT	575	11.49	11.3	11.1	11.15	11.04
CFI	1068	7.12	6.94	6.74	6.89	6.9
EZPW	883	8.31	8.06	7.93	8	7.8
GM	183	38.91	38	37.84	38.08	37.81
HGGR	409	15.97	15.9	15.74	15.97	15.79
MFW	591	13.23	13.2	13.27	13.22	13.05
NWPX	452	17.55	17.37	17.54	17.49	17.11
OTL	344	20.3	20.05	19.9	19.79	19.6
PFIN	800	9.3	9.3	9.3	9.3	9.3
PMRY	622	12.93	12.95	12.92	12.85	12.99
TBAC	563	14.74	14.46	14.25	14.6	14.7
TESS	646	11.43	11.32	10.92	11.15	10.91
VLGEA	248	35	35.25	34.25	35.75	36.76
<b>Symbol</b>	<b>Shares</b>	<b>10/25</b>	<b>10/26</b>	<b>10/27</b>	<b>10/28</b>	<b>10/29</b>
BONT	575	10.92	11.06	11.85	11.78	12
CFI	1068	6.81	6.52	6.6	6	6
EZPW	883	7.47	7.63	7.62	7.58	7.78
GM	183	37.04	37.57	38.08	38.81	38.55
HGGR	409	16.07	15.99	16	15.86	16.38
MFW	591	13.09	13.16	13.25	13.32	13.4
NWPX	452	17.1	17.25	16.52	17.14	17.11
OTL	344	18.7	19	19.5	19.3	19.3
PFIN	800	9.3	9.55	9.55	9.55	9.65
PMRY	622	13.02	13.01	13.1	12.98	13.03
TBAC	563	14.58	14.73	14.5	14.16	14.16
TESS	646	10.35	10.22	12.98	13.35	12.85
VLGEA	248	36.5	36.5	35.95	35	36.59

<b>Symbol</b>	<b>Shares</b>	<b>11/1</b>	<b>11/2</b>	<b>11/3</b>	<b>11/4</b>	<b>11/5</b>
BONT	575	11.85	11.82	11.96	11.83	11.7
CFI	1068	5.76	5.7	5.47	5.3	5
EZPW	883	8	7.7	8.32	8.57	8.97
GM	183	39.34	39.18			
HGGR	409	16.8	17.19	17.45	17.84	18.39
MFW	591	13.29	13.4	13.4	13.31	13.17
NWPX	452	16.75	16.91	17	17.1	17.24
OTL	344	19.1	19.4	19.86	19.76	19.45
PFIN	800	9.65	9.65	9.3	9.3	9.3
PMRY	622	13.53	13.87	13.87	13.78	13.77
TBAC	563	14.1	14.04	14.1	14.02	14.06
TESS	646	12.89	12.1	12.5	12.63	12.34
VLGEA	248	35.18	37.75	34.82	38.3	39.02

<b>Symbol</b>	<b>Shares</b>	<b>11/8</b>	<b>11/9</b>	<b>11/10</b>	<b>11/11</b>
BONT	575	11.69	11.89	12.54	12.46
CFI	1068	5.4	5.91	5.97	6.07
EZPW	883	8.93	8.9	10.62	11.02
GM	183	39.73	39.97	39.36	39.9
HGGR	409	18.06	17.7	17.91	18.54
MFW	591	13.06	13.02	13	13.05
NWPX	452	17.15	17.38	17.38	17.569
OTL	344	19.57	20.17	20.05	20.15
PFIN	800	9.3	9.3	9.3	12.57
PMRY	622	13.81	13.71	13.74	13.55
TBAC	563	14.04	14.03	14.09	14.1
TESS	646	12.87	13.09	13.09	13.1
VLGEA	248	40	39.75	39.91	39.5

## A-2 Growth Portfolio Finalized Records

Symbol	Share #	9/20	9/21	9/22	9/23	9/24
BDY	497	22.33	20.53			
LPX	427	25.98	26.46	25.79	25.63	25.2
ELAB	449	24.74	24.41	23.28	22.97	23.49
SLAB	298	37.21	36.93	35.11	35.84	35.52
FOX	363					
JCOM	355	31.26	31	30.61	30.92	30.27
SOHU	645	17.2	17.35	16.46	16.83	16.55
EBAY	264					
KFT	440					
NOOF	1,436	7.59	8.01	8.12	8.2	8.19
VZ	276	40.19	40.55	40.45	40.14	40.31
SNDK	408	27.22	28.09	27.95	28.08	27.38
Symbol	Share #	9/27	9/28	9/29	9/30	10/1
BDY	497					
LPX	427	24.83	25.17	25.43	25.95	26
ELAB	449	22.87	22.57			
SLAB	298	34.98	34.47	33.31		
FOX	363					
JCOM	355	29.38	29.76	31.34	31.59	32.23
SOHU	645	15.72				
EBAY	264					
KFT	440					
NOOF	1,436	7.97	7.79	7.65	7.71	8.14
VZ	276	39.8	39.86	39.78	39.38	40.04
SNDK	408	27.57	27.99	28.98	29.12	30.42
Symbol	Share #	10/4	10/5	10/6	10/7	10/8
BDY	497					
LPX	427	26.89	26.86	27.7	27.51	27.65
ELAB	449					
SLAB	298					
FOX	363					
JCOM	355	33.2	32.15	32.37	32.03	31
SOHU	645					
EBAY	264					
KFT	440					
NOOF	1,436	8.257	8.25	8.39	8.34	8.42
VZ	276	40.92	41.18	41.48	41.11	40.73
SNDK	408	31.2	30.91	31.42	30.95	30.2

Symbol	Share #	10/11	10/12	10/13	10/14	10/15
BDY	497					
LPX	427	27.87	27.99	26.56	26.43	25.79
ELAB	449					
SLAB	298					
FOX	363					29.2
JCOM	355	31.29	31.28	30.99	30.61	29.93
SOHU	645					
EBAY	264	93.73	93.49	94.56	95.47	93.76
KFT	440	31.21	31.17	31.32	31.57	32.14
NOOF	1,436	8.57	8.45	8.35	8.15	8.28
VZ	276	40.85	41.34	41.07	40.77	40.87
SNDK	408	28.96	28.3	28.2	20.52	
Symbol	Share #	10/18	10/19	10/20	10/21	10/22
BDY	497					
LPX	427	24.79	24.41	24.52	24.81	24.28
ELAB	449					
SLAB	298					
FOX	363	28.95	28.41	28.91	29.25	29.02
JCOM	355	31.15	30.19	30.56	30.95	29.78
SOHU	645					
EBAY	264	94.71	92.45	91.36	99.59	95.91
KFT	440	32.33	32.44	32.91	32.74	32.55
NOOF	1,436	8.23	7.98	7.92	7.87	8.08
VZ	276	40.83	40.31	40.04	39.79	38.97
SNDK	408					
Symbol	Share #	10/25	10/26	10/27	10/28	10/29
BDY	497					
LPX	427	24.48	25.02	24.19	24.23	24.51
ELAB	449					
SLAB	298					
FOX	363	29.14	29.14	29.43	29.5	29.66
JCOM	355	29.24	28.78	30.86	30.56	30.15
SOHU	645					
EBAY	264	95.91	95.25	98.67	98.87	97.63
KFT	440	32.35	32.82	33.25	33.35	33.31
NOOF	1,436	8.09	7.94	8.04	8	7.99
VZ	276	38.88	39	39.4	39.38	39.1
SNDK	408					

Symbol	Share #	11/1	11/2	11/3	11/4	11/5
BDY	497					
LPX	427	24.64	23.94	24.12	24.44	24.7
ELAB	449					
SLAB	298					
FOX	363	29.3	29.35	29.66	30.1	29.84
JCOM	355	30.85	31.38	31.72	31.78	32.23
SOHU	645					
EBAY	264	99.28	100.66	99.25	100.87	99.68
KFT	440	33.68	33.45	33.43	34.52	34.74
NOOF	1,436	7.95	8.01	8.23	8.46	8.64
VZ	276	39.98	40	40.56	41.08	41.01
SNDK	408					

Symbol	Share #	11/8	11/9	11/10	11/11
BDY	497				
LPX	427	24.54	25.02	25.24	25.03
ELAB	449				
SLAB	298				
FOX	363	29.69	29.47	29.36	29.4
JCOM	355	32.62	32	31.44	32.46
SOHU	645				
EBAY	264	103.69	104.47	103.84	107.84
KFT	440	34.48	34.37	34.85	35
NOOF	1,436	8.56	8.12	8.34	8.54
VZ	276	41.1	41.27	41.17	41.64
SNDK	408				