Stock Market Simulation and Analysis

An Interactive Qualifying Project Report: submitted to the Faculty of
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Abstract

A seven-week stock market simulation was performed using different techniques with the aid of online and text resources. The specific techniques used in this project were long-term growth investing, short-term income investing, and selling short. This seven-week simulation and trading experience gave us some initial training to use those techniques and tools in the future as we gain wealth and look to invest in the stock market.

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1. Introduction & History

1.1   Goals

In the following report we discuss different strategies of trading on the stock market and analyzed the stock market using fundamental and technical analysis. A portfolio of ten different stocks with approximately $10,000 invested in each stock was created for each analysis and its performance assessed each week. Along with the two analyses another method called selling short would be tested with five different stocks. The goal of the project was to gain valuable experience on analyzing stocks and a better perspective on the stock market as a whole to help our future in investing.

1.2   The History of the Stock Market

The very beginning of the stock market is back in 1602, when the Dutch East India Company became the first company to offer shares for investors to buy over the Amsterdam Stock Exchange. They did it with the joint stock company model. During European colonialism the companies involved raised a large portion of their capital by selling shares. It was also a safe way, because it allowed diversification of their funds so it wasn't all invested in a single risky voyage. The shareholders then either earned dividends for successful trades, or shared in the losses. The early settlements were also funded this way, for example the Virginia Company used this for Jamestown. The Amsterdam Stock Exchange was the first exchange to use continuous trading in the early 17th century. In the beginning of the Revolutionary War the government sold bonds in order to finance the war effort.   In the beginning of America the companies sold stock

over here. The American stock exchange was first founded in Philadelphia in 1790. Two years later 24 men founded the New York Stock Exchange in order to control the securities market. The people from New York founded the New York Stock and Exchange Board after observing the way Philadelphia ran its stock market. The Industrial Revolution which occurred near the end of the 19th century, and the beginning of the 20th saw a large boom in the stock market, due to the success of the industrial corporations. On October 29, 1929, Black Thursday, the stock market crashed to record lows, which was the beginning of the Great Depression which lasted until World War 2. Due to this the government imposed regulations on the stock market, to try to safeguard the economy. The two largest government legislations were the Securities Act of 1933 and the Securities Act of 1934. The Securities Act of 1933 was also called the Truth in Securities act. It requires everyone offering stocks to be registered. The registration forms require a description of your business and properties, a description of the securities for sale, information about the management of the companies, and financial statements. These are all available through EDGAR to any investor interested in a company. The Securities Exchange Act of 1934 is also known as the Exchange Act. This act regulated the trading of stock on the secondary market by people unrelated to the issuer. It regulates that there be specialists to direct the trading to make it more fluid. Also, it included anti-fraud provisions, making insider trading, price fixing, and fake company sakes. The stock market did not recover until the beginning of World War 2. NASDAQ began in 1971, as the first electronic stock market. There was another crash of the market in October 19, 1987, which was the worst since Black Thursday. This one was named Black Monday, after the original crash. The Dow Jones Industrial Average fell 22.6%, as seen in Figure 1.1 [7].
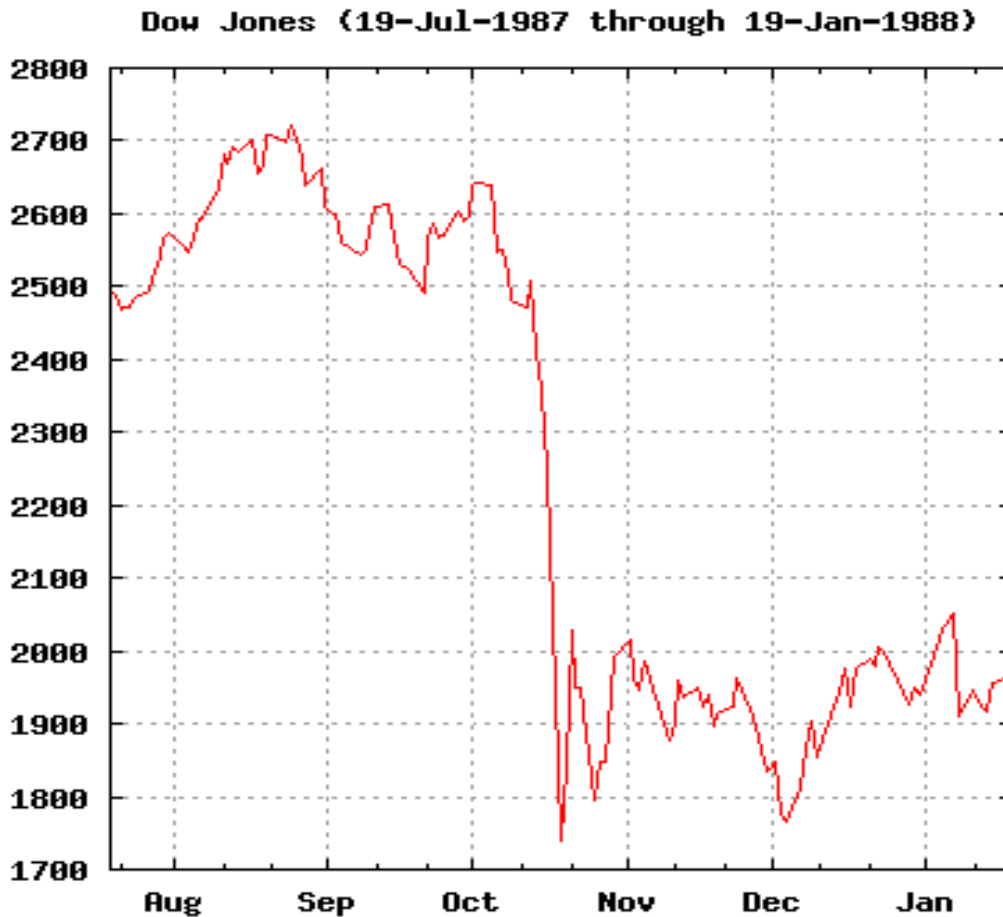
Figure 1.1 – Dow Jones Industrial Average (Jul 1987 – Jan 1988) [7].

This crash also happened around the world, with Australia falling 41.8%, Canada 22.5%, Hong Kong 45.8%, and the United Kingdom 26.4%. There is still no definite cause of this crash, nothing significant event happened that day which might have brought on the crash. After this the government stepped in again and enacted several more regulations to prevent it from happening again. [7].

1.3   How Does the Stock Market Work?

The stock market is made up of companies offering stock, and the investors who buy them. The companies offer part ownership in order to raise money to finance their operations.

The companies sell these stocks to the people through stock brokers, the Internet, or in one of the stock floors. The NYSE, AMEX, and NASDAQ are the 3 American stock exchanges, which each handle thousands of companies' stocks. As the demand for individual stocks rises and falls, the price per share also fluctuates. During the course of a day the price goes up and down, then at closing it is set at the current price. The majority of people deal through a stock broker, who is a professional whose job is to buy and sell the stocks their client tells them to.   These professionals generally take a percent of the value of the stock traded as their payment. Recently, it has been becoming more popular to buy and sell directly over the Internet, which is instant and requires no middleman. Each individual can get an account, and monitor the current prices of all stocks from their computer.   There are also those who sell and buy on the floor. They spend their days dealing with the auctioneers personally. The Companies start out private, financing themselves, then they go public at their IPO, or Initial Public Offering. This is where the stocks are bought directly from the company itself. The companies need to get listed on a market, according to the criteria set forth by the market [7].

1.4   What is a Stock?

Stock is capitol gained by selling shares in a company. These shares are fractions of ownership in the company itself. The stockholders each have a partial control over the company, but there are so many shares available that it would be impossible to have them each involved in the daily business of the company. The stockholders each vote on a board to represent them, with each share equaling one vote. Generally, those with positions in the company have the majority of the shares, and have to main say in who gets elected. This board then oversees the actual running of the company. There is only a set number of stocks, which is why after the

initial public offering, people need to buy and sell shares to each other, over the stock market. This is handled either through a broker, over electronic means, or directly to an auctioneer on the trade floor [7].

1.5   The New York Stock Exchange (NYSE)

This is the largest stock exchange in terms of dollar value traded. Its main index, the Dow Jones Industrial Average, is a main indicator of the current economic strength of America. This stock exchange functions with the continuous auction format. The people interested in trading are out on the floor with NYSE employees who act as the auctioneers. There are only a set amount of floor seats, which started at 533, and are currently at 1366, the amount set in 1953. These seats are sold, and have gone for millions of dollars. The exchange also charges the companies which sell on their floor a yearly fee. About 50% of the trades are now done electronically. It was founded back in 1792, outside 68 Wall Street, by 24 men who signed the Buttonwood Agreement. On March 8, 1817 renamed itself the New York Stock and Exchange Board, and drafted a constitution. Its first president was Anthony Stockholm. In July of 1914 the stock exchange was closed for the beginning of World War 1, and then reopened in November so that it could begin selling bonds in order to help the government raise money to finance the war effort. In September 16, 1920 there was a bomb set off outside which killed 33 people; the building still shows marks from that explosion today. The NYSE registered with the US Securities and Exchange Commission on October 1, 1934, it had a president and 33 members on its board of directors. In 1971 it formed the non-profit corporation and reduced the number of board members to 25. Black Monday occurred on October 19, 1987, and saw the Dow Jones Industrial Average drop 22.6%. In October 27, 1997 there was a 554.26 drop in the DJIA which

caused them to create a "circuit breaker" rule. This rule is that if the DJIA drops 10% trading will be closed for an hour, 20% closes it for 2 hours, and 30% closes it for the day. This is done so that people can think out their positions more before acting rashly and possibly furthering the crash [7].

1.6   The American Stock Exchange (AMEX)

This started back in colonial times, with people standing outside on the curb selling stocks and securities to traders who would yell. In those times, it was called the Curb Market, because that is literally where it took place. Eventually they formed hand signals in order to cut through the noise, which are still used today. It then moved indoors in 1921 to Trinity Place in New York City. It played a large part in the booming economy of the late 1800's, and then fell into hard times during the depression, due to the market as well as poor leadership. Eventually in the 1950's it was finally named, AMEX. It now focuses on options instead of stocks, but continues to sell both. The companies listed tend to be smaller than the ones NASDAQ and NYSE trade, due to more liberal policies. In the middle of the 90s it tried to lower the standards even more, as part of a move to initiate an Emerging Company Marketplace, but it was not successful. The exchange itself is a mutual organization, which is owned by the members. In 1998 it merged with NASDAQ to create the NASDAQ-Amex Market Group, with NASD as the parent company. In 2004 AMEX bought out control of the market due to tensions between the two organizations [7].

1.7   NASDAQ

NASDAQ stands for "National Association of Securities Dealers Automated Quotations." It was founded back in 1971, as the first electronic stock market. The physical building is at Times Square in New York City. It has grown to list 3,300 companies, which is the largest amount of any other stock market. It is home to mainly technological companies, but also retail, communications, media, transportation, and financial companies. Originally it was just an electronic bulletin board, and most of the trading was done through the telephone. After the 1987 crash it then added the Small Order Execution System, which allowed for trading electronically. The market peaked on March 10, 2000 during the height of the dot-com era, and it is still at only half of that peak [7].

Figure 1.2 – NASDAQ Average Index (1994-2005) [7].

2. Stock Selections

2.1 Technical vs. Fundamental Analysis

Technical and Fundamental Analysis are as different as the Firm-Foundation Theory is from the Castles-in-the-Air Theory because while Technical Analysis is used by those who support the latter, Fundamental Analysis is used by those who support the former. Technical Analysis consists of the following of charts to predict where the market will go and, "Most chartists believe that the market is only 10 percent logical and 90 percent psychological" [1]. While the Fundamental analysts don't believe in studying the past or using charts because the, "Fundamental analysts take the opposite tack, believing the market is 90 percent logical and only 10 percent psychological" [1].

2.2 Technical Analysis

When analyzing stocks using technical analysis there are two principles that the follower must take into the account. "The first principle of technical analysis is that all information about earnings, dividends, and the future performance of a company is automatically reflected in the company's past market prices" [1]. "The second principle is that prices tend to move in trends: A stock that is rising tends to keep on rising, whereas a stock at rest tends to remain at rest" [1]. The ability to find and read the charts of a stock and analyze it is paramount to the implementation of the technical analysis of the stock market. Technical analysis concerns the study of charts and followers of this type of stock analysis are known as, chartists, and do not believe in information such as dividends or earnings as the fundamentalist does because they feel

that it distracts from the ability to correctly predict what the future of the stock will do. A chart showing the past market prices and the trade volumes of a stock in the past is all the technical analysis would need to analyze where the stock will go in the future. It is important to know that as a stock is rising it is believed that it will keep rising because of the momentum of a stock. Once a stock has an uptrend it will then slightly fall and go up again forming what looks like a shoulder then fall slightly and go up a little higher than the should fall and go up again forming the next shoulder, and then the technical analysis looks for the stock to fall below the line that the valleys have lined up on, called a neckline. If the stock falls below the neckline it will quickly be sold because it will usually result in a downtrend similar to the uptrend occurring before.

There are many indicators used in technical analysis to help investors determine whether a stock is a good buy or sell. Those that will be used in our technical analysis are the Moving Average Convergence/Divergence (MACD), Money Flow Index (MFI), Price Rate of Change (ROC), and Relative Strength Index (RSI).

The MACD indicates the relationship between a longer term moving average and a short term moving average. It is calculated by taking the difference of the 26-day exponential moving average (EMA) and 12-day EMA. The MACD is then plotted against a 9-day EMA called a signal line. This functions as a buy or sell trigger so that when the MACD falls below the signal line it shows a sell signal, and when is above the signal line it expresses a buy signal. Also when the MACD diverges far away from the signal line it means there is likely going to be a change in the current trend [6].

The MFI shows the strength between the cash flow in and out of the stock and a divergence from the current price trend is an indicator that there may be a reversal in the trend.

It is often calculated on a 14-day period on a scale from 0-100. A stock with a reading of over 80 can be considered overbought and a candidate for selling. Conversely, a reading of 20 or lower is an indicator that the stock is oversold and could be considered a good investment [6].

Like the MFI, the RSI is rated on a scale from 0-100 and the same buy and sell indicators of 80 and above for overbought and 20 and below for oversold are used. It compares recent gains to recent losses to attempt to determine the conditions for a stock being overbought or oversold [6].

The ROC measures the change of the current price to the price in the past to acquire a percentage for how fast the price of the stock is rising or falling. This lets an investor know what the current price momentum of the stock is. A positive ROC value indicates that the price is increasing while a negative shows a decreasing trading price [6].

2.3   Fundamental Analysis

The fundamental analyst believes in much different ways of analyzing stocks than the technical analyst. "The technician is interested only in the record of the stock's price, whereas the fundamentalist's primary concern is with what a stock is really worth" [1]. The fundamental analysis involves using information about the prospective stock to find whether the growth will continue or not. "In estimating the firm-foundation value of a security, the fundamentalist's most important job is to estimate the firm's future stream of earnings and dividends. To do this, he or she must estimate the firm's sales level, operating costs, corporate tax rates, depreciation policies, and the sources and costs of its capital requirements" [1]. Once the analyst uses this information to determine the intrinsic value, if that value is shown to be below the market value than the stock should be bought because the stock should correct itself resulting in gains.

2.4   Definitions

52-week high: Is the highest price a stock has obtained in the last 52 weeks. Prices fall and rise constantly and it can be very useful for an investor to know how the current trading price relates to the stock in the past year. This way the public knows whether the current price is unusually high, and if they should perform further research as to why this is the case [3].

52-week low: Like the 52 week high, this is the lowest price a stock has been to over the last year [3].

Day Last: Refers to how much a particular stock traded at closing for the day [3].

Net change: Is the value of the net change in a share from opening to close. It gives investors and traders quick information as to how stocks performed on a particular day [3].

Moving average: The market price tends to regress towards the average of a certain time period known as the moving average. This moving average can be calculated over any time period, but usually it is a 15 or 20-year average for long-term investments and 50 or 200-day average for traders looking to ride a recent price trend. The average is calculated by taking the average price of the stock in the defined time period [2].

Stock symbol: This is a short abbreviation for a company, usually 2 or 3 letters long. Whenever a trader wants a stock quote he must look it up using the stock symbol rather than by name of the

company as they are listed by symbol rather than by name. This can be confusing at times because the symbol does not always resemble an abbreviation of the company name. For example, Altria Group Inc., which is a worldwide company that engages in the production and sale of tobacco and packaged foods, has the symbol MO. Symbol lookups have become easier in recent times with the ability to perform lookups online [3].

Shareholder: When investors buy shares in a company, they become shareholder and a part-owner of that company [3].

Dividends: Once a year, the company board decides how to spend the earnings received in the past fiscal year. They can decide to give shareholders part of the money, which is also called dividends, since they are entitled to a share of the profits. Sometimes this does not happen and instead the company will reinvest the earnings to allow for further growth. The company can also buy back some of its shares which will reduce the amount of shares available on the market thus driving up the price of the stock [3].

Volume: This is the actual amount of shares being traded in any one company. Stock market investors should also pay attention to the volume of any shares they own. Day-to-day it does not necessarily matter but if it's unusually high one day then one should take notice because it means something is happening with that particular stock whether it be negative or positive [3].

The Price/Earnings (P/E) ratio: is also important in the stock market because it shows how much each share costs in relation to the earnings of each share. A high P/E ratio means the stock is

expensive and the investor is paying a higher multiple of the earnings per share while a lower P/E ratio means the stock is cheap. Generally, for large-cap or income stocks the P/E should be between 10 and 20 while growth stocks should carry a P/E between 30 and 40 [6].

Trailing P/E: This is the P/E ratio of the last four quarters [6].

Forward P/E: This is the estimated P/E ratio for the next four quarters [6].

Bull market: This is a period when stock prices are rising higher than the historical average. This usually occurs due to an economic recovery, economic boom, or due to investor psychology. The largest bull market was during the economic boom of the 1990s [6].

Bear market: This is the opposite of a bull market, one where stock prices fall faster than historical averages. Usually this is accompanied by pessimism. This often happens when the market is in an economic regression when unemployment is high, or while there is rapid inflation. If it occurs immediately after a bull market it is called a correction. The stock market crash which brought about the Great Depression in 1930 was the largest bear market yet [6].

PSR: This is the price to sales ratio. It is calculated by taking the capitol of the company divided over the sales of the last year. A lot number is a better investment, because the investor is paying less per sale. This is usually only used for unprofitable companies because they do not have a P/E ratio [6].

Net revenue: This is the total values of all the sales a company has made, minus any costs the business had to incur to make those sales [6].

Total revenue: This is the amount of money obtained for sales and services, as well as any assets gained or anything else which would increase the total equity of the company. This is calculated before any costs are deducted. This can be reported differently based upon the timing used. Some companies consider revenue gained as soon as they perform a service, or sell an item, and some wait until they actually receive the money. Depending on the method of accounting there are different guidelines [6].

Gross profit: This is the total revenue for all the products sold, minus the costs involved with actually obtaining them. This does not subtract any overhead, such as taxation, insurance, payroll, or anything else. It just takes into account the cost to purchase the product if it is retail, or the cost to manufacture. This is a good indicator of how well a small business is doing because it only involves the actual product [6].

Total assets: The sum of all of the assets owned by a company. This includes anything of economic value, especially if it can be turned into cash [6].

Total liabilities: The net sum of all the money the company owes [6].

Net stockholder's equity: The total assets owned by a company, minus their total liabilities. Due to the fact that companies generally grow and earn more profit over time, the actual value of a

company is generally greater than the equity suggests [6].

Net income: This is the total revenue minus all of the costs. It is often called the bottom line, since it is the final determiner of how much profit or loss a company made [6].

S&P 500: This is a list of 500 US companies, which is maintained by Standard & Poor's. These companies are all publicly owned, and traded on large stock exchanges such as NASDAQ and the NYSE. The value of these stocks is known as the S&P 500 Index and is one of the main indicators of the current US stock market, behind the Dow Jones Industrial Average. The companies listed have been selected to be representative of the entire US economy [6].

3. Trading Strategies and Theories

3.1   Selling Short

Selling short is a very risky way to make money in the stock market on a stock that is failing in price. It consists of the buyer buying stocks from a broker on margin, which means the buyer opens a margin account with their broker in which they put an initial investment in. The buyer is then usually allowed to invest double what is in the account on margin, meaning that if there was an initial amount of 5000 dollars placed in the account, the buyer would be able to make an investment of 10000 dollars on margin. How selling short works is that the buyer invests into the stock without using their own money by using the loaned money. Then if the price falls on the stock they buy back the amount of stock that was borrowed from the loan at a lower price giving them a profit of whatever the difference between the loaned amount and the buyback amount of the stock was. The reason that it is so extremely risky is because if a person sells short there is no limit on how high the stock can increase therefore the investors loss could be more than the initial investment. Another reason why selling short is so risky is because in a way you are investing against the movement of the market because due to inflation the market is always increasing, and along with this there are many problems that can occur with selling short. The first of which is if many investors who were selling short on the same stock were wrong and it is increasing and all go to sell the stock to stop their losses, it can cause what is known as a, "short squeeze" which can cause the stock to climb even further. While you may determine whether a stock is overvalued or not it can be shown that even if a stock is deemed overvalued it may be many weeks or even months before its overvalue is corrected which wouldn't help the

short selling investor who invests to early. As discussed selling short is an extremely risky process, but can yield up to double the money originally invested if the company goes bankrupt [1].

3.2   The Filter System

The filter system is one that monitors stocks and deems them fit to buy and in an uptrend when they have moved up at least 5 percent from a low. Once the stock is purchased it is to be held until the stock has fallen 5 percent from the high, at which point it to be sold short or just sold, until it has moved up at least 5 percent from a low [1].

3.3   The Dow Theory

The Dow Theory is one involving when to buy and when to sell. The two most important terms in this theory are support, and resistance. When the market reaches a peak and starts to fall, the peak where its high was reached is now known as a resistance point. When the market starts to rise back to the resistance point, the lowest point of the valley just created is known as the support. As the market nears the resistance point the "test" will occur determining whether to sell or not. If the market rises past the resistance area the market will probably continue to rise, but if the market falls beyond the support area the market will most likely continue to fall and the stock should be sold [1].

3.4   The Relative-Strength System

The Relative-Strength system has everything to do with the performance of the general market indices. The system employs following how stocks are performing against the general

market indices and making decisions of whether to buy or sell short based on whether the stock in question has outperformed or underperformed [1].

3.5   Price-Volume Systems

The Price-Volume system employs the buying of a stock when the stock is rising on an increasing or large volume because it is believed that it will keep rising, and selling when a stock is dropping on a large volume because it is believed that it will keep falling [1].

3.6   The Hemline Indicator

One such indicator of how the market as a whole is performing that on the surface seems ridiculous but does has some correlation with how the market has performed is known as the hemline indicator and it is as the name suggests related to the hemlines on women's dresses. If the hemline is high the market is supposedly a bull market and doing well whereas if the dress hemline is long then the market is supposedly a bear market and doing poorly. As ridiculous as the indicator sounds there have been direct correlations with the hemline and the progression of the market dating back to the 1920's, although not a very reliable resource for future investments [1].

3.7   The Firm-Foundation Theory

The Firm-Foundation Theory is a theory stating that every stock has an intrinsic value that is found through the conditions available and the predicted future improvement of the company. Once the intrinsic value has been calculated it is then compared to the market value

and if below the market value the theory states that the stock should be bought because the fluctuation will be corrected. "Thanks to a very influential book, Benjamin Graham and David Dodd's *Security Analysis*, a whole generation of Wall Street security analysts was converted to the fold. Sound investment management, the practicing analysts learned, simply consisted of buying securities whose prices were temporarily below intrinsic value and selling ones whose prices were temporarily too high" [1].

3.8   The Castles-in-the-Air Theory

The theory came to the forefront in 1936 when it was backed by a successful inventor and economist named John Maynard Keynes. "It was his opinion that professional investors prefer to devote their energies not to estimating intrinsic values, but rather to analyzing how the crowd of investors is likely to behave in the future and how during periods of optimism they tend to build their hopes into castles in the air" [1]. Keynes claimed that while many others were spending countless hours using the firm-foundation theory he sat at his bed for a half an hour each morning and was able to amass millions of pounds. The Castles-in-the-Air theory is mainly about picking a stock in the anticipation that it can be sold for a higher price to others [1].

4. Simulations

4.1   Growth Investing

Fundamental analysis has been proven the best analysis for finding stocks that will grow and perform long term, and is a type of analysis very popular among a large percentage of professional brokers. Those who have used the art of fundamental analysis to amass great wealth are investors like billionaire Warren Buffet who have proven it as a powerful tool in the picking of stocks to invest. In this simulation there will be about 100,000 dollars allotted to spent somewhat evenly between ten stocks chosen and analyzed using fundamental analysis. The purchasing of each stock was made only after ample analysis of many different aspects of each promising growth stocks' company information. The first two pieces of data analyzed and one of the more important pieces of data analyzed was not only the price to earnings ratio (P/E), also known as trailing P/E, but the forward P/E because it is extremely useful to know not only the earnings per market price in the last year but the expected earnings per market price in the future. Another extremely useful statistic used in choosing the potential companies to invest in was the PSR or price to sales ratio because if the PSR is much higher than the competition that means they are not selling enough to justify their price while their competition is selling a similar product more efficiently and is probably not a worthy stock for purchasing. The balance sheet, income statement, and cash flow should all be examined and are central pieces of information to the fundamental analysis of stocks. If net income and net sales are going up by more than 10 percent the stock will having a great chance of success. Along with that data, a company's net worth needs to be determined and last but certainly not least the average growth rate over the

next five years is a key piece of information that needs to be determined, and reasonable because if a company is not expected to grow that much higher than the average, it isn't an ideal growth stock and shouldn't be chosen for the portfolio. If all of the pieces of data are found to be reasonably good the chance of the stock being a success will be substantially higher than it being a failure.

Below is an example of an income statement. The current year and previous year's total revenue and gross profit can be compared. The total revenue for the current year and the gross profit for this company compare very favorably to the previous year, and values such as those shown in the income statement below comply with those that would be good in the growth portfolio because it is showing that the company is in an upward trend of revenue. A large mistake that was made with a prevalent example being in the 1990s during the dot com craze people were investing in any company that had anything to do with the internet but they weren't researching the companies they were placing their money in and some companies that earned millions in public earnings from the stock market weren't even making a profit.

Income Statement

View: **Annual Data | Quarterly Data**		All numbers in thousands	
PERIOD ENDING	31-Dec-05	31-Dec-04	31-Dec-03
Total Revenue	3,810,449	2,776,749	2,222,466
Cost of Revenue	2,557,291	2,111,185	1,738,598
Gross Profit	1,253,158	665,564	483,868
Operating Expenses			
Research Development	-	-	-
Selling General and Administrative	309,306	271,175	237,780
Non Recurring	-	-	2,992
Others	261,851	280,397	242,152
Total Operating Expenses	-	-	-

Figure 4.1 - Part of the Income Statement showing the total revenue and gross profit of a company [5].

The last line of the Income Statement shown below displays the net income of the company which is a piece of data that should not be taken lightly because it shows whether the company's total revenue is actually increasing from last year. Even if a company has a higher net revenue and gross profit it does not tell the whole storing and costs could be so high the company is not even turning a positive net income so that data should be examined along with the two pieces shown previously.

Operating Income or Loss	682,001	113,992	944
Income from Continuing Operations			
Total Other Income/Expenses Net	-	-	-
Earnings Before Interest And Taxes	682,001	113,992	944
Interest Expense	27,317	31,429	34,451
Income Before Tax	654,684	82,563	(33,507)
Income Tax Expense	64,339	(32,646)	(20,941)
Minority Interest	(9,484)	-	-
Net Income From Continuing Ops	580,861	115,209	(12,566)
Non-recurring Events			
Discontinued Operations	-	-	-
Extraordinary Items	-	-	-
Effect Of Accounting Changes	-	83,373	4,768
Other Items	-	-	-
Net Income	580,861	198,582	(7,798)
Preferred Stock And Other Adjustments	-	-	-
Net Income Applicable To Common Shares	$580,861	$198,582	($7,798)

Figure 4.2 – The other half of the Income Statement showing the net income of the company [5].

The next piece of company data that needs to be examined before any stocks are to be purchased is the balance statement. The balance statement shows the total assets the total liabilities, and the total stockholder's equity. Below shows the total assets of a company and these are the types of values consistent with a healthy company because there is a steady increase in the assets over the years. If a company continued to stay at the same value or fall lower each year it might be a

cause for concern. No one piece of a data should be a reason to not invest in a company because very few have all the data in line with what is desired, but it lessens the leash the company is on with you as the investor, not much other data can be off.

Balance Sheet

PERIOD ENDING	31-Dec-05	31-Dec-04	31-Dec-03
View: **Annual Data	Quarterly Data**		All numbers in thousands	
Assets			
Current Assets			
Cash And Cash Equivalents	340,640	6,422	6,513
Short Term Investments	-	-	-
Net Receivables	452,347	302,335	327,567
Inventory	140,976	121,902	103,358
Other Current Assets	64,537	39,510	33,402
Total Current Assets	**998,500**	**470,169**	**470,840**
Long Term Investments	52,261	47,684	84,878
Property Plant and Equipment	3,534,763	3,182,580	2,686,458
Goodwill	-	-	-
Intangible Assets	-	-	375,049
Accumulated Amortization	-	-	-
Other Assets	134,900	140,170	292,663
Deferred Long Term Asset Charges	367,228	355,008	409,090
Total Assets	**5,087,652**	**4,195,611**	**4,318,978**
Liabilities			
Current Liabilities			
Accounts Payable	799,293	363,770	702,509
Short/Current Long Term Debt	4,629	8,945	122,090
Other Current Liabilities	-	332,770	-

Figure 4.3 - Part of the Balance Sheet showing the total assets and some of the total liabilities data [5].

The second part of the balance sheet shown below displays the total liabilities and the total stockholder equity. The total stockholder equity is more or less how the company's remaining assets are financed. As shown below there is a positive trend from the previous years which is a good sign. One positive piece about the equity is there is a large increase in the retained earnings

which there was a deficit of the previous year. As shown the balance statement is a good meter of where the company's money is and can shed light on their current financial situation.

Total Current Liabilities	803,922	705,485	824,599
Long Term Debt	438,367	425,760	441,912
Other Liabilities	2,699,220	2,403,984	2,700,157
Deferred Long Term Liability Charges	27,343	191,361	61,673
Minority Interest	93,444	-	-
Negative Goodwill	-	-	-
Total Liabilities	**4,062,296**	**3,726,590**	**4,028,341**
Stockholders' Equity			
Misc Stocks Options Warrants	-	-	-
Redeemable Preferred Stock	-	-	-
Preferred Stock	-	-	-
Common Stock	925	913	913
Retained Earnings	252,109	(277,406)	(425,470)
Treasury Stock	-	(7,054)	(15,880)
Capital Surplus	884,241	846,644	833,675
Other Stockholder Equity	(111,919)	(94,076)	(102,601)
Total Stockholder Equity	**1,025,356**	**469,021**	**290,637**
Net Tangible Assets	**$1,025,356**	**$469,021**	**($84,412)**

Figure 4.4 - The other part of the balance statement showing the total liabilities and total stockholder equity [5].

The last piece of financial data that must be looked at in order to properly evaluate a company is the cash flow document. The shows one of the most important figures of the data, which is net income. If a company is not making money and is not showing an upward trend it is probably not a company that a buyer wants to put his money into. The document below is an example cash flow and as is shown in this case the net income is very promising and shows a substantial increase on the previous years value, which is the other piece that must be noted. Not only should the company be making a positive net income but the net income should be around the vicinity of 10% higher than the previous years to show that the company is indeed growing and profiting more, because in a growth stock portfolio it is of the utmost importance that the companies considered are growing in productivity.

Cash Flow

View: **Annual Data** | Quarterly Data   All numbers in thousands

PERIOD ENDING	31-Dec-05	31-Dec-04	31-Dec-03
Net Income	580,861	198,582	(7,798)
Operating Activities, Cash Flows Provided By or Used In			
Depreciation	266,334	285,304	249,165
Adjustments To Net Income	(336,835)	(145,658)	(37,800)
Changes In Accounts Receivables	(156,900)	9,041	148,745
Changes In Liabilities	99,136	13,759	1,919
Changes In Inventories	(13,361)	(18,544)	27,044
Changes In Other Operating Activities	(30,149)	15,607	(148)
Total Cash Flow From Operating Activities	409,086	358,091	381,127
Investing Activities, Cash Flows Provided By or Used In			
Capital Expenditures	(523,467)	(410,611)	(290,652)
Investments	3,996	(4,303)	-
Other Cashflows from Investing Activities	445,058	14,372	86,038
Total Cash Flows From Investing Activities	(74,413)	(400,542)	(204,614)
Financing Activities, Cash Flows Provided By or Used In			
Dividends Paid	(51,321)	(50,471)	(45,613)
Sale Purchase of Stock	39,150	14,864	191,232
Net Borrowings	11,716	(112,951)	(136,218)
Other Cash Flows from Financing Activities	-	190,918	(190,918)
Total Cash Flows From Financing Activities	(455)	42,360	(181,517)
Effect Of Exchange Rate Changes	-	-	-
Change In Cash and Cash Equivalents	$334,218	($91)	($5,004)

Figure 4.5 - The Cash Flow document showing the net income of the company [5].

4.1.1 Company Profiles and Data

UBS AG

UBS AG is a company specializing in the provision of financial services throughout the world. The company is not part of an index, and it belongs to the financial sector, and the foreign money center banks industry. The company was founded in Zurich, Switzerland in 1862, and

today employs 69,569 and provides wealth and asset management, investment banking, and securities businesses. The wealth management business offers not only estate planning, and corporate finance advice, but banking services as well. The asset management allows traditional and alternative investment solutions, to not only financial intermediaries, but also institutional investors. The banking and securities business involves equity, equity-linked, and equity derivative products to primary and secondary markets. Along with all of these services there is banking and securities services available for foundations, corporations, institutional investors, public entities, foundations, and worldwide institutions.

The first stock chosen for our growth investing portfolio is UBS AG a company responsible for giving worldwide financial services. There are many reasons for this stock being chosen as an ideal company for a growth portfolio. The first statistical ratios examined were the P/E and the forward P/E, and they were a reasonable 10.818, and 12.38 respectively. The PSR was found to be 2.58 in the last twelve months and although somewhat of a higher than desired number alone compared to the industry at a whole which has a PSR of 3.34 it is a reasonable number. The Income Statement numbers were extremely promising with the company earning a net income of $10,664,846 earned in the 31-Dec-05 quarter whereas the previous year they had earned $7,794,230 during the quarter meaning there was a 36.8% gain which is more than acceptable. When looking at the Balance Sheet the total stockholder equity decreased from $46,553,245, to $39,487,069, but the net tangible assets increased considerably, from $20,121,100, to $29,235,011. There were no values that were cause for concern, and although the total equity was down it was not because of a drop in any of the meaningful areas such as retained earnings or capital stock. The estimated growth percentage of the company for the next

5 years is a very respectable 17.1%. Although not perfect there is more than enough data to support the probable success of this as an ideal growth stock [5].

Telefonica SA

Telefonica SA is a telecommunications provider for Spanish and Portuguese speaking markets. It is in 40 countries, and has 100 million clients, making it is the sixth largest telecommunication company. It is focused in Latin America. It has almost 5 billion shares held by 1.7 million stockholders. It has 20 subdivisions which are all listed on various stock markets.

The next stock chosen for our growth investment portfolio was Telefonica SA a company responsible for telecommunications in Latin America, and Spain. The P/E ratio, and the forward P/E ratio were a very good 13.90 and 11.31 respectively meaning that the ration showing that the price to earnings were predicted to be even better in the future twelve months. The PSR was a respectable 1.48, which was just a hair underneath the industry average of 1.49. The Income Statement was very good with a total revenue of $42,584,138 from the previous years $36,520,289 a 16.6% increase, and a net income of $3,517,437 which was an increase over the previous years total of $3,372,911 a 4.2% increase. The Balance Sheet was respectable with an increase in total assets from $79,494,939 to $86,715,547, an increase in total liabilities from $57,782,166 to $64,455,921, and a total stockholders equity increase of 2.5% from $21,712,773 to $22,259,627. The next five-year growth projection is extremely promising with a 16.2% projection, which is significantly above the S&P 500 average of 10.66% [5].

Banco Bilbao Arg

Banco Bilbao Arg is a banking company, which operates worldwide. It provides retail banking, asset management, private banking, and wholesale banking services. It manages mutual funds, pensions, and insurance brokerage. It offers these to individuals to medium sized entities. It also engages in corporate banking, institutional banking, and transaction services to corporate, government, and nongovernmental organizations.

The Banco Bilbao Vizcaya Argentina is responsible for retail banking, asset management, and private and wholesale banking throughout the world. The P/E and forward P/E ratios are very good at 13.75 and 10.68 respectively. The PSR is the company's only real hiccup at 3.81 while the industry average is 3.18, but as an investor it is important to understand that all of the numbers will never be exactly what is desired and as will be shown the income and balance statement values are excellent so I was willing to look past the poor PSR on this investment. The Income Statement was extremely good with a total revenue increase of 6.3% from $22,019,504 to $23,405,323, and a remarkable 76.5% increase in net income from $2,393,239 to $4,223,286. The Balance Sheet was as impressive as the Income Statement with an increase in the company's assets from $369,123,854 to $431,760,584, an increase in liabilities from $344,533,438 to $399,744,567, and an extremely impressive 30.2% increase in the stockholders equity from $24,590,416 to $32,016,017. The estimated growth percentage for the company is a very good 15.6% when the average for the S&P 500 as previously stated is 10.66% [5].

France Telecom AD

France Telecom AD engages in fixed and mobile communications, Internet and multimedia, and data transmission with individuals, businesses, and other telecommunications

operators. It has 4 different branches, personal, home, and enterprise communication, and directories. The home communication provides telephones, Internet services, and operators. The enterprise communications section services corporations and offers fixed-line to mobile convergent, mobility solutions, integration services, consulting, project management, and critical application management. Directories sell advertising space, marketing databases, create Internet sites, and distribute directories.

France Telecom is a company responsible for telecommunications all over the world. They were an ideal growth stock because although not a very good net income percentage the rest of the necessary values of a good growth stock are exhibited. The P/E and forward P/E ratio are a very good 8.32 and 9.73 respectively. The PSR of this stock was very good with an ideal sub-1 value of 0.97, while the average industry PSR is 1.49. The Income Statement was respectable with a good 11.1% increase in the total revenue from $57,914,140 to $64,341,011, but as discussed earlier there was a 65.4% drop in the net income from $6,677,813 to $4,037,260. The Balance Sheet was extremely good though and made up for the somewhat poor Income Statement with total assets increasing from $98,827,357 to $114,737,854, and total liabilities remarkably decreasing from $116,041,748 to $109,240,686. There was a very large increase in the stockholders equity from -$17,214,391 to $5,497,168. The prediction for the next five years of growth in the company is 15.6%, which solidified France Telecom as a company that was worthy of an investment [5].

Southern Copper Corporation

Southern Copper Corporation is a mining company operating in Mexico and Peru. It mines and produces copper, molybdenum, zinc, silver, gold, lead, and sulfuric acid. It is based in Arizona, and is a subsidiary of Americas Mining Corporation.

Southern Copper Corporation is involved in the mining and processing of copper, molybdenum, zinc, silver, gold, and lead. Their only blemish was they had a relatively high PSR as will be shown but it was not that far above the industry average and their Income Statement, and Balance Sheet values are excellent. The P/E and forward P/E ratios are 8.40 and 6.52 respectively. The PSR was a somewhat high 2.94 but compared to the industry of 2.05 it was not too bad. The Income Statement was extremely impressive with the total revenue increased an amazing 140% from $1,715,919 to $4,112,629, and the net income increased 134.6% from $596,773 to $1,400,148. The Balance Sheet was equally impressive with total assets increasing from $2,597,130 to $5,687,574, the liabilities increasing from $876,231 to $2,361,497, and the total stockholders equity increasing 93.3% from $1,720,899 to $3,326,077. The predicted growth over the next five years was a very good 17% [5].

Legg Mason Inc.

Legg Mason Inc is an asset management company. It provides investment management for companies and individuals and company sponsored mutual funds. The Mutual Funds/Managed Services division provides asset management to retail separately managed account programs. It has an Institutional division which provides equity and fixed income management services, manages private investments, and operates mutual funds businesses.

There is also a wealth management division which works for high net worth individuals, endowments, foundations, and institutions, offering them asset management.

Legg Mason Incorporated is an asset and investment management company with their business worldwide. They as some of the others chosen had a high PSR but the rest of the values supported that of a very good growth company so it was chosen despite the high PSR. The P/E and forward P/E ratios of the Legg Mason were 10.51 and 14.21 respectively. The Income Statement was very good with large percentage increases of the total revenue and the net income. The total revenue increased 24.2% from $2,004,267 to $2,489,552, and the net income increased 37.2% from $297,764 to $408,431. The Balance Sheet was equally impressive with the total assets increasing from $7,262,981 to $8,219,472, the total liabilities increasing only slightly from $5,703,371 to $5,926,326, and the total stockholder equity increasing a very impressive 47% from $1,559,610 to $2,293,146. The company shows a promising growth of 15% when the industry percentage is 12.32% [5].

XTO Energy Inc.

XTO Energy Inc is an oil and gas company, which is involved in the acquisition, development, exploitation, and exploration of the oil and gas in the US. It is mainly focused in the eastern region of America. It has properties in Texas, Louisiana, and the Rocky Mountains.

XTO Energy Incorporated is involved in the exploration of oil and gas property in the United States. They are an ideal company for growth because they are impressive in every aspect of information necessary to determine the ability to growth. The P/E and future P/E ratio are 10.72 and 10.12 respectively. The PSR is 3.72 which normally would be considered very high is actually under the industry average of 4.04 so it is actually a respectable number. The Income

Sheet is extremely impressive with a total revenue increase of 80.7% from $1,947,601 to $3,519,000 and a net income increase of 126.8% from $507,882 to $1,152,000. The Balance Sheet was very impressive with a total asset increase from $6,110,372 to $9,857,000, a total liabilities increase from $3,510,999 to $5,648,000, and a total stockholders equity increase of 61.9% from $2,599,373 to $4,209,000. The growth prediction of the company is a remarkable 20% over the next five years when the industry average is 7.46% [5].

Cons Energy Inc.

Cons Energy Inc produces electric power for the United States. It mines, prepares, and markets steam coal to power generators, and it sells metallurgical coal to metal and coke producers. In addition, it markets coal bed methane gas to gas wholesalers.

Consol Energy Incorporated is responsible for the production of multifuel energy and the provision of services of electric generation and other sources of power. The P/E and forward P/E ratio are 13.39 and 13.64 respectively. The PSR of 2.24 which is in itself somewhat high as the XTO Energy Corporation PSR was, but it is below the industry average of 2.78 so therefore it is a respectable number. The Income Statement was very good with a total revenue increase of 37.2% from $2,776,749 to $3,810,449, and a net income increase of 192.5% from $198,582 to $580,861. The Balance Sheet was very good with the total assets increasing from $4,195,611 to $5,087,652, the total liabilities increasing from $3,726,590 to $4,062,296, and a total stockholder equity increase of 118.6% from $469,021 to $1,025,356. The growth of the company is a very good 35% and with the average industry 20% this is a very promising number [5].

Centex Corporation

Centex Cp is involved in home building, construction services, and financial services. It purchases land and develops them, and then sells the houses to families. It also offers home financing, sub prime home equity lending, sells title insurance, and mortgages the homes they sell. It also is engaged in construction for both private and governmental purposes, including education, hospitals, military, airports, offices, correctional institutions, hotels, and resorts.

The Centex Corporation is involved in home building, financial services, and construction services. The P/E and forward P/E ratios are very good with values of 4.90 and 5.70 respectively. The PSR ratio of the company is 0.41 which is an ideal value because they are below 1 and they are also below the industry average of 0.49. The Income Statement was respectable with an increase of 12% in total revenue from $12,859,695 to $14,399,669, and a net income increase of 27.5% from $1,011,364 to $1,289,313. The Balance Sheet is impressive with the total assets increasing from $20,011,079 to $21,364,999, the total liabilities increasing from $15,730,322 to $16,353,341, and the total stockholder equity increasing 17.1% from $4,280,757 to $5,011,658. The growth of the company is a respectable 15% while the industry average is 12.47% [5].

Mitsui & Co. Ltd.

Mitsui & Co. Ltd is a company engages in the sale, distribution, purchasing, marketing, and the supplying of various products. These products include iron, steel, nonferrous metals, machinery, electronics, chemicals, and energy-related commodities worldwide. Mitsui & Co., Ltd. is not part of an index, and in the conglomerates sector, and in the conglomerates industry.

The Mitsui & Co. Ltd. are responsible for the sale, distribution, purchasing, marketing, and supply of various products. The P/E and forward P/E ratio are 13.43 and 11.98 respectively.

The PSR is an extremely good 0.67 when the industry PSR is 1.57 so not only is the PSR below

1, but it is also substantially below the industry average. The Income Statement was extremely

impressive with a total revenue increase of an astronomical 493.4% from $4,829,000 to

$28,657,000, and a net income increase of 149.2% from $264,000 to $658,000. The Balance

Sheet was equally as impressive with the total assets increasing from $55,428,000 to

$64,577,000, the total liabilities increasing from $48,122,000 to $55,315,000, and the total

stockholder equity increase of 26.8% from $7,306,000 to $9,262,000. The growth of the

company is a very good 16.3% therefore all the values show that the company is a very good

choice for a growth portfolio [5].

4.1.2 Growth Portfolio

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Total Cash	Total Assets
5/26/2006	BBV	Buy	20.7	483	9998.1	0		
5/26/2006	CNX	Buy	87.8	114	10009.2	0		
5/26/2006	CTX	Buy	50.11	200	10022	0		
5/26/2006	FTE	Buy	22.65	441	9988.65	0		
5/26/2006	LM	Buy	98.95	101	9993.95	0		
5/26/2006	MITSY	Buy	284.4	35	9954	0		
5/26/2006	PCU	Buy	88.59	113	10010.67	0		
5/26/2006	TEF	Buy	48.3	207	9998.1	0		
5/26/2006	UBS	Buy	114.18	88	10047.84	0		
5/26/2006	XTO	Buy	40.68	246	10007.28	0		
TOTAL					**100029.79**	**0**		

Table 4.1 – Initial Growth Portfolio

Week 1 Performance:

In the first week my investments increased their value by a total of $647.31 and bring their total value to $100,677.10, when my original amount investment was $100,029.79. The increase was a 1.0065% increase on the original investment. In the same one week time frame the S&P 500 went from a value of $1280.16 to $1288.22, which was a percentage increase of 1.0063%, so the S&P and my stocks performed remarkably similar through the first week of monitoring. Below is a detailed list of the individual stocks in my portfolio, and which ones increased against my original purchasing price, and which ones declined from that price along with the total profit against the original purchase price [5].

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Assets
6/02/2006	BBV	Hold	21.03	483	10157.49	159.39		
6/02/2006	CNX	Hold	45.03	228	10328.40	319.20		
6/02/2006	CTX	Hold	47.59	200	9518.00	504.00		
6/02/2006	FTE	Hold	23.46	441	10345.86	357.21		
6/02/2006	LM	Hold	95.80	101	9675.80	318.15		
6/02/2006	MITSY	Hold	286.00	35	10010.00	56.00		
6/02/2006	PCU	Hold	86.96	113	9826.48	184.19		
6/02/2006	TEF	Hold	49.77	207	10302.39	304.29		
6/02/2006	UBS	Hold	115.41	88	10156.08	108.24		
6/02/2006	XTO	Hold	42.10	246	10356.60	349.32		
TOTAL					**100,677.10**	**647.31**		

Table 4.2 – Week 1 Growth Portfolio

Week 2 Performance:

The second week of my investments went extremely poorly declining a very large amount from the previous weeks, $100,677.10 to a very poor $94,258.89 which constitutes a fall of a staggering 6.375%, and a fall of 5.769% on my original investment amount of $100,029.79. Ordinarily numbers like this would cause great concern but the S&P also had a poor showing going from $1,288.22 to $1,252.30 which is a fall of 2.788% and a fall of 2.176% on the original

investment, and although this is nothing compared to the poor performance of my stocks the S&P 500, is 500 companies not 10 and almost all are contained in the materials and minerals, telecommunications, energy, and financial management industries, which may have performed much poorer than other industries, and since the S&P 500 contains companies from many more industries it sustained a lesser fall but still a very large fall so my stocks stayed in a similar trend to the S&P. Below is a detailed description of each of my 10 individual stocks and how much money they lost against the original purchase price along with total losses, and total value of the 10 stocks [5].

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Assets
6/09/2006	BBV	Hold	19.19	483	9268.77	729.33		
6/09/2006	CNX	Hold	39.26	228	8951.28	1057.92		
6/09/2006	CTX	Hold	47.13	200	9426.00	596.00		
6/09/2006	FTE	Hold	22.32	441	9843.12	145.53		
6/09/2006	LM	Hold	97.08	101	9805.08	188.87		
6/09/2006	MITSY	Hold	267.10	35	9348.50	605.50		
6/09/2006	PCU	Hold	76.90	113	8689.70	1320.97		
6/09/2006	TEF	Hold	48.90	207	10122.30	124.20		
6/09/2006	UBS	Hold	106.31	88	9355.28	692.56		
6/09/2006	XTO	Hold	38.41	246	9448.86	558.42		
TOTAL					**94,258.89**	**5,770.90**		

Table 4.3 – Week 2 Growth Portfolio

Week 3 Performance:

The third week of my investment portfolio although still down from my initial investment posted an increase from last weeks dismal showing. My portfolio went from a value of $94,258.89, to a slightly better $95229.80, which is a respectable 1.03% increase on the previous weeks posting along with a fall of 4.799% on my original investment amount of $100,029.79. These numbers are somewhat encouraging because the amount did increase although my

portfolio is still in the red because of the overall poor showing of the market. The S&P 500 for this week went from $1,252.30 to an even worse $1251.54, which underlies the optimism for my portfolio because while I posted a 1.03% increase on my portfolio, the S&P 500 posted a fall of 0.0607% percent, and a fall of 2.236% on the original investment. So while being outperformed in the previous week my portfolio outperformed the S&P 500 in the third week of the simulation. Below is a detailed description of each of my 10 individual stocks and how much money they lost against the original purchase price along with total losses, and total value of the 10 stocks [5].

Date	Symbol	Buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/Loss	Total Cash	Total Assets
6/16/2006	BBV	Hold	19.28	483	9312.24	685.86		
6/16/2006	CNX	Hold	38.94	228	8878.32	1130.88		
6/16/2006	CTX	Hold	49.15	200	9860.00	192.00		
6/16/2006	FTE	Hold	22.08	441	9737.28	251.37		
6/16/2006	LM	Hold	102.45	101	10347.45	353.50		
6/16/2006	MITSY	Hold	272.22	35	9527.70	426.30		
6/16/2006	PCU	Hold	77.41	113	8747.33	1263.34		
6/16/2006	TEF	Hold	48.09	207	9954.63	43.47		
6/16/2006	UBS	Hold	102.84	88	9049.92	997.92		
6/16/2006	XTO	Hold	40.02	246	9844.92	162.36		
TOTAL					**95,229.80**	**4,799.99**		

Table 4.4 – Week 3 Growth Portfolio

Week 4 Performance:

The fourth week of my investment portfolio although still down from my initial investment posted another increase against the previous weeks close. My portfolio went from a value of $95,229.80, to a better $96,047.20, which is an increase of 0.851% on the previous weeks posting along with a fall of 3.981% on my original investment amount of $100,029.79. These numbers are even more encouraging than they were in the previous week because the

amount increased again and although my portfolio is still in the red because of the overall poor showing of the market, the S&P 500 for this week went down again from $1,251.54 to an even lower $1,244.50, which again underlies the optimism for my portfolio because while I posted yet another increase on my portfolio of 0.851%, the S&P 500 posted a fall of 0.563% percent, and a fall of 2.786% on the original investment. So for the second week in a row my portfolio outperformed the S&P 500. Below is a detailed description of each of my 10 individual stocks and how much money they lost against the original purchase price along with total losses, and total value of the 10 stocks [5].

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Assets
6/23/2006	BBV	Hold	19.28	483	9389.52	608.58		
6/23/2006	CNX	Hold	38.94	228	9760.68	248.52		
6/23/2006	CTX	Hold	49.15	200	9860.00	164.00		
6/23/2006	FTE	Hold	22.08	441	9402.12	586.53		
6/23/2006	LM	Hold	102.45	101	10190.90	196.95		
6/23/2006	MITSY	Hold	272.22	35	9415.00	539.00		
6/23/2006	PCU	Hold	77.41	113	8686.31	1324.36		
6/23/2006	TEF	Hold	48.09	207	10000.17	2.07		
6/23/2006	UBS	Hold	102.84	88	9270.80	777.04		
6/23/2006	XTO	Hold	40.02	246	10073.70	66.42		
TOTAL					**96,047.20**	**3,982.59**		

Table 4.5 – Week 4 Growth Portfolio

Week 5 Performance:

The fifth week of my investment portfolio increased dramatically and now is over 1000 dollars above the original investment. My portfolio went from a value of $96,047.20, to a much better $101,142.63, which is an extremely good increase of 5.305% on the previous weeks posting along with an increase of 1.113% increase on my original investment amount of $100,029.79. These numbers are not only very good on their own but compared to the S&P 500 they are extremely promising due to the fact that the S&P 500 is still below where it was when I

made my original investment in the five stocks. The S&P 500 also had a big increase this week going from a very poor 1,244.50 to a more respectable 1,270.20, which is a 2.07% increase, and a fall of a more respectable 0.778% on the original investment price of 1,280.16. So my growth portfolio for the third straight week and four out of five has outperformed the S&P 500 and is now 1.891% above where it would have been had I invested in the S&P 500 at the start of the simulation. Below is a detailed description of each of my 10 individual stocks and how much money they lost against the original purchase price along with total losses, and total value of the 10 stocks [5].

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Assets
6/30/2006	BBV	Hold	20.60	483	9949.80	48.30		
6/30/2006	CNX	Hold	46.72	228	10652.16	642.96		
6/30/2006	CTX	Hold	50.30	200	10060.00	38.00		
6/30/2006	FTE	Hold	21.86	441	9640.26	348.39		
6/30/2006	LM	Hold	99.52	101	10051.52	57.57		
6/30/2006	MITSY	Hold	282.20	35	9877.00	77.00		
6/30/2006	PCU	Hold	89.13	113	10071.69	61.02		
6/30/2006	TEF	Hold	49.74	207	10296.18	298.08		
6/30/2006	UBS	Hold	109.70	88	9653.60	394.24		
6/30/2006	XTO	Hold	44.27	246	10890.42	883.14		
TOTAL					**101,142.63**	**1,112.14**		

Table 4.6 – Week 5 Growth Portfolio

Week 6 Performance:

The sixth week of my investment portfolio increased slightly and now is at a respectable $1,337.45 dollars above the original investment. My portfolio went from a value of $$101,142.63, to a slightly improved, $101,367.24 which is a minor increase of 0.222% on the previous weeks posting along with an increase of moderately good 1.319% increase on my original investment amount of $100,029.79. These numbers once again although decent on their own compare very favorably to the S&P 500 due to the fact that the S&P 500 fell lower this

week than last while mine rose. The S&P 500 also had a slight fall this week going from a respectable $1,270.20, to a worse $1,265.48, which is a 0.372% decrease, and a total fall from the original investment of 1.147%. So my growth portfolio for the fourth straight week and fifth out of six has outperformed the S&P 500 and is now 2.466% above where it would have been had I invested in the S&P 500 at the start of the simulation. Below is a detailed description of each of my 10 individual stocks and how much money they lost against the original purchase price along with total losses, and total value of the 10 stocks [5].

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Total Cash	Total Assets
7/7/2006	BBV	Hold	21.28	483	10278.24	280.14		
7/7/2006	CNX	Hold	45.24	228	10314.72	305.52		
7/7/2006	CTX	Hold	50.97	200	10194.00	172.00		
7/7/2006	FTE	Hold	22.12	441	9754.92	233.73		
7/7/2006	LM	Hold	97.33	101	9830.33	163.62		
7/7/2006	MITSY	Hold	284.05	35	9941.75	12.25		
7/7/2006	PCU	Hold	92.98	113	10506.74	496.07		
7/7/2006	TEF	Hold	50.10	207	10370.70	372.60		
7/7/2006	UBS	Hold	108.06	88	9509.28	538.56		
7/7/2006	XTO	Hold	43.36	246	10666.56	659.28		
TOTAL					**101,367.24**	**1,337.45**		

Table 4.7 – Week 6 Growth Portfolio

4.1.3 Conclusion

After watching my portfolio for that last six weeks against the S&P 500 the data suggests that the criteria I used to pick the stocks was indeed effective and although there is an element of luck involved in investing, if sound principles and solid data analysis is used to choose stocks most likely to succeed the end result will be more often than not a good one. I used many criteria in choosing the stocks in my portfolio and they have shown to be worthwhile information to look at because at the end of this simulation my portfolio finished 2.466% above the S&P 500 index,

which is widely known as the best gauge of the US equities market, comprised of the 500 leading companies in leading industries of the US economy. Below are three graphs which display the trends that were shown in the data above with how my portfolio compared to the S&P 500 index.
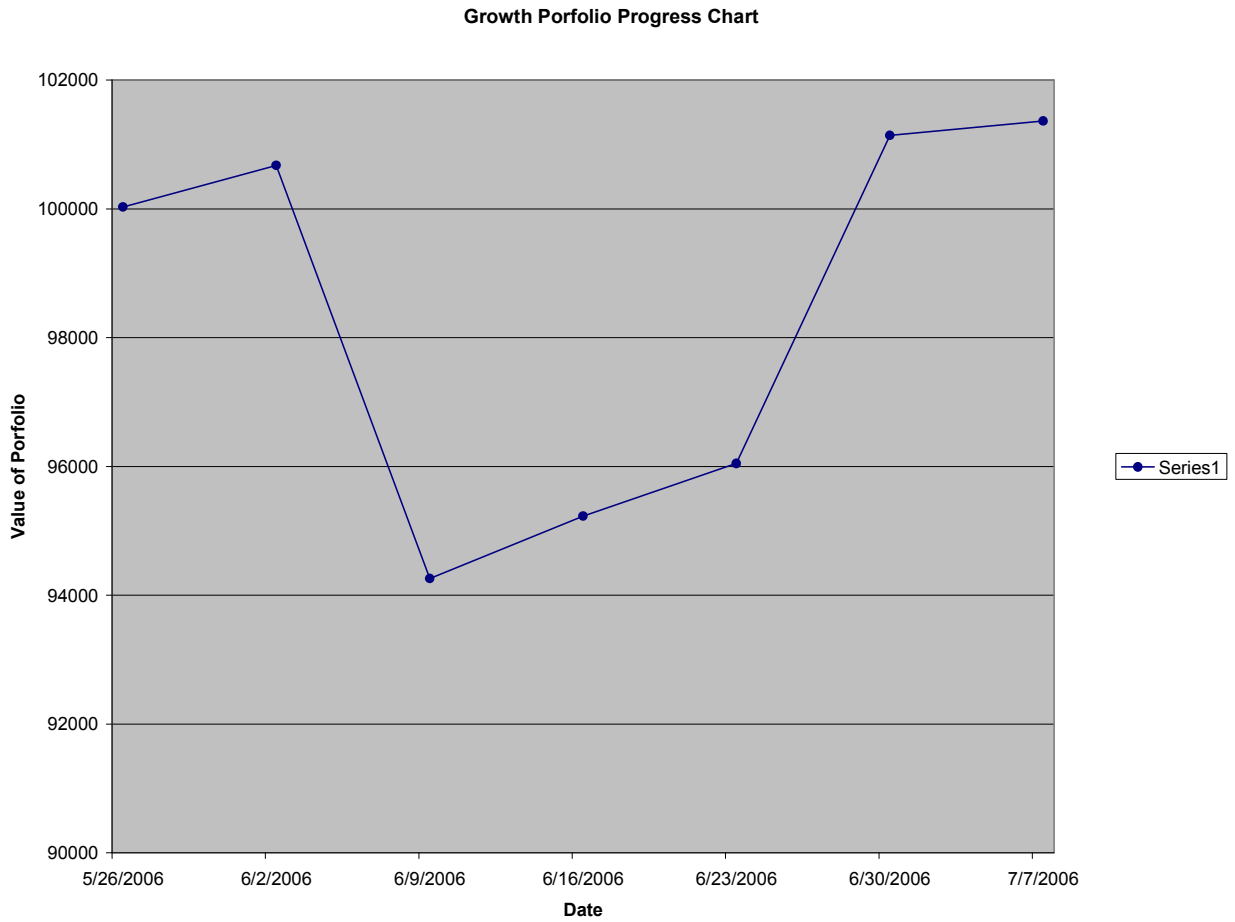
Growth Porfolio Progress Chart

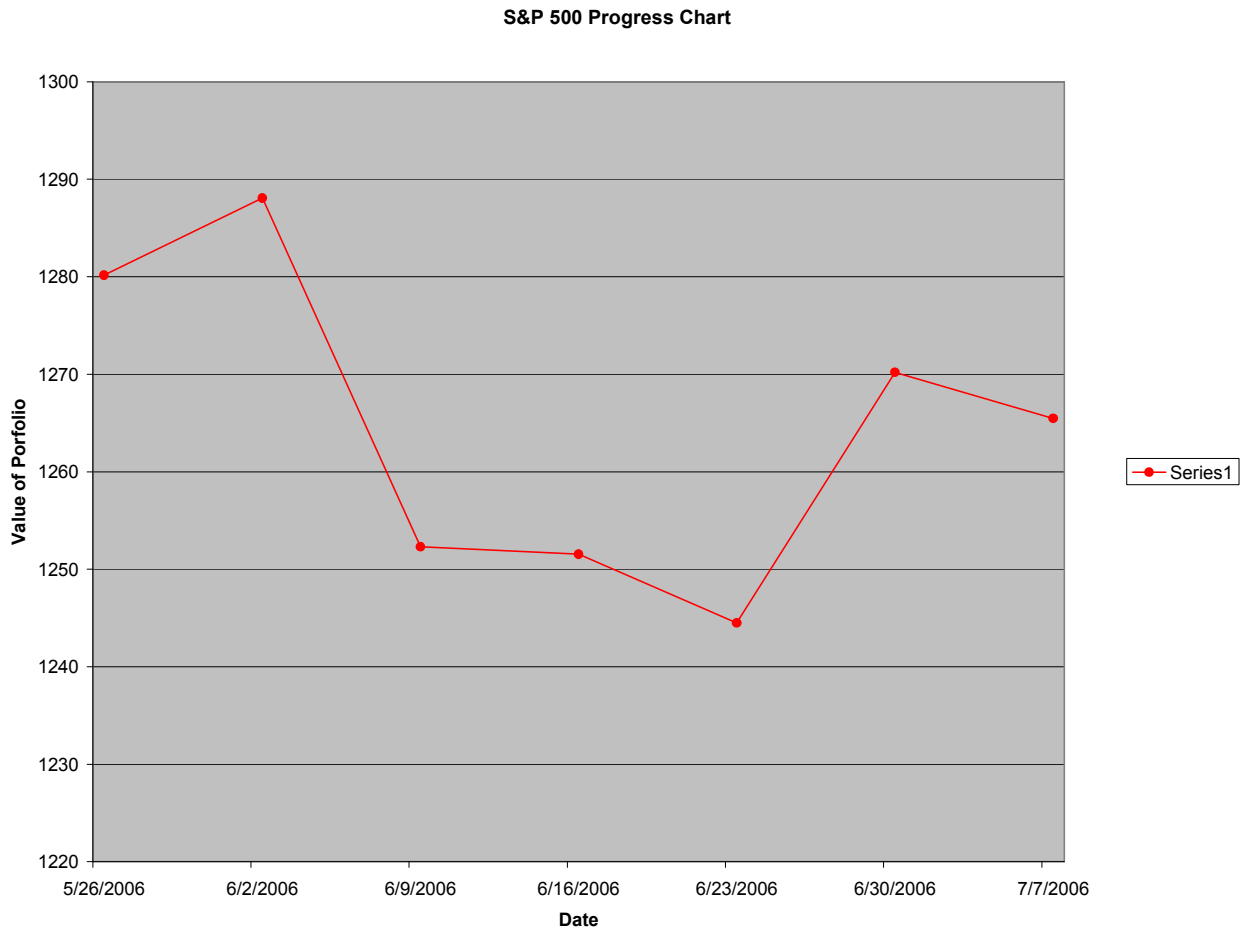Figure 4.6 - The figure above shows the total value of the Growth Portfolio throughout the 5 week analysis.

S&P 500 Progress Chart

Figure 4.7 - The figure above displays the total value of the S&P 500 index throughout the 5 week analysis.

The two above show only half the story where the real performance is shown is in the percentages from the original investment due to the fact that the total values of the portfolio and the S&P 500 were much different. Below it is graphically shown that when my portfolio is compared to the S&P 500 index it is very clear that although in the second week my portfolio fell much further than the index, the next two weeks I showed an upward trend while the S&P continued to fall lower, and although both the index and my portfolio posted very good fifth weeks my sixth week improved even further over the index resulting in a portfolio far better than

the index itself over the time frame. While I now have a better value than when I purchased my stocks the S&P 500 is still below where it was when the growth portfolio was created.

S&P 500 vs. Growth Porfolio
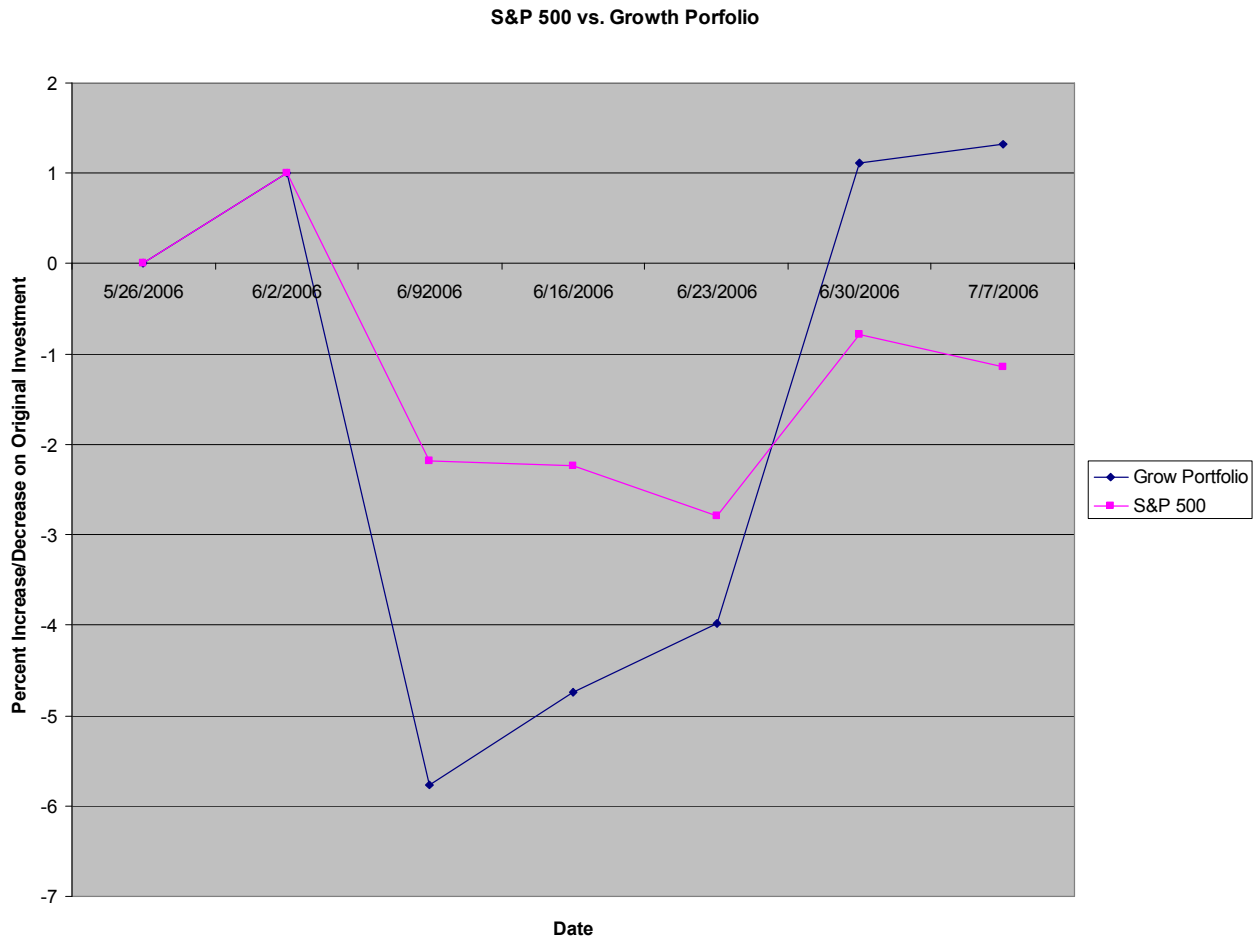
Figure 4.8 - My growth index increase and decrease percentages compared to the S&P 500 over the same time span.

It is important when evaluating the entire simulation to not just look at my portfolio because that only tells part of the story. It is also prudent to go through all ten of the stocks in the portfolio and see which performed well and which didn't, and see if there were any trends in the successful and not successful. The Banco Bilbao Vizcaya Argentina was chosen for a multitude of reasons, the first being that the trailing and forward P/E ratios were very good at 13.75 and

10.68 respectively. The PSR was the company's only real problem at 3.81 while the industry average was 3.18, but through the simulation it was one of the better stocks I purchased and finished above where I had purchased it so it seems I was right to disregard the inflated PSR value because of the excellence of the other factors. The Income Statement was extremely good with a total revenue increase of 6.3% from $22,019,504 to $23,405,323, a large 76.5% increase in net income from $2,393,239 to $4,223,286 while the Balance Sheet posted an increase in the company's assets from $369,123,854 to $431,760,584, an increase in liabilities from $344,533,438 to $399,744,567, and a 30.2% increase in the stockholders equity from $24,590,416 to $32,016,017. The estimated growth percentage for the company was 15.6% and it was purchased at a price of $20.7 and rose to a price of $21.28 with a net profit of $280.14 as shown below [5].

BBV
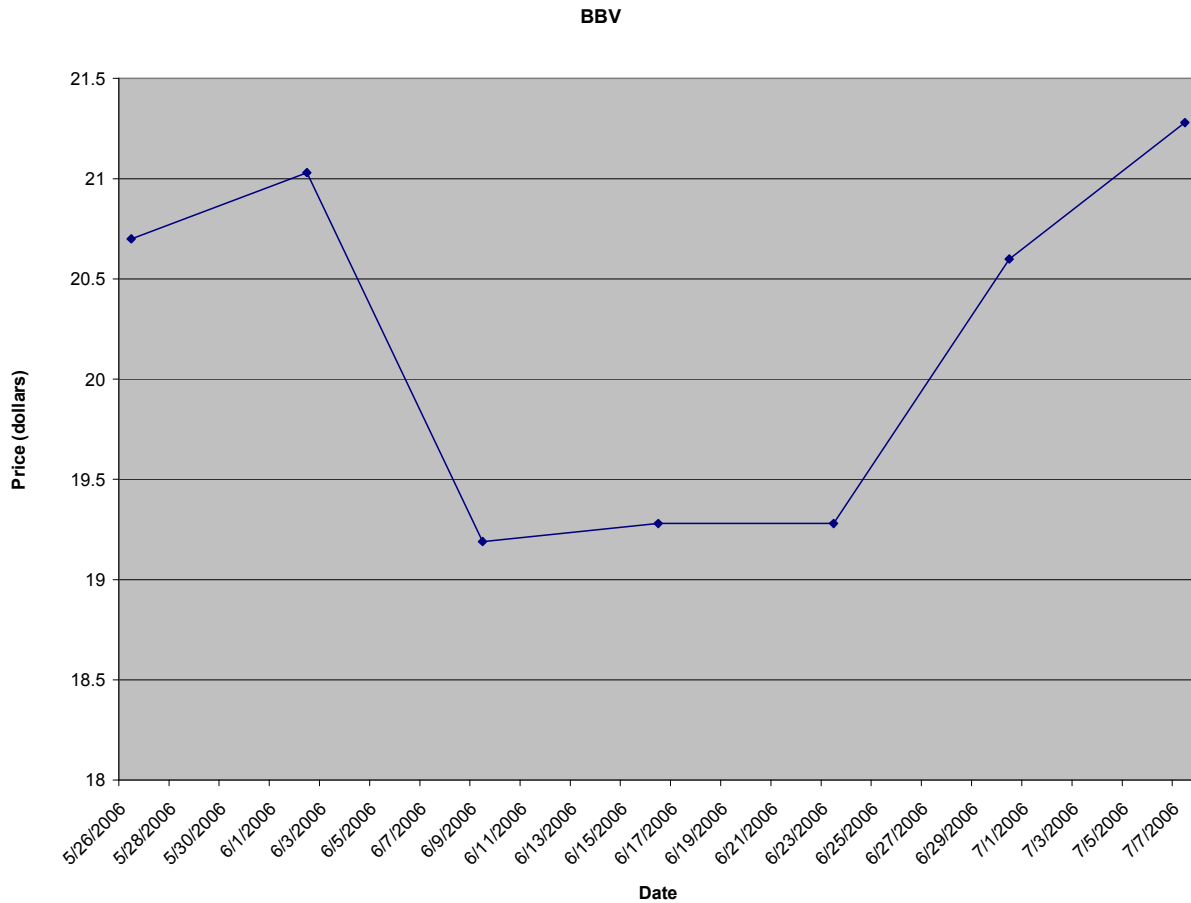
Figure 4.9 - BBV performance throughout the seven week time frame.

Consol Energy Incorporated along with BBV had impressive trailing P/E and forward P/E ratios with values of 13.39 and 13.64 respectively. The PSR of 2.24 was somewhat high, but when compared to the industry average of 2.78 was considered a respectable value. The Income Statement had a total revenue increase of 37.2% from $2,776,749 to $3,810,449, and a net income increase of 192.5% from $198,582 to $580,861 while the Balance Sheet showed the total assets increasing from $4,195,611 to $5,087,652, the total liabilities increasing from $3,726,590 to $4,062,296, and a total stockholder equity increase of 118.6% from $469,021 to $1,025,356. The growth of the company was 35% and with the average industry growth of 20%. This stock

performed very well and was bought at a price of $87.8 then split and the price rose to $45.24

with a total gain of $350.52 dollars [5]. BBV and CNX both produced moderate and had very

similar data and followed very similar trends if the two graphs are compared.
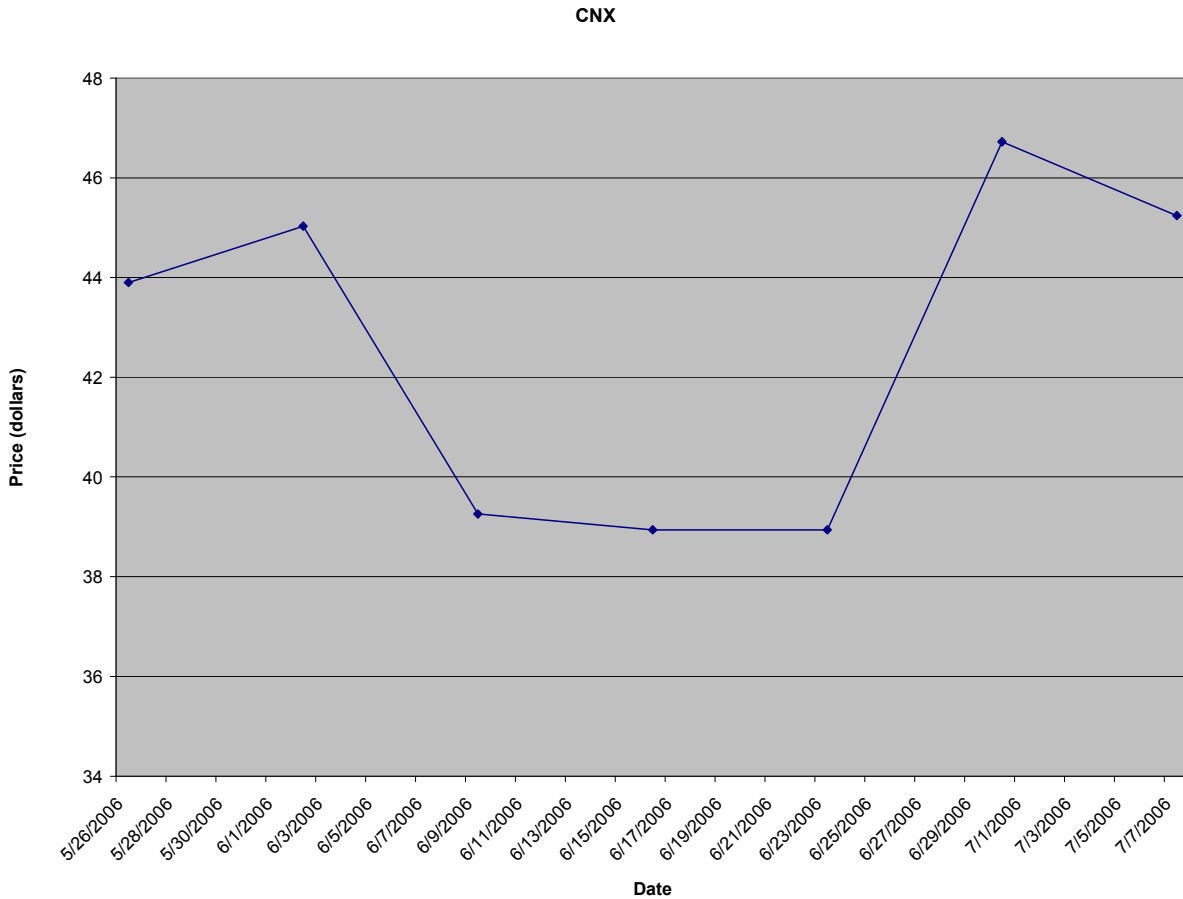
CNX

Figure 4.10 - CNX performance throughout the seven week time frame.

The Centex Corporation had very good trailing P/E and forward P/E ratios with values of

4.90 and 5.70 respectively. The PSR ratio of the company was 0.41 while the industry average

was 0.49. The Income Statement posted a 12% increase in total revenue from $12,859,695 to

$14,399,669, and a net income increase of 27.5% from $1,011,364 to $1,289,313, while the

Balance Sheet displayed the total assets increasing from $20,011,079 to $21,364,999, the total

liabilities increasing from $15,730,322 to $16,353,341, and the total stockholder equity

increasing 17.1% from $4,280,757 to $5,011,658. The growth of the company was a respectable

15% while the industry average was 12.47%, and the stock was purchased at a price of $50.11

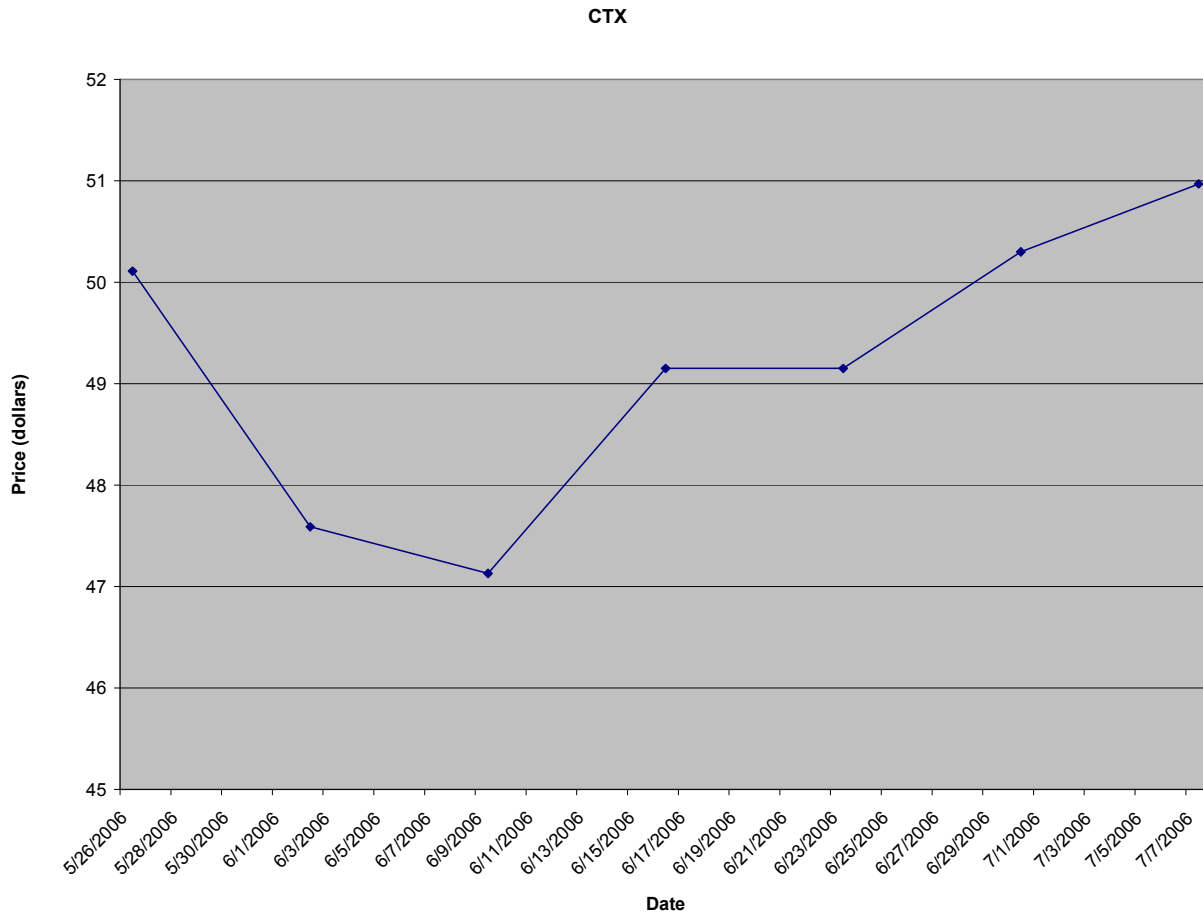and rose to a price of $50.97 which is a profit of $172.00 [5].

CTX

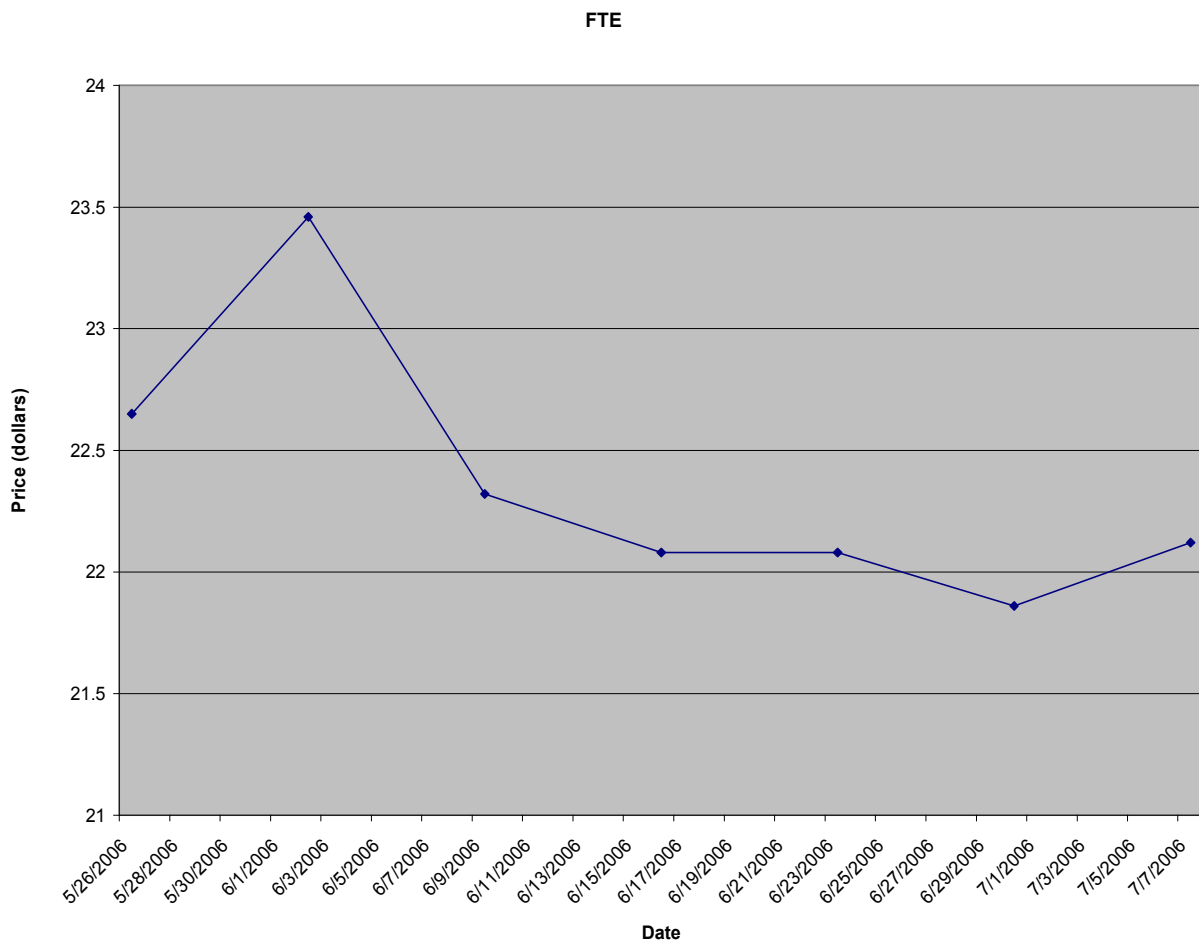
Figure 4.11 - CTX performance throughout the seven week time frame.

France Telecom had very good trailing P/E and forward P/E ratios of 8.32 and 9.73

respectively, while the PSR of this stock was 0.97, while the average industry was 1.49. The

Income Statement showed an 11.1% increase in the total revenue from $57,914,140 to

$64,341,011, but a 65.4% drop in the net income from $6,677,813 to $4,037,260, but the rest of

the stock values were very good so I chose to overlook it. The Balance Sheet was extremely

good though with total assets increasing from $98,827,357 to $114,737,854, and total liabilities

decreasing from $116,041,748 to $109,240,686, and an increase in the stockholders equity from -$17,214,391 to $5,497,168. The prediction for the next five years of growth in the company was 15.6%. The stock was bought at a price of $22.65 and fell to a price of $22.12 losing an amount of $233.73 [5]. This stock was different from the previous three with its poor income statement which might prove to be a trend because the previous three stocks posted profits and all had very good income statements.

FTE

Figure 4.12 - FTE performance throughout the seven week time frame.

Legg Mason Incorporated had very good trailing P/E and forward P/E ratios of 10.51 and 14.21 respectively. The PSR was high but as I had done with other stocks disregarded it due to the rest of the values being good. The Income Statement showed large percentage increases of

the total revenue and the net income with the total revenue increasing 24.2% from $2,004,267 to $2,489,552, and the net income increasing 37.2% from $297,764 to $408,431, while the Balance Sheet was equally impressive with the total assets increasing from $7,262,981 to $8,219,472, the total liabilities increasing from $5,703,371 to $5,926,326, and the total stockholder equity increasing 47% from $1,559,610 to $2,293,146. The company showed a growth of 15% while the industry percentage is 12.32%. This stock was bought at a price of $98.95 and dropped to a price of 97.33 posting a loss of $163.62 [5]. This stock had values similar to the first three that posted profits and with stocks there is a good amount of luck involved and sometimes similar companies will perform differently.
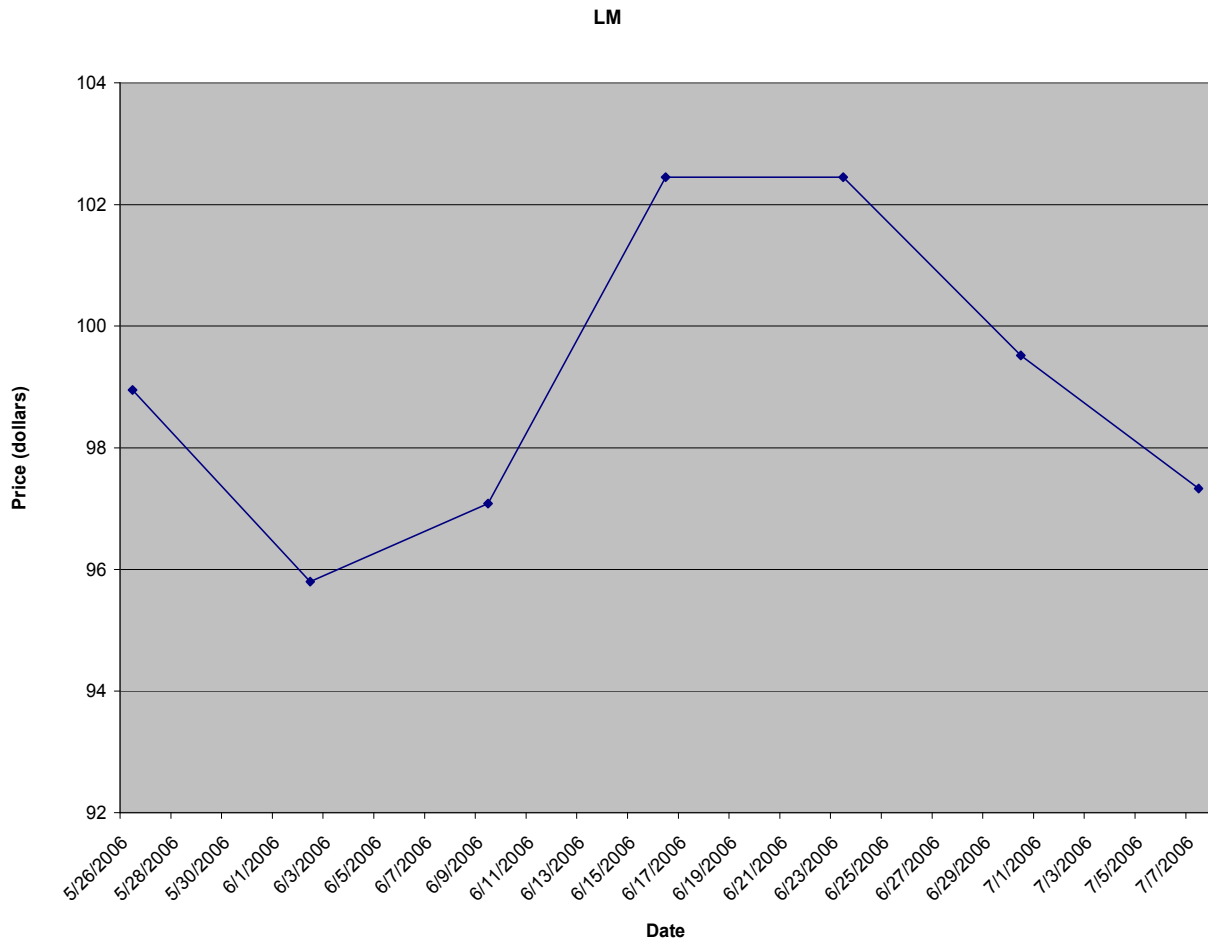
LM

Figure 4.13 - LM performance throughout the seven week time frame.

The Mitsui & Co. Ltd. had good trailing P/E and forward P/E ratios of 13.43 and 11.98 respectively. The PSR was 0.67 while the industry was 1.57. The Income Statement posted a total revenue increase of 493.4% from $4,829,000 to $28,657,000, and a net income increase of 149.2% from $264,000 to $658,000, while the Balance Sheet was equally as impressive with the total assets increasing from $55,428,000 to $64,577,000, the total liabilities increasing from $48,122,000 to $55,315,000, and the total stockholder equity increase of 26.8% from $7,306,000 to $9,262,000. The growth was 16.3%, and the stock was purchased at a price of $284.40 and fell slightly to a price of $284.05 creating a minor loss of $12.25 [5]. This stock showed a very

similar path to the ones that made a profit but never cleared its original price, but it did perform very similarly to the first three positive stocks as shown in Figure 4.14.
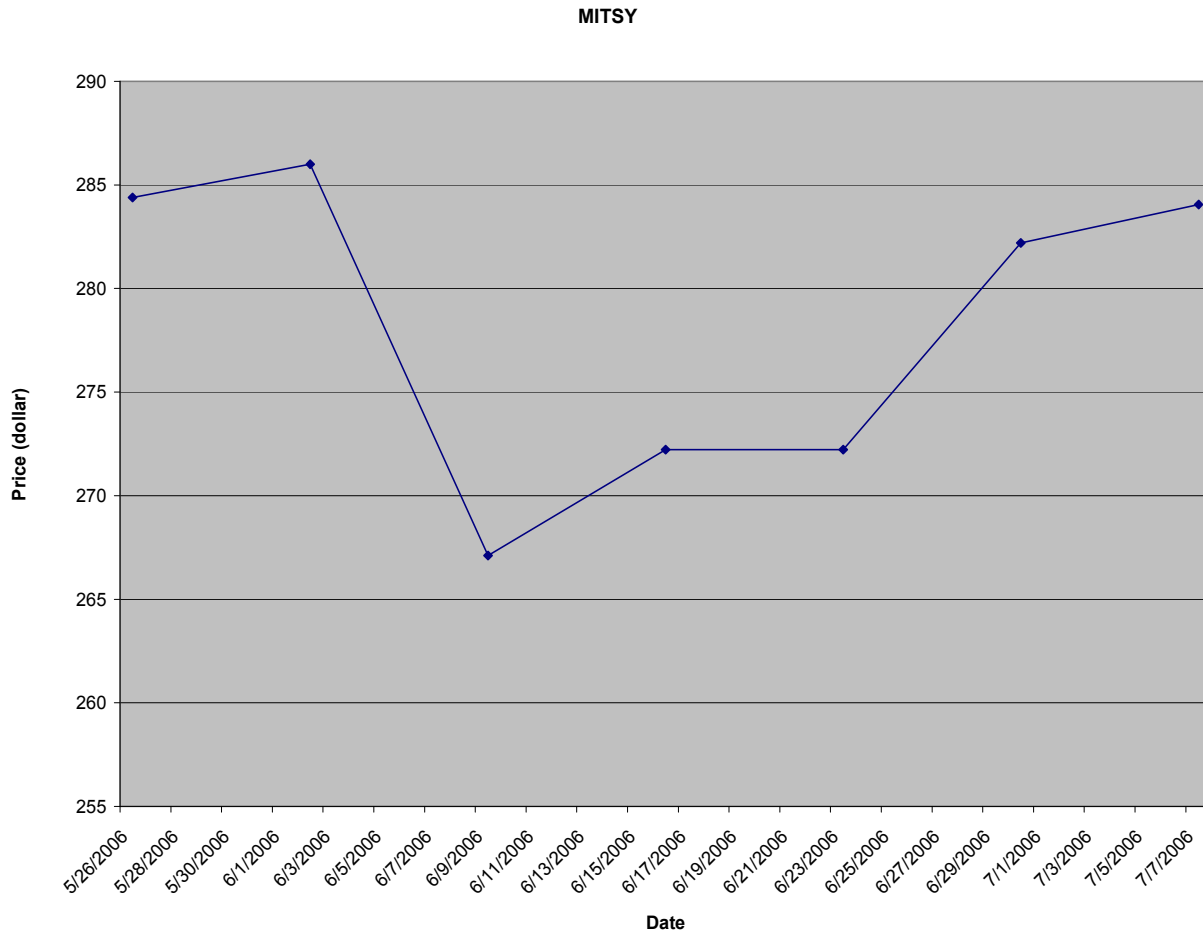
MITSY

Figure 4.14 - MITSY performance throughout the seven week time frame.

Southern Copper Corporation's only blemish was a relatively high PSR of 2.94 while the industry average was at 2.05, but it had very good trailing P/E and forward P/E ratios of 8.40 and 6.52 respectively. The Income Statement showed the total revenue increasing 140% from $1,715,919 to $4,112,629, and the net income increasing 134.6% from $596,773 to $1,400,148. The Balance Sheet displayed the total assets increasing from $2,597,130 to $5,687,574, the liabilities increasing from $876,231 to $2,361,497, and the total stockholders equity increasing

93.3% from $1,720,899 to $3,326,077. The predicted growth over the next five years was a very good 17%. PCU was probably the most consisted of the stocks in my portfolio as shown below. It was bought for a price of $88.59 and rose to a price of $92.98 making a profit of $496.07 [5]. So as shown in Figure 4.15 there is a trend developing showing that the PSR did not seem to adversely effect the stocks, because three of the four that posted profits had relatively high PSR values.
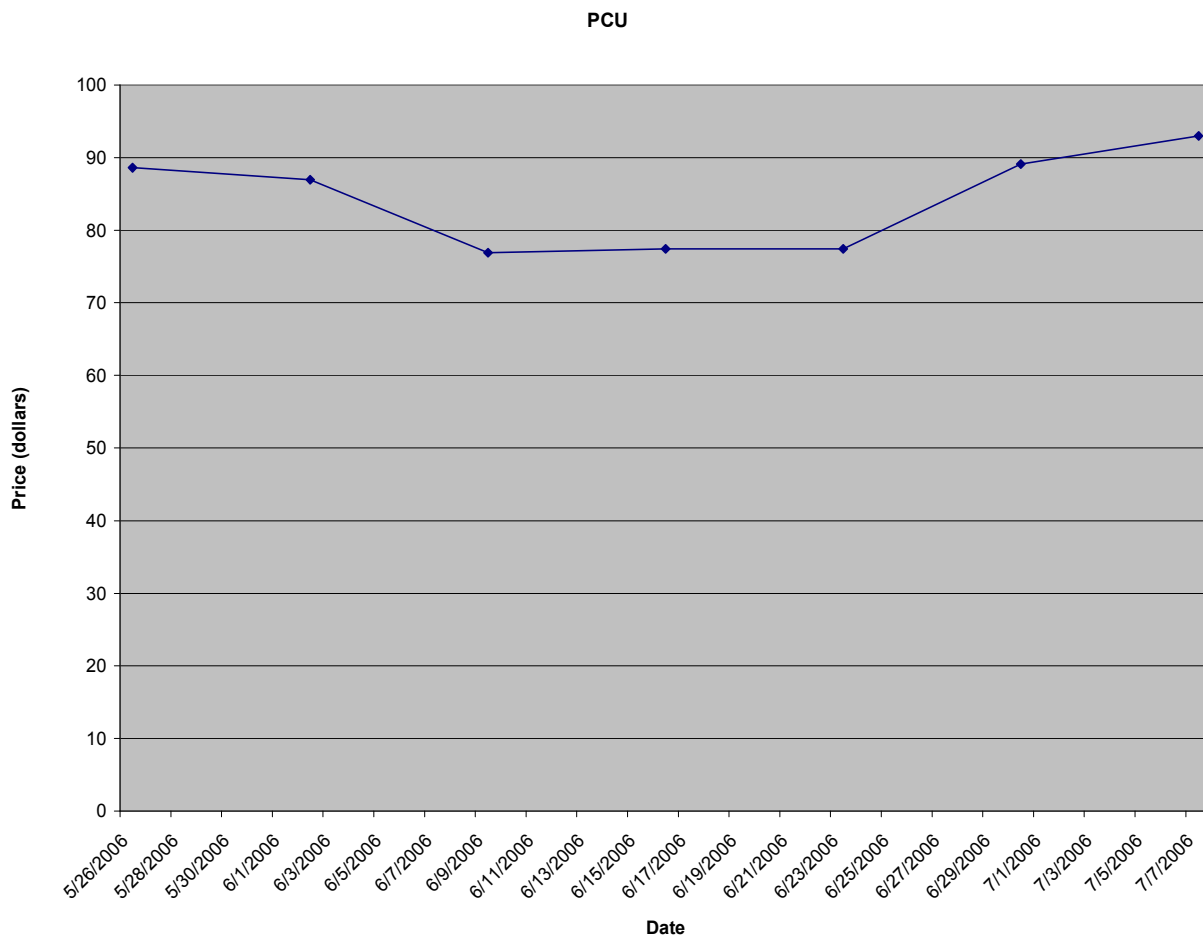

Figure 4.15 - PCU performance throughout the seven week time frame.

Telefonica SA had good P/E ratio, and forward P/E ratios with values of 13.90 and 11.31 respectively, while the PSR was a respectable 1.48, which was just a hair underneath the industry average of 1.49. The Income Statement showed total revenue of $42,584,138 from the previous

years $36,520,289 a 16.6% increase, and a net income of $3,517,437 which was an increase over the previous years total of $3,372,911 a 4.2% increase. The Balance Sheet showed an increase in total assets from $79,494,939 to $86,715,547, an increase in total liabilities from $57,782,166 to $64,455,921, and a total stockholders equity increase of 2.5% from $21,712,773 to $22,259,627. The next five-year growth projection was 16.2%. TEF was bought at a price of $48.30 and rose to a price of $50.10 which made a $372.60 profit [5].
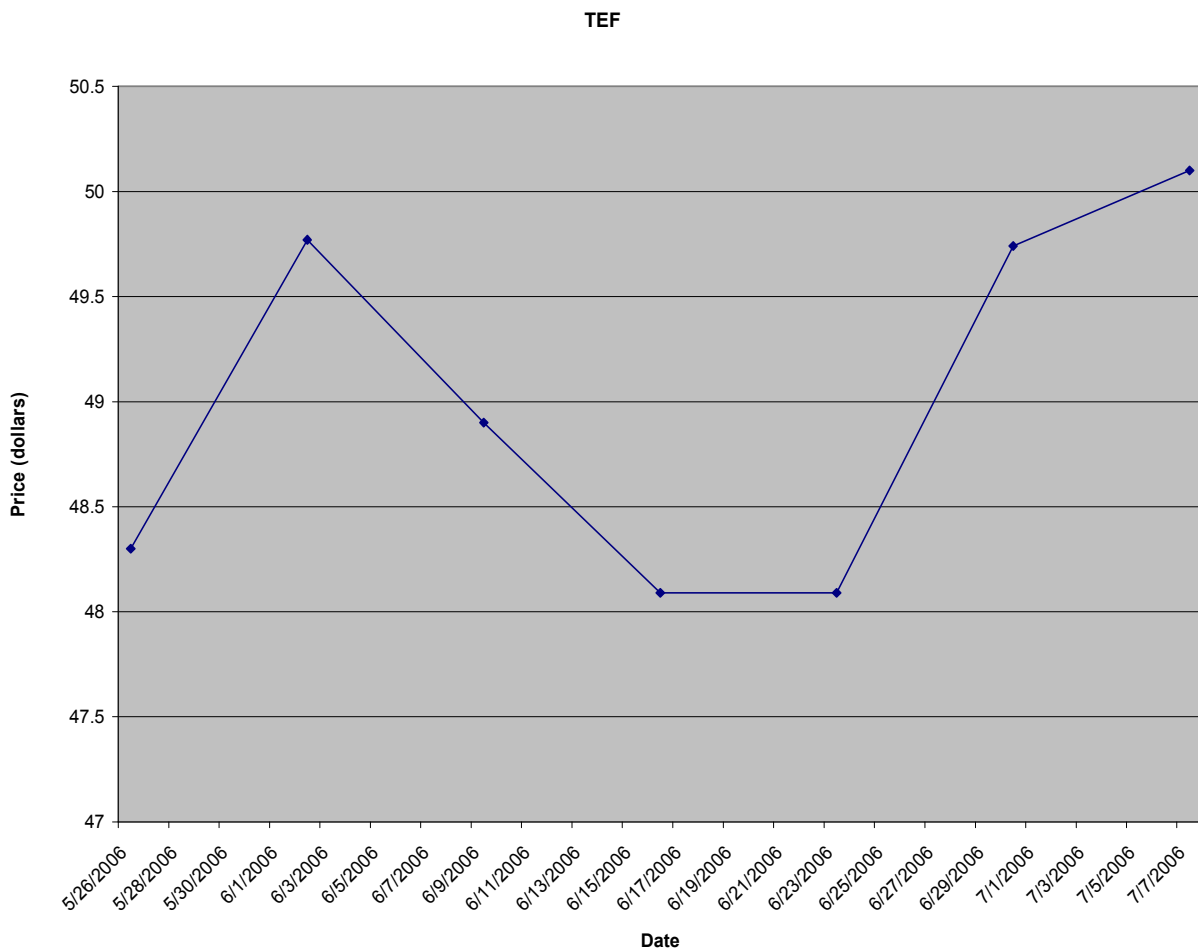
TEF

Figure 4.16 - TEF performance throughout the seven week time frame

UBS AG had good trailing P/E and forward P/E ratios of 10.818, and 12.38 respectively. The PSR was found to be 2.58 but the industry as a whole had a PSR of 3.34. The Income Statement numbers showed a net income of $10,664,846 from the previous years $7,794,230

which was a 36.8% gain. The Balance Sheet showed the total stockholder equity decreased from $46,553,245, to $39,487,069, but the net tangible assets increased considerably, from $20,121,100, to $29,235,011. The estimated growth percentage of the company for the next 5 years was 17.1% [5]. This stock was by far the worst of my portfolio and was bought at a price of $114.18 and dropped to a value of $108.06 causing a loss of $538.56.
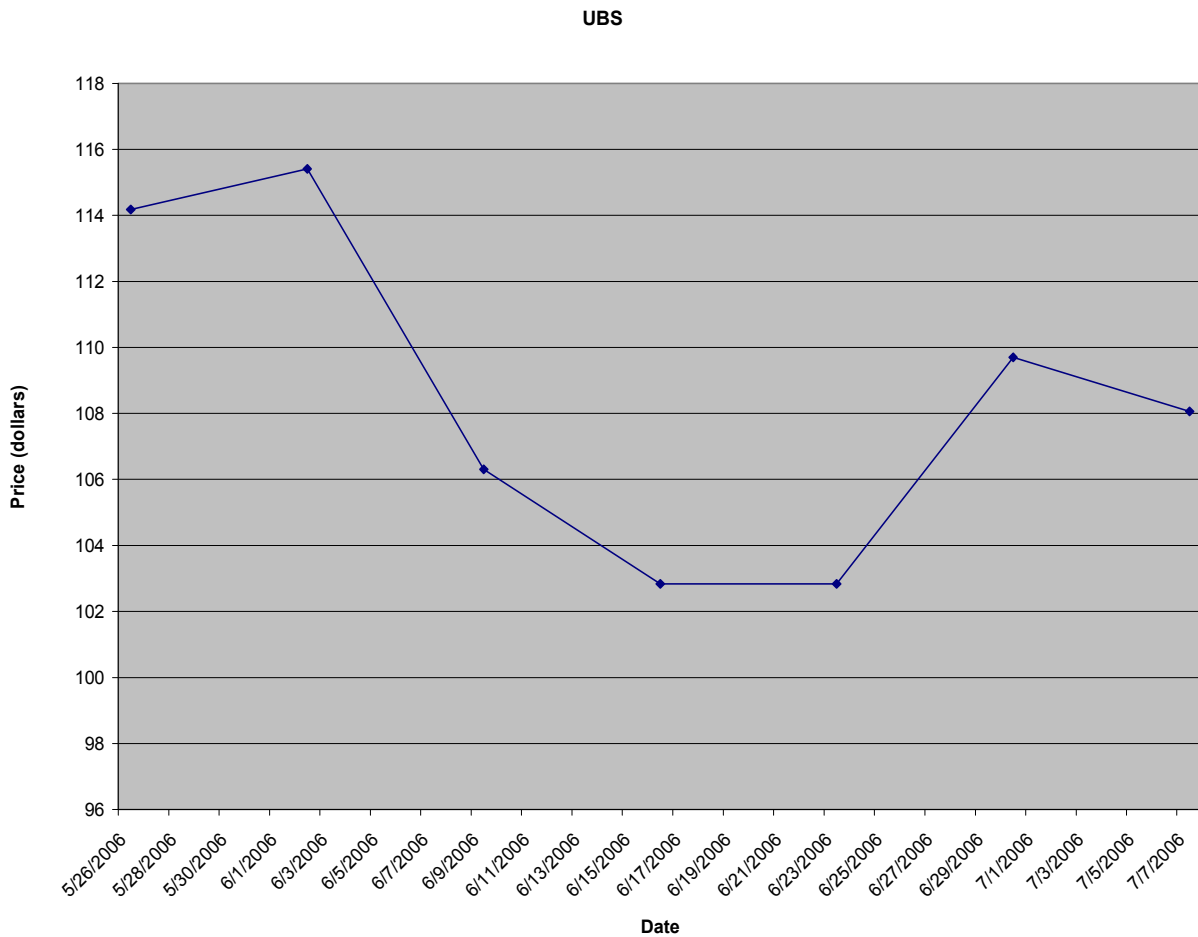
UBS

Figure 4.17 - UBS performance throughout the seven week time frame.

XTO Energy Incorporated had a trailing P/E and forward P/E ratio of 10.72 and 10.12 respectively. The PSR was 3.72, with an industry average of 4.04. The Income Sheet showed a total revenue increase of 80.7% from $1,947,601 to $3,519,000 and a net income increase of 126.8% from $507,882 to $1,152,000. The Balance Sheet was very impressive with a total asset

increase from $6,110,372 to $9,857,000, a total liabilities increase from $3,510,999 to $5,648,000, and a total stockholders equity increase of 61.9% from $2,599,373 to $4,209,000. The growth prediction was 20% over the next five years when the industry average is 7.46%. XTO was by far the best stock in my portfolio and was bought a price of $40.68 and rose to a price of $43.36 creating a profit of $659.28 [5].
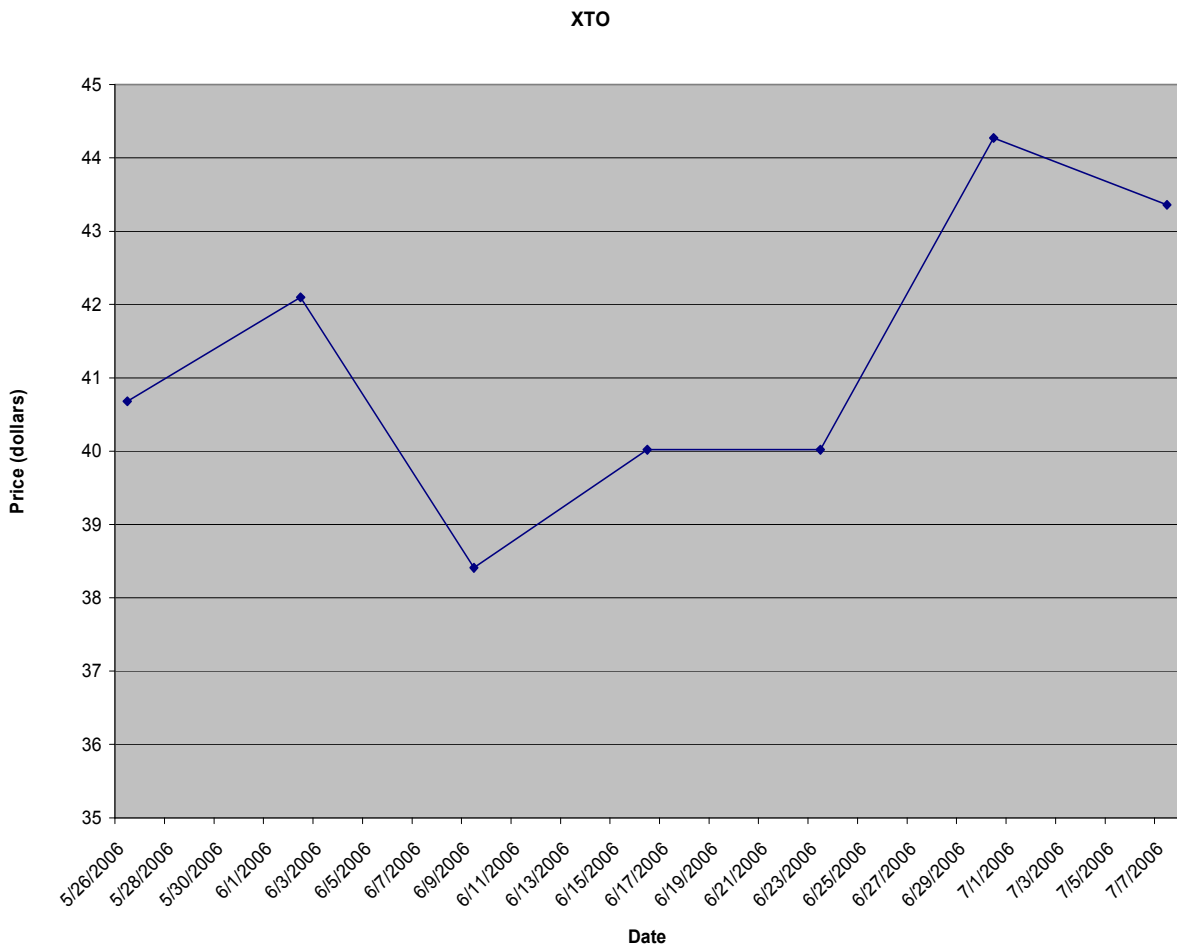
XTO

Figure 4.18 - XTO performance throughout the seven week time frame.

There were some trends shown within the stocks in the portfolio, the first being that the stocks with high PSR values but lower values than the industry performed very well with the premier example being XTO which had a very high PSR value. The company's that seemed to

have problems with the Income Statement, Balance Sheet, and Cash Flow document seemed to do worse than those with good values for the documents and a poor value somewhere else. Much of the selection of stocks is luck, but there were some interesting trends shown and trends that will be applied when actual stocks do need to be chosen for person financial growth.

4.2   Technical Analysis Simulation

In this simulation we will select stocks that are under priced or oversold and hope that the price will regress back up to its moving average. By buying the stock early before the share price increases we hope to ride the trend and sell before the price drops. This is called income investing because we are only holding stock for a short period of time and sell if we think the share price is about to make a significant drop.

In order to identify the stocks that are cheap we look for current trading prices that have fallen below their moving average. Since the time period for this simulation is limited to seven weeks we will use a 50-day moving average. We will also only select stocks that have a market capitalization of at least $2 billion because smaller cap stocks tend to be more volatile [6].

Some technical analysis indicators we will use to identify whether or not it is a good time to buy or sell the stock are MACD (Moving Average Convergence/Divergence), MFI (Money Flow Index), ROC (Price Rate of Change), and RSI (Relative Strength Index). We are looking for stocks where the MACD is above the signal line or EMA (Exponential Moving Average). The MFI and RSI should be below or close to 20. The trend of the ROC can be used to indicate the pricing momentum of the stock and will help us identify a change in the trend of the stock.

The MACD, MFI, RSI, and ROC indicators will also help us determine whether we should sell any stock in our portfolio. If the MACD falls below the signal line, the MFI and RSI approach 80, or the ROC shows a negative trend then we will monitor the stock's price closely and consider selling if it falls below the neckline.

4.2.1 Income Portfolio

Week 1

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
5/26/06	JPM	Buy	43.10	232	(9,999.20)		90,000.80	9,999.20
5/26/06	IBM	Buy	80.16	124	(9,939.84)		80,060.96	9,939.84
5/26/06	MSFT	Buy	23.87	418	(9,977.66)		70,083.30	9,977.66
5/26/06	XOM	Buy	61.53	162	(9,967.86)		60,115.44	9,967.86
5/26/06	DELL	Buy	24.44	409	(9,995.96)		50,119.48	9,995.96
5/26/06	VIV	Buy	2.91	3436	(9,998.76)		40,120.72	9,998.76
5/26/06	ERICY	Buy	32.27	309	(9,971.43)		30,149.29	9,971.43
5/26/06	INTC	Buy	18.09	552	(9,985.68)		20,163.61	9,985.68
5/26/06	CUK	Buy	41.03	243	(9,970.29)		10,193.32	9,970.29
5/26/06	VZ	Buy	31.31	319	(9,987.89)		205.43	9,987.89
5/26/06	**^GSPC**		1280.54			**Total**	205.43	100,000.00
% Gain/Loss			0.00%					0.00%

Table 4.8 – Week 1 Income Portfolio

We invested an initial $100,000 into 10 different stocks and distributed the money evenly so approximately $10,000 was initially invested into each stock at the opening trading price on May 26, 2006 as shown in Table 4.7. The portfolio will be monitored weekly and stocks will be sold if any of the previously mentioned conditions are met. The performance of this simulation will be compared to the S&P 500 Index (^GSPC).

Week 2

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
6/2/06	JPM		43.81	232				10,163.92
6/2/06	IBM		79.52	124				9,860.48
6/2/06	MSFT		22.76	418				9,513.68
6/2/06	XOM		61.65	162				9,987.30
6/2/06	DELL		25.96	409				10,617.64
6/2/06	VIV		2.98	3436				10,239.28
6/2/06	ERICY		32.57	309				10,064.13
6/2/06	INTC		18.23	552				10,062.96
6/2/06	CUK		40.91	243				9,941.13
6/2/06	VZ		31.94	319				10,188.86
6/2/06	**^GSPC**		1288.22			**Total**	205.43	100,844.81
% Gain/Loss			0.60%					0.84%

Table 4.9 – Week 2 Income Portfolio

After the first week S&P 500 Index slightly increased from $1280.54 to $1288.22 (0.60%) as shown in Table 4.8. Our total assets also showed a slight increase from the initial $100,000.00 to $100,844.81, thus outperforming the index with a 0.84% increase or 40% better. None of the charts were showing sell signals so no transactions were made [5].

Week 3

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
6/9/06	JPM		42.10	232				9,767.20
6/9/06	IBM		77.63	124				9,626.12
6/9/06	MSFT		21.92	418				9,162.56
6/9/06	XOM		58.80	162				9,525.60
6/9/06	DELL		25.26	409				10,331.34
6/9/06	VIV		2.56	3436				8,796.16
6/9/06	ERICY		29.87	309				9,229.83
6/9/06	INTC		17.16	552				9,472.32
6/9/06	CUK		37.94	243				9,219.42
6/9/06	VZ		31.50	319				10,048.50
6/9/06	^GSPC		1252.30			Total	205.43	95,384.48
% Gain/Loss			-2.21%					-4.62%

Table 4.10 – Week 3 Income Portfolio

During the third week we experienced relatively large losses in our assets. Table 4.9 shows the value of our investments dropping to $95,384.48 or a loss of 4.62% off our initial assets. However, this can be explained by looking at the stock market as a whole and realizing that the entire market suffered with concerns about increasing federal interest rates. Compared to the S&P 500 Index, which dropped 2.21% from week 1, our portfolio did 52.1% worse than the index. However, we were confident that we should hold our stocks because they were being oversold as shown by the technical indicators and would soon show a profit [5].

Week 4

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
6/16/06	JPM		40.16	232				9,317.12
6/16/06	IBM		77.95	124				9,665.80
6/16/06	MSFT		22.10	418				9,237.80
6/16/06	XOM		58.80	162				9,525.60
6/16/06	DELL	Sell	24.76	409	10,126.84	130.88	10,332.27	0.00
6/16/06	VIV		2.52	3436				8,658.72
6/16/06	ERICY		30.74	309				9,498.66
6/16/06	INTC		18.3	552				10,101.60
6/16/06	CUK		39.87	243				9,688.41
6/16/06	VZ		32.54	319				10,380.26
6/16/06	**^GSPC**		1251.54				**Total** 10,332.27	96,406.24
% Gain/Loss			-2.26%					-3.59%

Table 4.11 – Week 4 Income Portfolio

We made our first sell transaction during this week. Although the profit of selling the Dell stock was quite small, we consider it a success because it actually reaped a profit even though the market had recently been at its lowest point of the year. Looking at the rest of our portfolio we can see that our selected stocks were still down 3.59% off their initial value with our total assets reaching $96,406.24. That is still a 1.07% improvement from last week even though the market had continued to slightly decline with the S&P 500 dropping to 1251.54, which is a loss of 2.26% from when the simulation began and 0.0607% in the last week [5].

Week 5

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
6/23/06	JPM		40.87	232				9,481.84
6/23/06	IBM		77.10	124				9,560.40
6/23/06	MSFT		22.50	418				9,405.00
6/23/06	XOM		58.10	162				9,412.20
6/23/06	VIV		2.41	3436				8,280.76
6/23/06	ERICY		31.66	309				9,782.94
6/23/06	INTC		18.00	552				9,936.00
6/23/06	CUK		40.16	243				9,758.88
6/23/06	VZ		32.83	319				10,472.77
6/23/06	**^GSPC**		1244.50				**Total** 10,332.27	96,423.06
% Gain/Loss			-2.81%					-3.58%

Table 4.12 – Week 5 Income Portfolio

In week 5 the market continued its declining trend, while our portfolio was at a virtual standstill. The S&P 500 dropped 0.56% since week 4 and 2.81% since week 1 to 1244.50. Our assets totaled $96,423.06 at the end of the week. That is a gain of 0.0174% since week 4 and a loss of 3.58% compared to week 1. If we look closer at our individual stocks in Table 4.11 we can see that our results are slightly skewed. The value of our Vivo Participacoes S.A. shares are down to $8,280.76, or a very disappointing 17.2%. However, the technical indicators are telling us that it is a bad time to sell this stock. The MACD is far above the signal line, which means the price of this stock in the short-term is much lower than its long-term value. The ROC is also showing a slightly positive trend, which is an indication that the stock may increase in price soon[5].

Week 6

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
6/29/06	TM	Buy	102.23	97	(9,916.31)		415.96	10,145.23
6/30/06	JPM		42.00	232				9,744.00
	IBM		76.82	124				9,525.68
	MSFT		23.30	418				9,739.40
	XOM		61.35	162				9,938.70
	VIV	Sell	2.46	3436	8,452.56	(1,546.20)	8,868.52	0.00
	ERICY		33.04	309				10,209.36
	INTC		19.00	552				10,488.00
	CUK		40.78	243				9,909.54
	VZ		33.49	319				10,683.31
	PFE	Buy	23.47	377	(8,848.19)		20.33	8,848.19
	^GSPC		1270.20			**Total**	20.33	99,251.74
% Gain/Loss			-0.81%					-0.75%

Table 4.13 – Week 6 Income Portfolio

A few transactions were made this week with the stock market making a big jump in the right direction. The S&P 500 was up to 1270.20, which is a 2.07% improvement from week 5. Shares in Toyota Motor Corp. were bought because the technical charts were showing that this stock was on the rise. The ROC was showing an extremely positive trend which is a very

encouraging indicator, but we should proceed with caution because the MFI and RSI were also both quickly approaching an overbought status which means this stock could quickly jump in price and then decline just as fast making it a good short-term investment.

The disappointing VIV shares were sold off to raise some capital to buy a different stock that may perform better. Their value totaled $8,452.56 which was an improvement from week 5 by 2.07%, but still 15.5% less than what the buy price was resulting in a loss of $1,546.20.

Analyzing our whole portfolio showed that the selected stocks performed much better in week 6. The total assets were slowly regaining their initial value and were up to $99,251.74, only 0.75% less than week 1. This was 2.93% better than week 5, a very encouraging result[5].

Week 7 – Final Analysis

Date	Symbol	Buy/Sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Cash	End of Week Holdings
7/7/2006	JPM	Sell	42.41	232	9,839.12	(160.08)	9,859.25	0.00
	IBM	Sell	76.42	124	9,476.08	(463.76)	19,335.33	0.00
	MSFT	Sell	23.30	418	9,739.40	(238.26)	29,074.73	0.00
	XOM	Sell	62.82	162	10,176.84	208.98	39,251.57	0.00
	ERICY	Sell	32.44	309	10,023.96	52.53	49,275.53	0.00
	INTC	Sell	18.56	552	10,245.12	259.44	59,520.65	0.00
	CUK	Sell	41.07	243	9,980.01	9.72	69,500.66	0.00
	VZ	Sell	32.71	319	10,434.49	446.60	79,935.15	0.00
	PFE	Sell	23.68	377	8,927.36	79.17	88,862.51	0.00
	TM	Sell	104.38	97	10,124.86	208.55	98,987.37	0.00
	^GSPC		1265.48			**Total**	98,987.37	98,987.37
% Gain/Loss			-1.18%					-1.01%

Table 4.14 – Week 7 Income Portfolio

The final week of the technical analysis simulation did not endure the same success as week 6 and we were unable to match the initial investment with our final total assets equaling $98,987.37. However, this can partly be explained by the poor performance of the stock market as a whole. The S&P 500 had lost 1.18% of its value compared to week 1 by posting 1265.48 points at the end of the simulation compared to its initial value of 1280.54. If we compare the performance of the index to our portfolio, which netted a 1.01% loss over the 7-week period, we

can see that simulation outperformed the S&P 500 by 14.4%[5]. This can be attributed as a success because we lost less money than an index which encompasses the top 500 stocks, thus outperforming the market average.

Another reason why the income portfolio may have suffered is due the poor investment into the VIVO stock. This investment lost 15.5% of its initial value which is a significant amount in such a short period of time. It is an extreme outlier in that no other stock gained or lost more than $500 of its initial approximate $10,000 value while the VIVO stock cost us $1546.20. Obviously, an important lesson to learn from this is to study every stock carefully because one poor choice can easily impact the entire investment while it also reinforces the idea of spreading out your assets so that in case a bad decision is made other investments will hopefully make up for it.

4.2.2 Company Data

JP Morgan Chase & Co. (JPM)
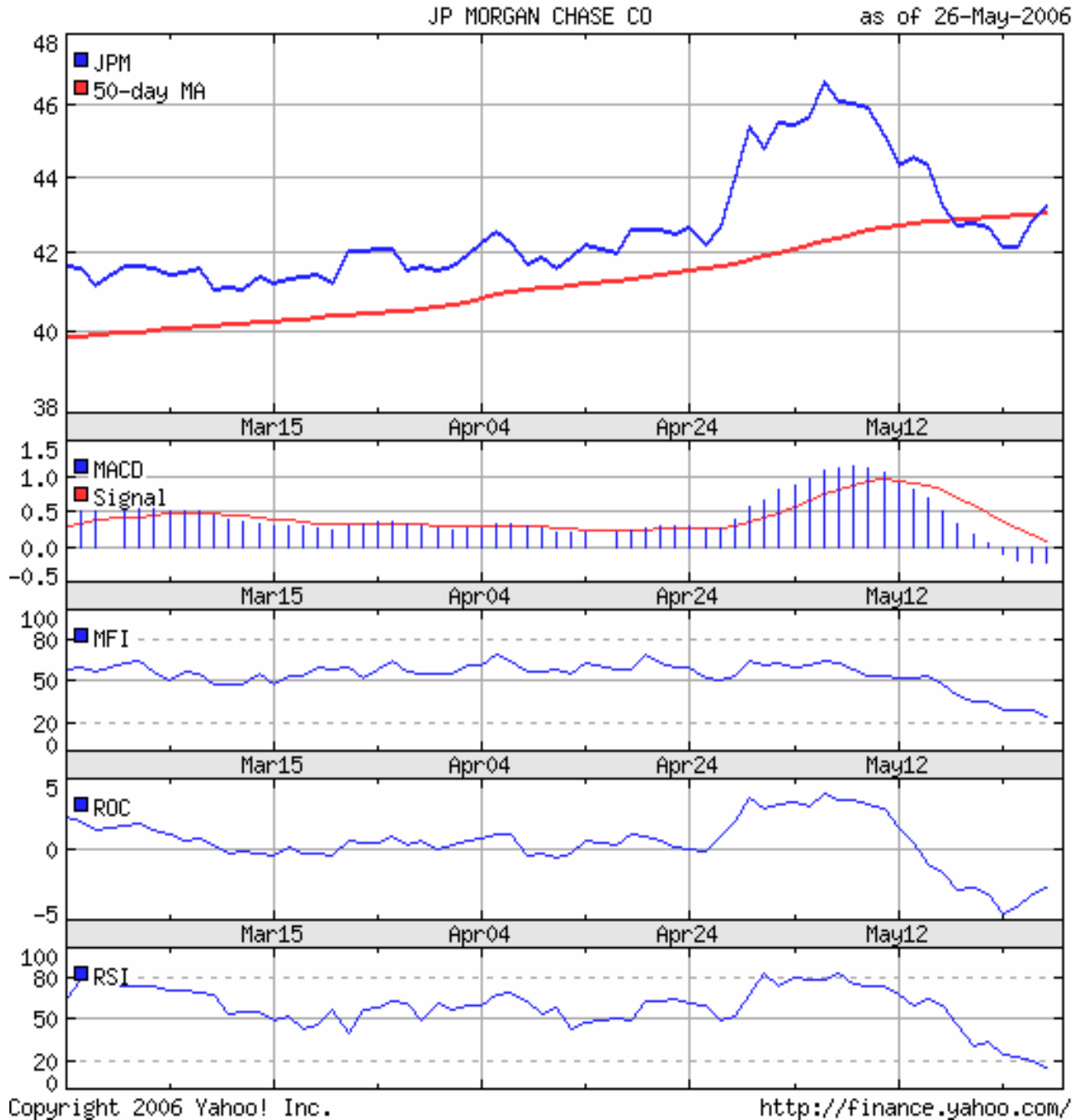
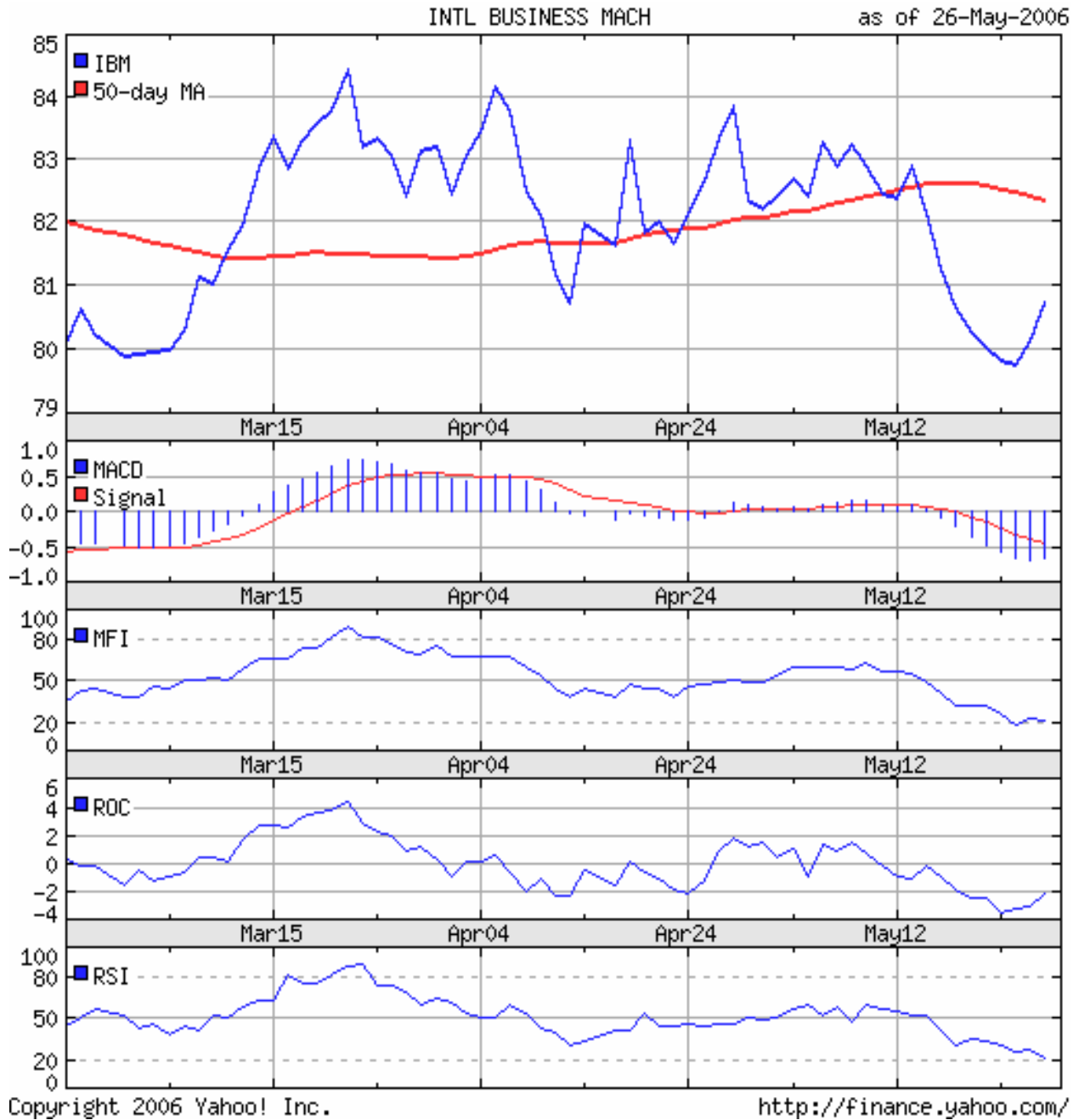Figure 4.19 - Technical Analysis Chart for JPM (5/26/06) [5]
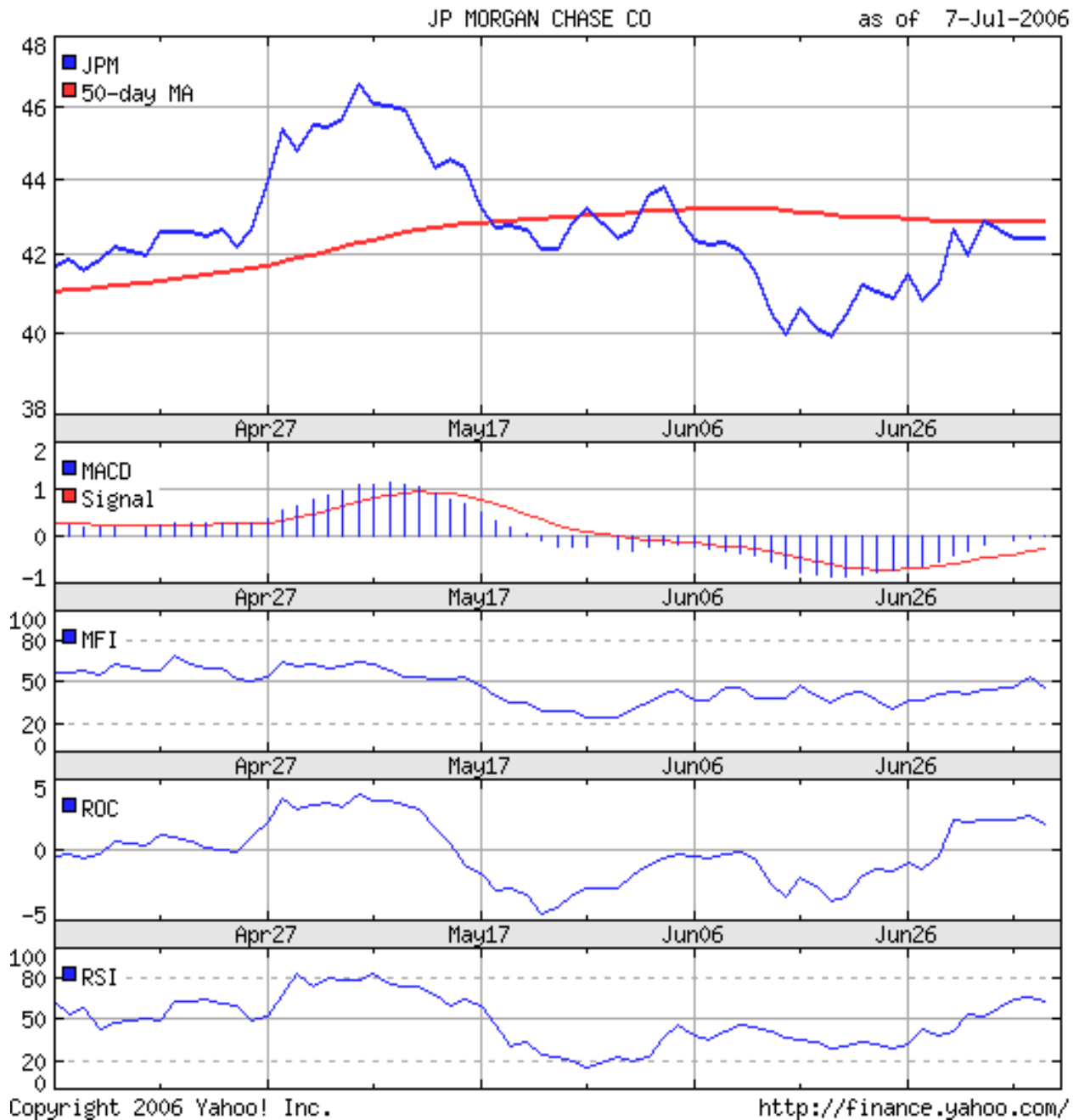
Figure 4.20 - Technical Analysis Chart for JPM (7/7/06) [5]

JP Morgan Chase & Co. (JPM) is a worldwide financial service corporation founded in 1823 with its headquarters in New York City. It provides services in investment banking, commercial banking, treasury and security services, asset and wealth management, retail financial services, and card services. The retail financial services sector offers deposits, loans,

investments, insurance to consumers and small business, and home mortgages and car and real estate loans to consumers. It also sells and underwrites protection products and investment alternatives including life insurance, annuities, and debt protection. The investment bank sector offers various products and services including consultation on corporate structure and strategy, capital raising, risk management, and participates in trading and investing. The card services sector offers credit cards on behalf on various companies and institutions across the United States such as airlines, hotels, universities, and retailers. The commercial banking sector offers profit and non-profit corporations and institutions services such as lending, treasury services, investment banking, and asset and wealth management. The treasury and securities services division assists corporations and investors with transaction, investment, and information services. Finally, JPMorgan's asset and wealth management segment offers investment advice and management, estate and trust services, and retirement services to corporations and consumers[5].

Figure 4.4 shows JPM as a good investment choice because the MFI and RSI are in a declining trend close to or below 20. This indicates that this stock is being oversold and its price is likely to increase in the near future. The MACD is above the signal line meaning the short term price is below the long term price, and the ROC is experiencing a recent positive trend which indicates the trading price could increase.

International Business Machines Corp. (IBM)

Figure 4.21 - Technical Analysis Chart for IBM (5/26/06) [5]
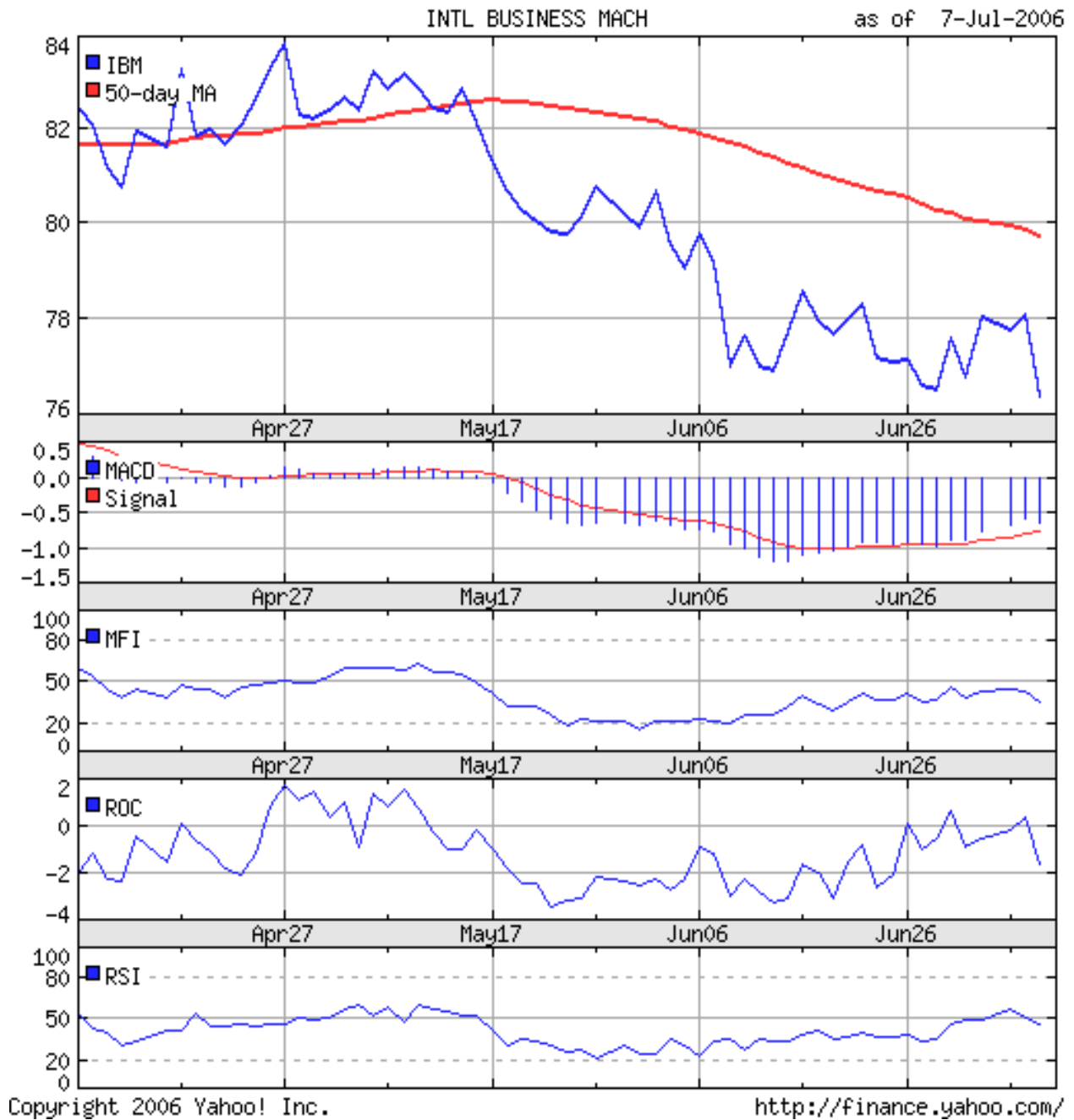
Figure 4.22 - Technical Analysis Chart for IBM (7/7/06) [5]

International Business Machines Corp. (IBM), founded in 1910 and based in Armonk, New York, operates globally in information technology and does business in systems and financing, software, and services. IBM's systems and finance division offers systems such as servers, data storage products, supply chain and semiconductor manufacturing services,

semiconductor products, printing systems, and software. The software sector offers database and content management systems. It also provides software for collaboration and infrastructure management. The services division provides various services in business transformation, engineering and technology, business consulting, business performance, strategic outsourcing, innovation, application management, and e-Business hosting [5].

Figure 4.6 indicates that this IBM stock is being oversold and ripe for a turnaround with a low MFI and RSI. The price momentum has been negative in recent weeks, but may be moving towards a positive trend in the near future with a positive slope. The MACD is hovering around the signal line indicating that this stock's long-term and short-term prices are similar. However, looking at the actual price of the stock it is apparent that it suffered a drastic drop a few weeks ago but recently has experienced a slight increase.

Microsoft Corp. (MSFT)
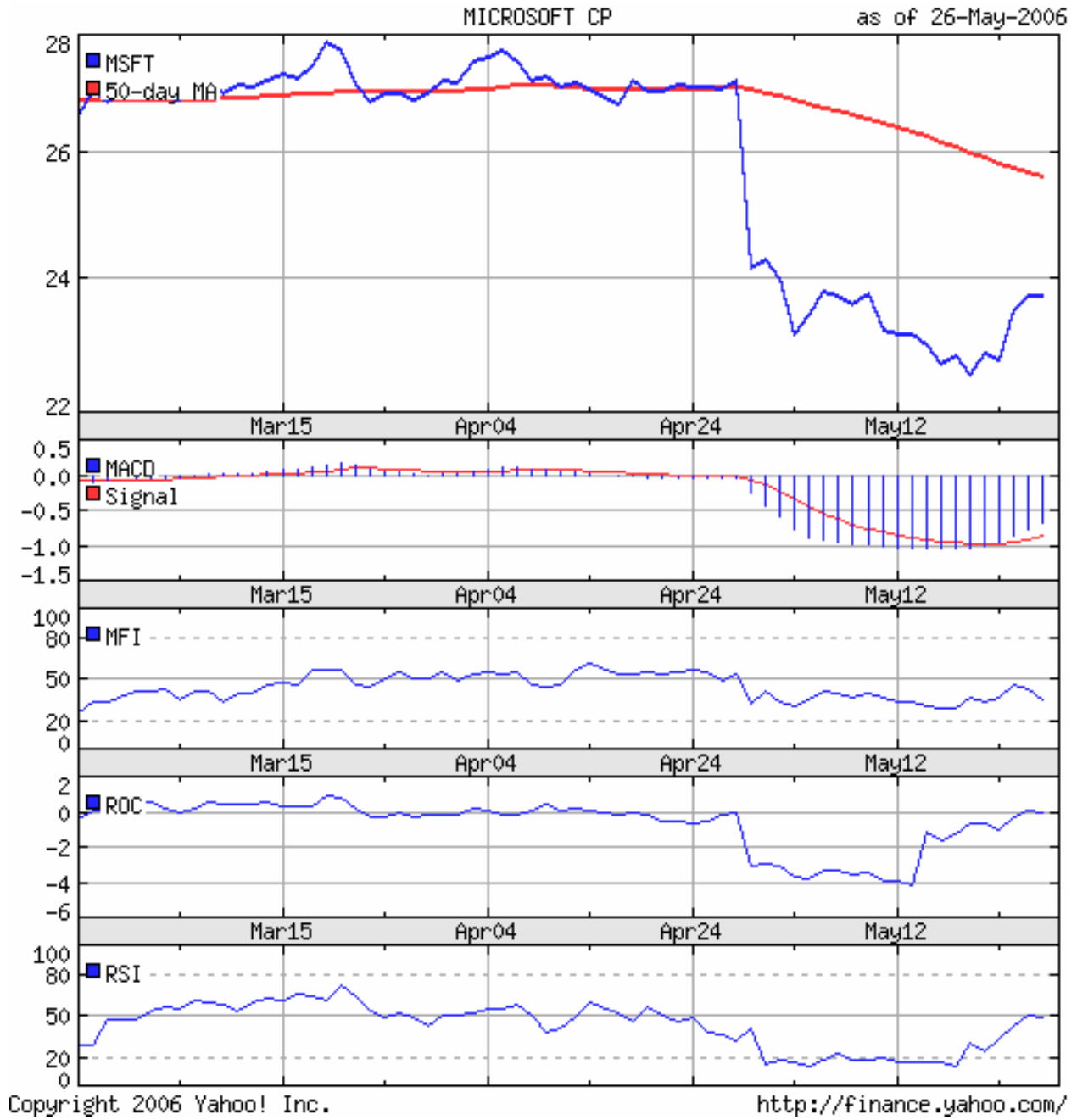
Figure 4.23 - Technical Analysis Chart for MSFT (5/26/06) [5].
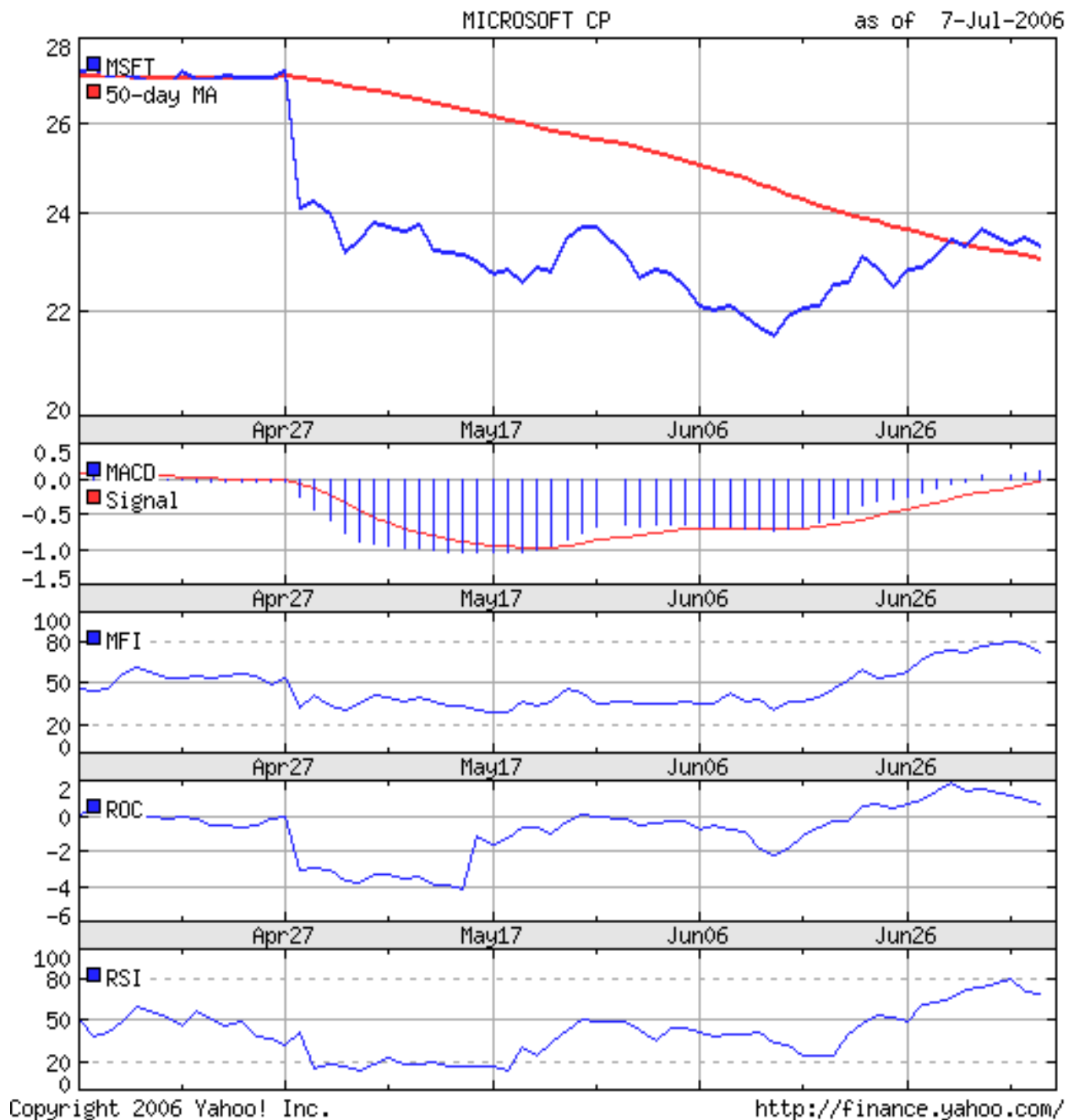
Figure 4.24 - Technical Analysis Chart for MSFT (7/7/06) [5].

Microsoft Corp. (MSFT) develops, manufactures, licenses, and provides support services for software products worldwide. It was founded in 1975 by William H. Gates III and is based in Redmond, Washington. It offers operating systems for servers, personal computers, and other devices through its client division. It has a server and tools sector which offers tools in server

development and applications and training. Microsoft's Information Worker division provides personal and business productivity applications. The Business Solutions program offers solutions to financial, customer relationship, and supply chain management. The MSN division provides communication and internet services such as Internet access, email, and instant messaging. The Mobile and Embedded Devices division produces services and products for mobile software platform. The Home and Entertainment segment provides the Xbox video game system, games for PCs, online games, and console games [5].

Analyzing figure 4.8 shows that the MACD is above the signal line indicating a buy signal and a positive trend in the ROC shows the stock price may increase. The RSI should be closely monitored because it is at 50 and may become overbought.

Exxon Mobil Corp. (XOM)
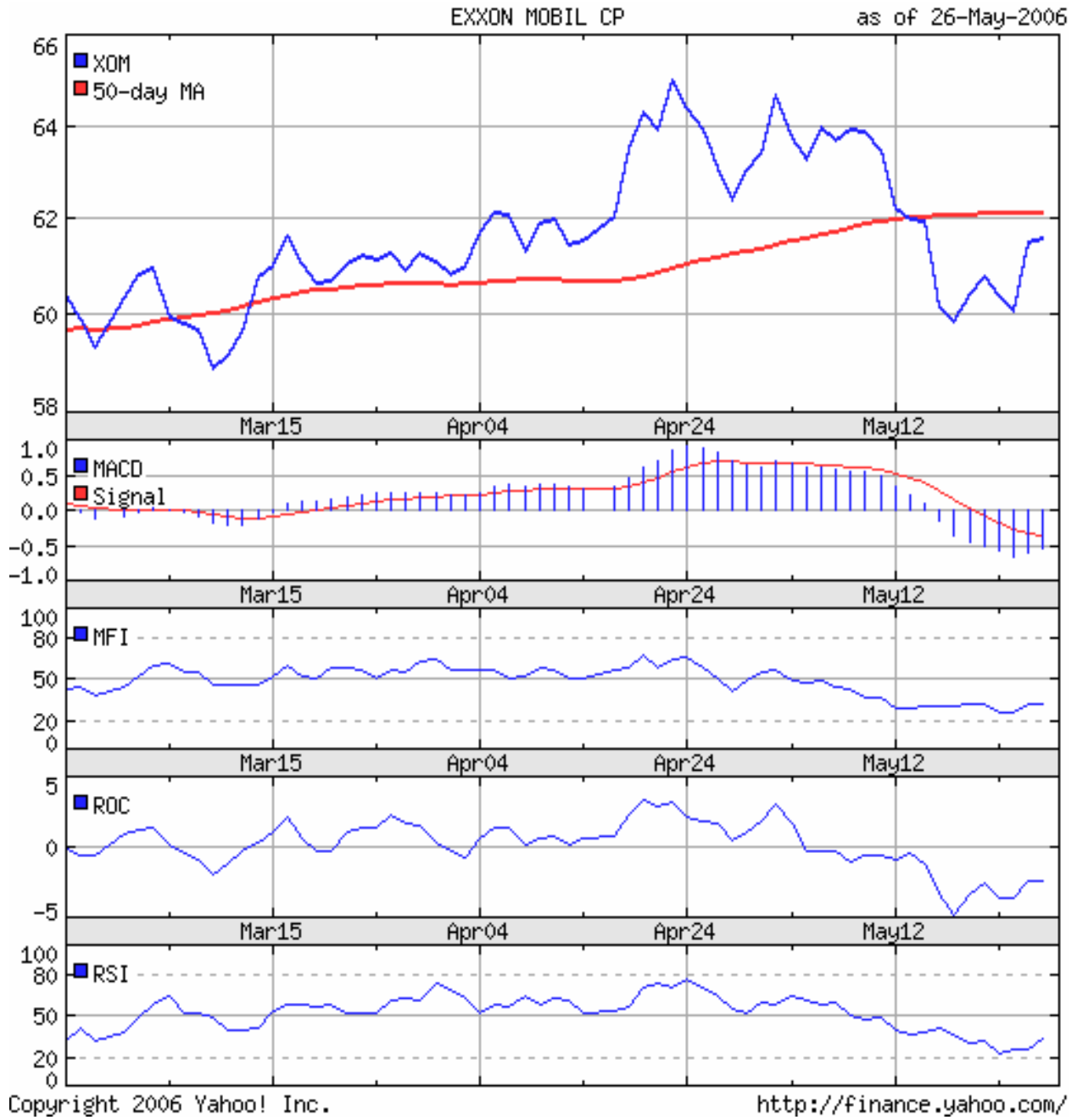
Figure 4.25 - Technical Analysis Chart for XOM (5/26/06) [5].
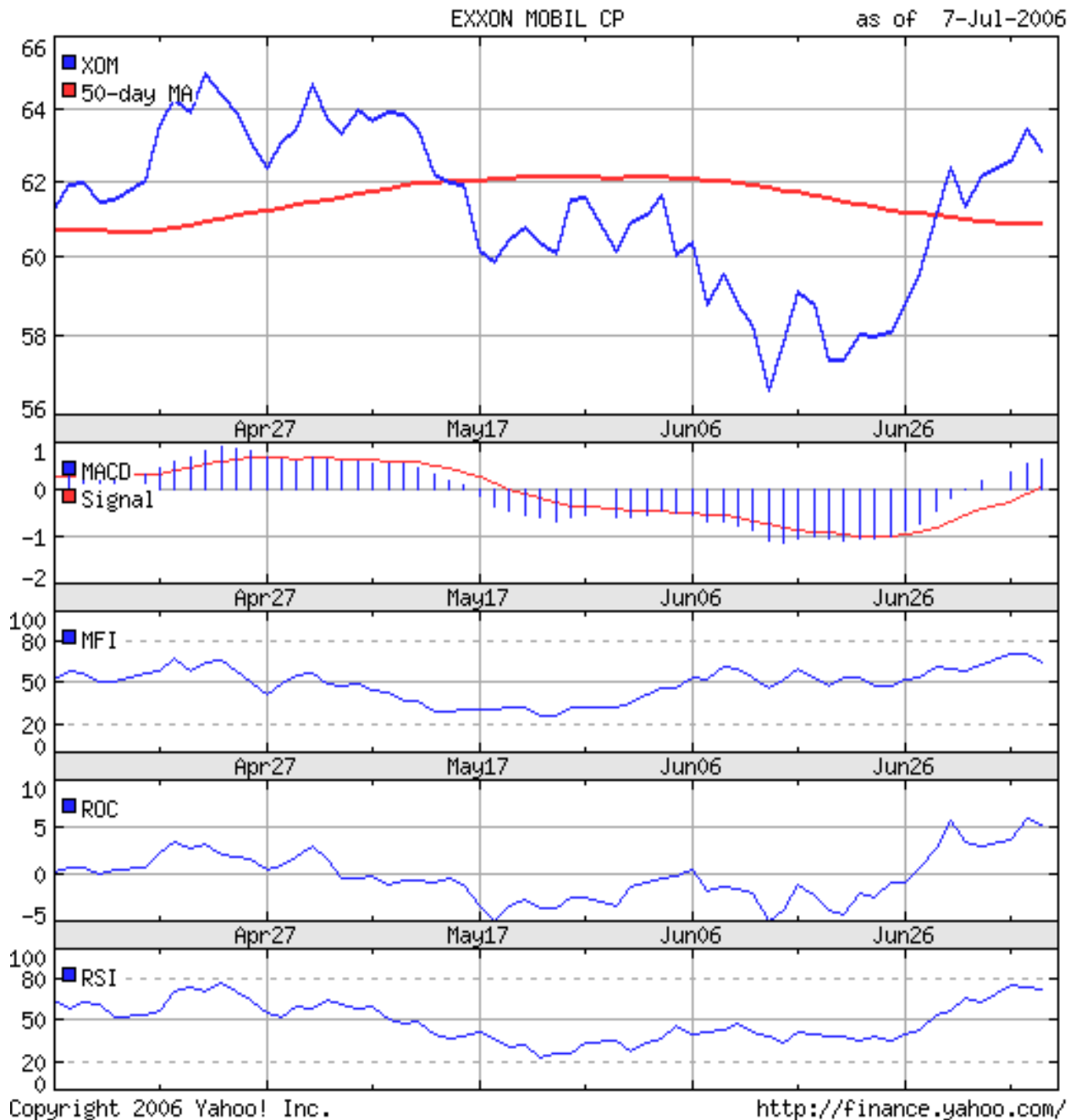
Figure 4.26 - Technical Analysis Chart for XOM (7/7/06) [5].

Exxon Mobil Corporation (XOM), founded in 1870 and based in Irving, Texas, operates in the major integrated oil and gas industry and engages in exploration, production, transportation, and sale of crude oil and natural gas. It also manufactures, transports, and sells petroleum and petrochemical products and has interests in generating electric power [5].

Figure 4.10 indicates that this stock is a good investment because the MACD was above the signal line, the MFI and RSI were low and the ROC has recently made a turnaround to a positive trend.

Dell Inc. (DELL)
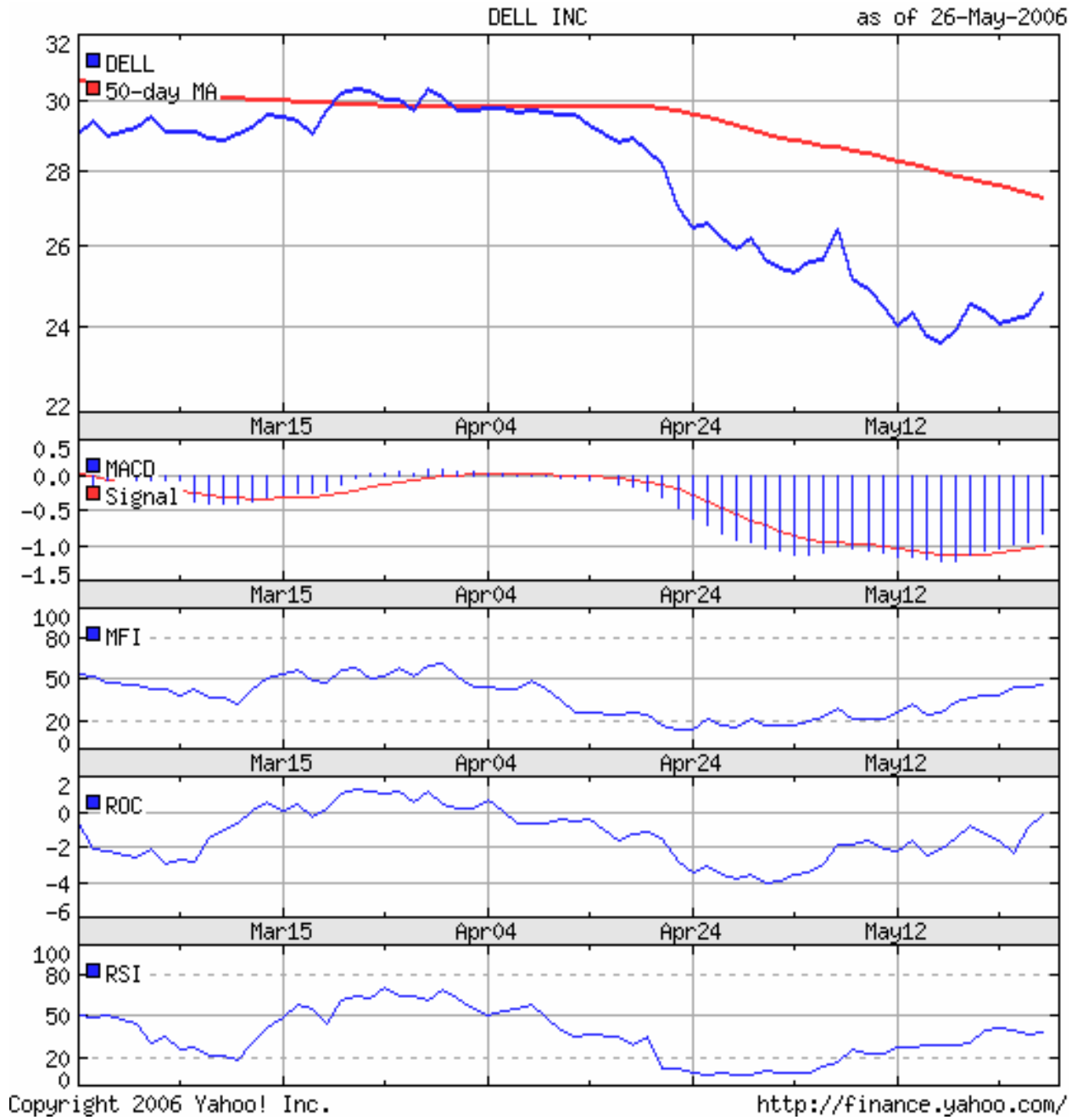
Figure 4.27 - Technical Analysis Chart for DELL (5/26/2006) [5].
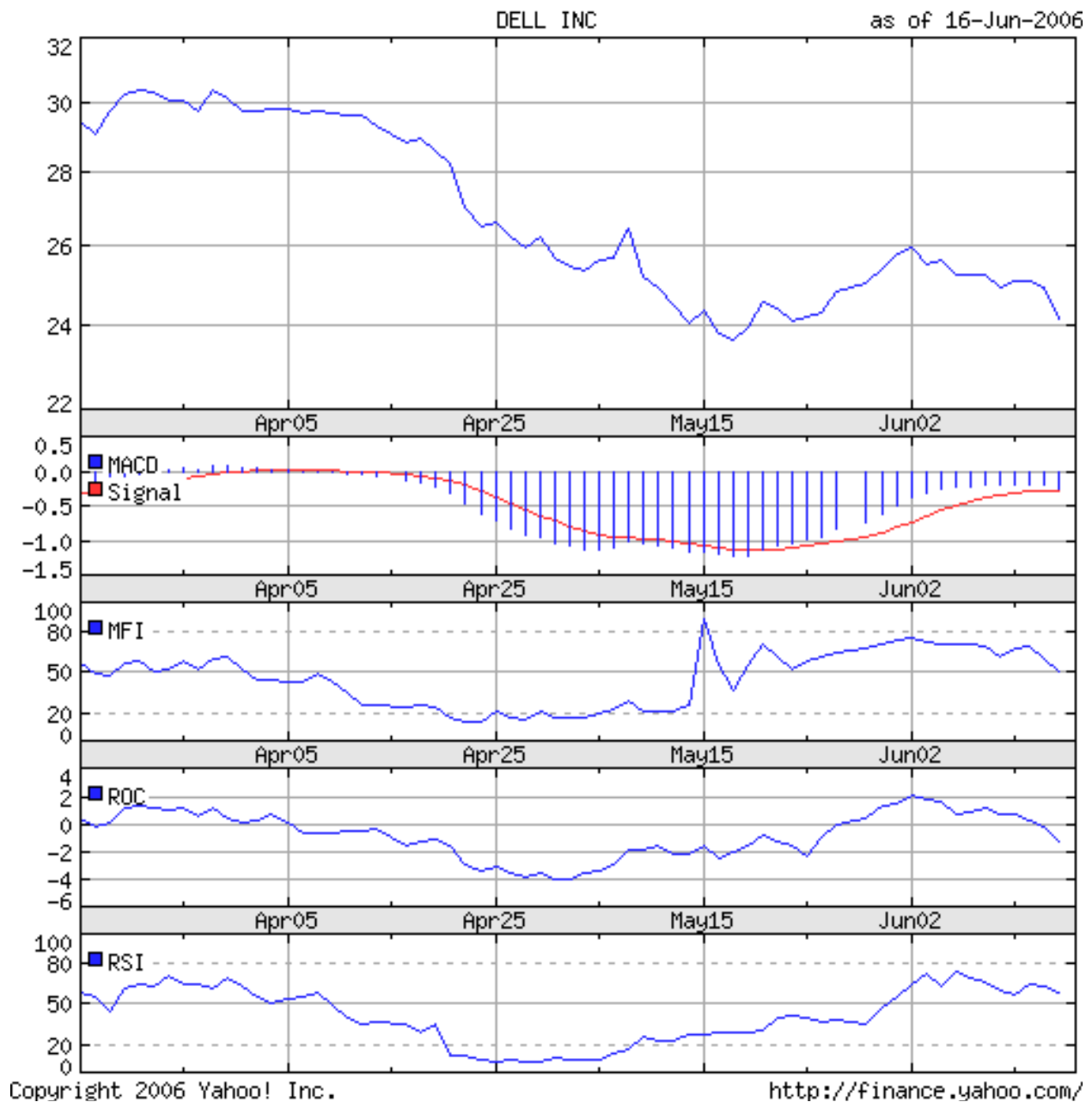
Figure 4.28 - Technical Analysis for DELL (6/16/2006) [5].

Dell Inc. (DELL) provides products and services in the personal computers industry. It was founded in 1984 by Michael Dell and based in Round Rock, Texas. The company designs, develops, manufactures, markets, sells, and provides support of computer systems and services worldwide [5].

DELL has experienced a recent decline in price, as shown in figure 4.12, but the MACD is above the signal line and according to the ROC the price is pushing for a positive momentum. The MFI and RSI at the ideal value of 20 and should be closely watched in case the stock becomes overbought and exposes the price to a sudden drop.

This stock was sold off on June 6th due to the price trend moving in a negative direction and dropping below the neckline. The MFI and RSI were also relatively high which indicates the trading price will likely keep decreasing. The stock was sold at $24.76 which netted a profit of $130.88 (1.31%) [5].

Vivo Participacoes S.A. (VIV)
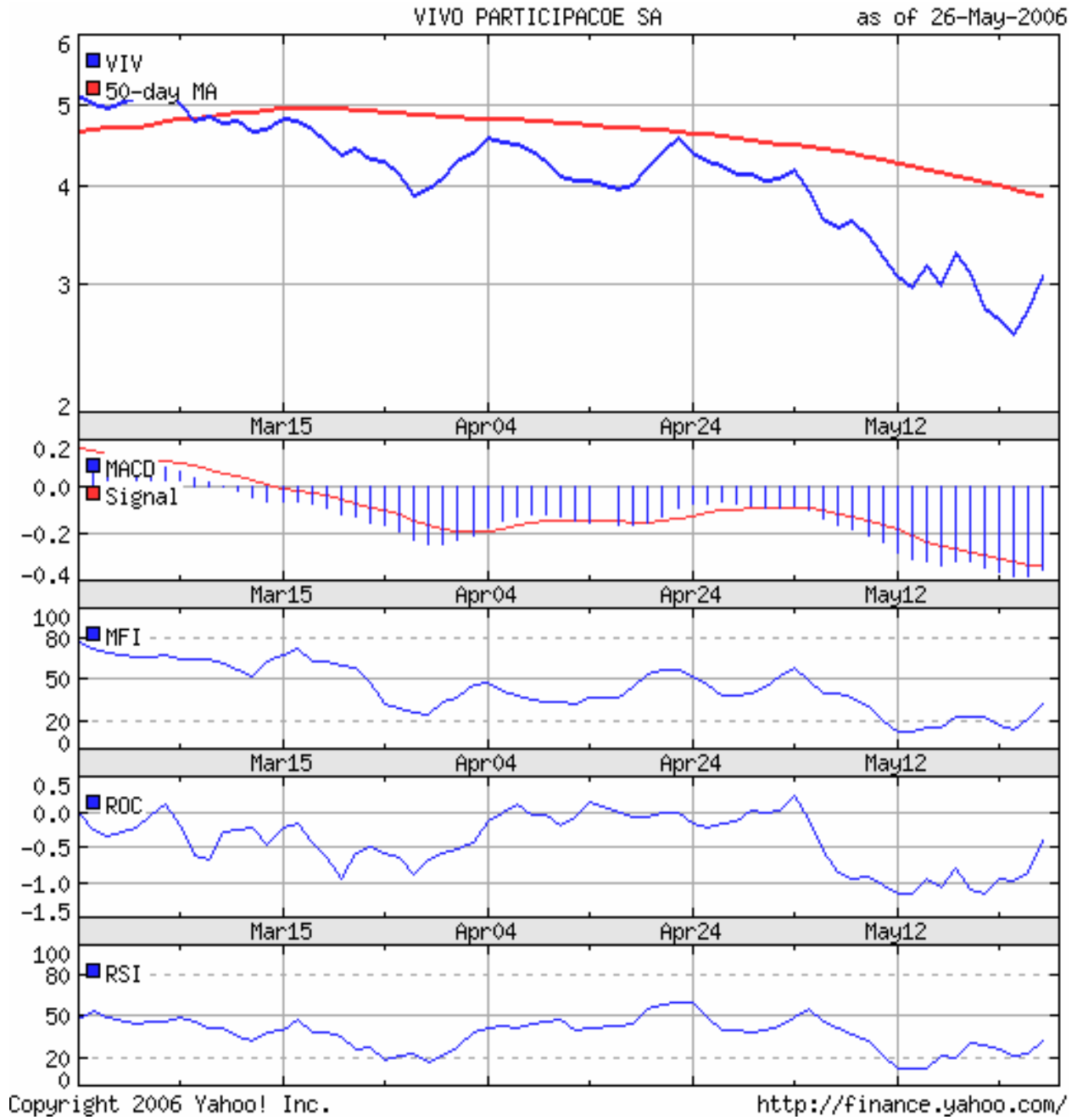
Figure 4.29 - Technical Analysis Chart for VIV (5/26/06) [5]
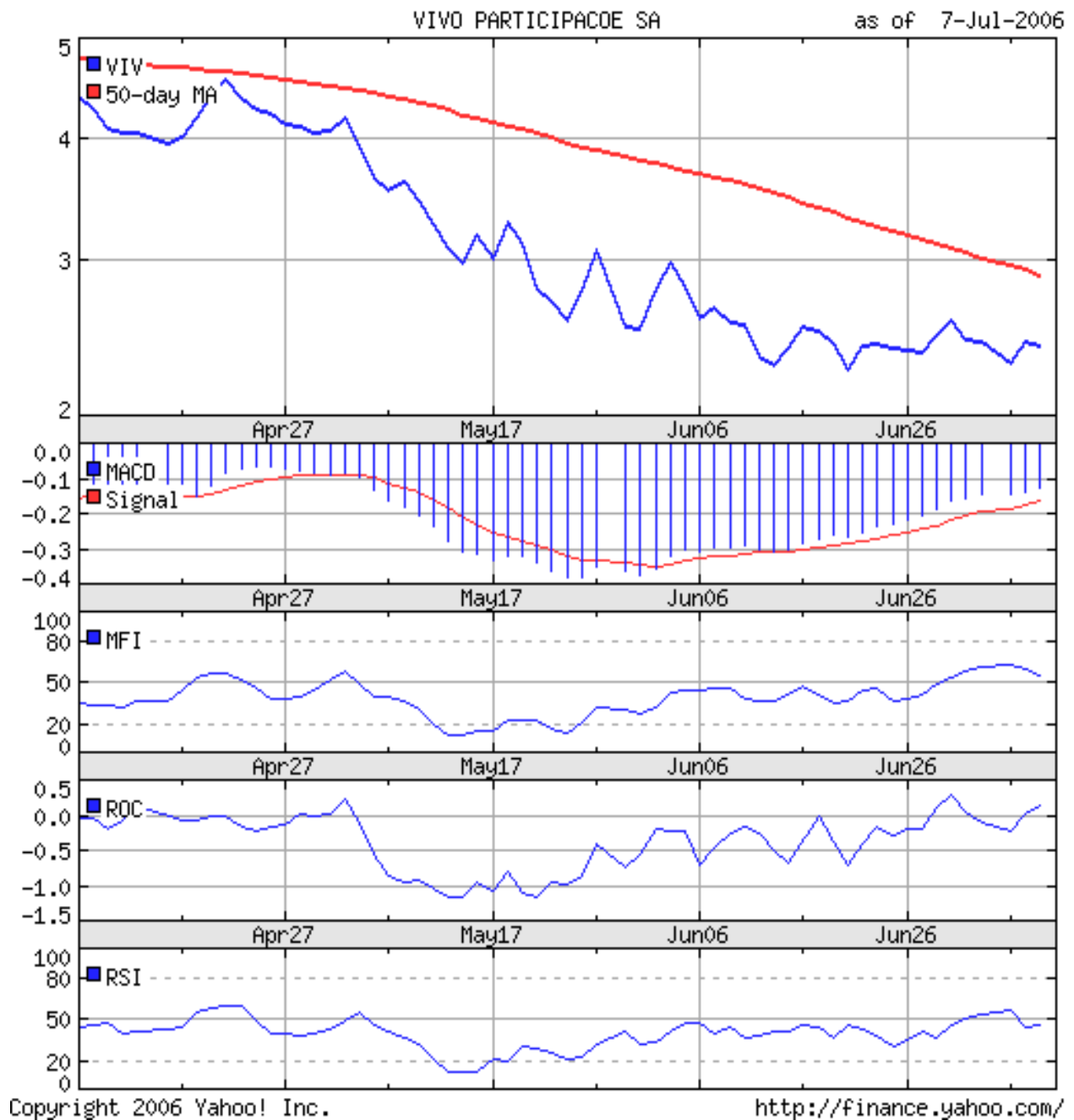
Figure 4.30 - Technical Analysis Chart for VIV (7/7/06) [5]

Vivo Participacoes S.A. (VIV) provides cellular telecommunication services in Brazil through both digital and analog technologies. It also sells cell phone handsets and accessories through its own stores and dealers [5].

According to Figure 4.14 this stock may be bound for a positive price trend because the MACD is above the signal line, the MFI and RSI are close to 20, and the ROC is showing a recent positive trend.

VIV was by far our worst performing stock. Initially, it had gained some value relative to the initial investment; however, it dropped in value very quickly to the point where we forced to sell it at a loss of 15.5%.

LM Ericsson Telephone Co. (ERICY)
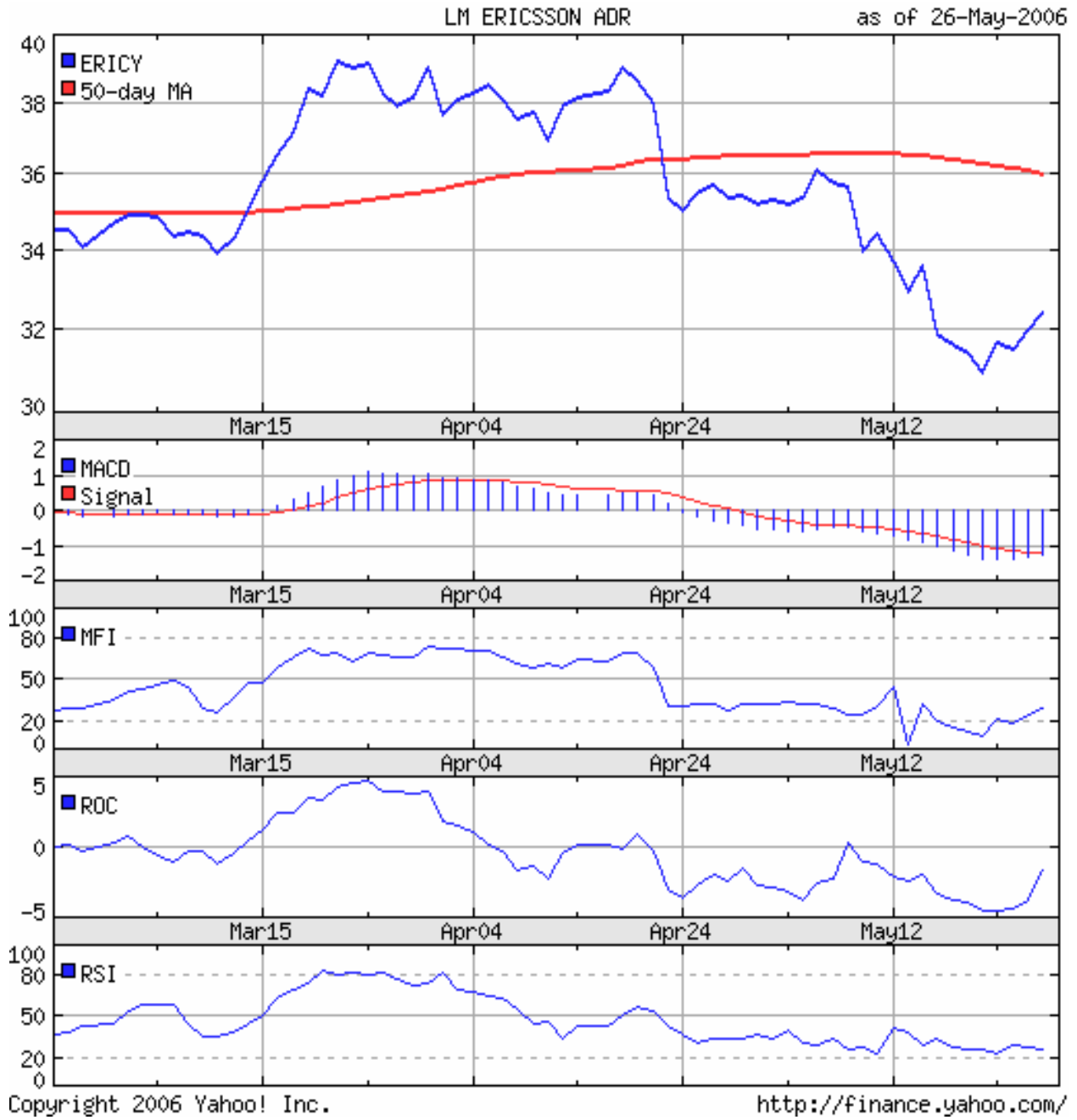
Figure 4.31 - Technical Analysis Chart for ERICY (5/26/06) [5].
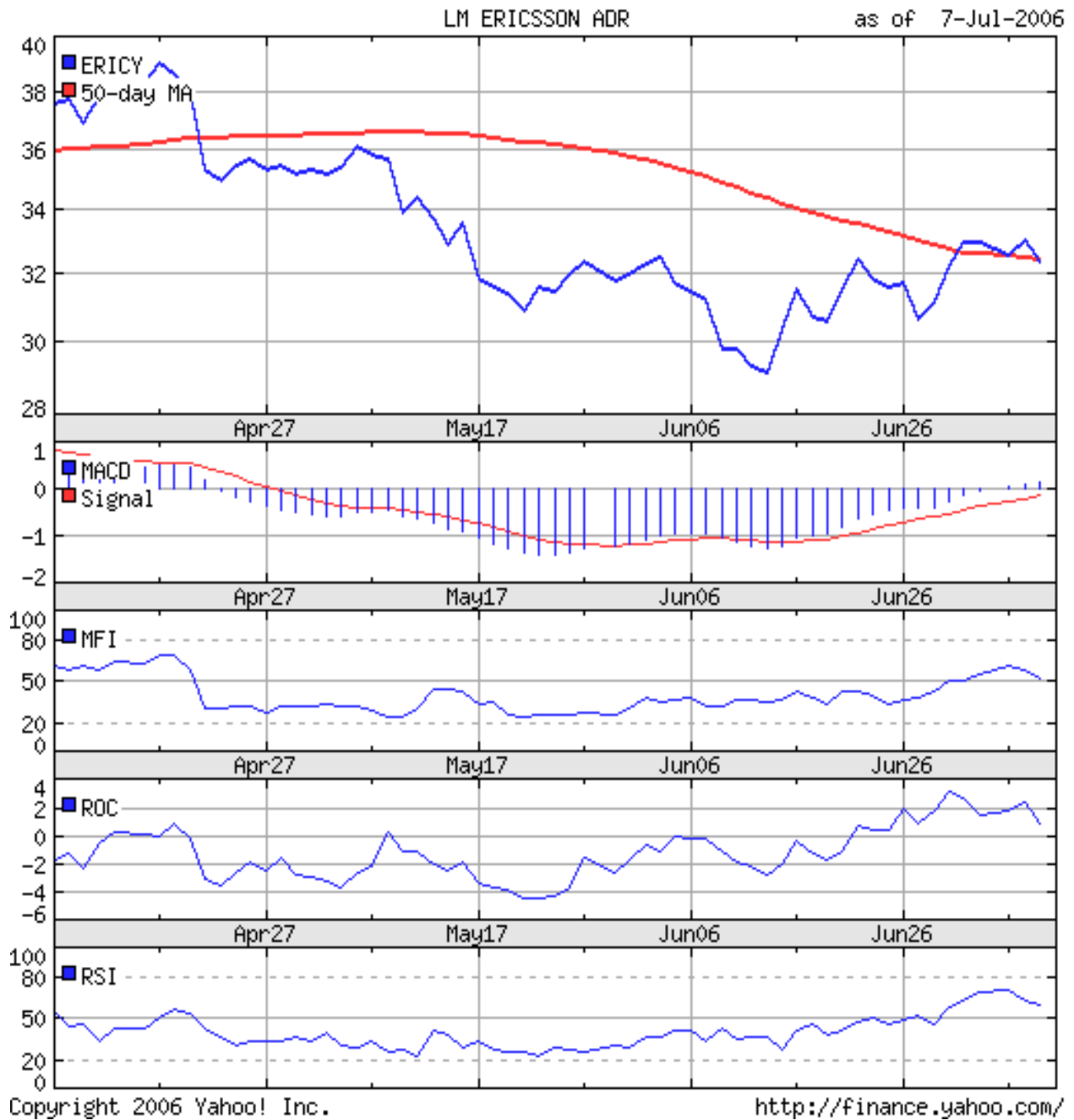
Figure 4.32 - Technical Analysis Chart for ERICY (7/7/06)

LM Ericsson Telephone Co. (ERICY) is a telecommunications company based in Kista, Sweden that provides equipment and services to mobile and network operators around the world. It also has a joint venture interest in Sony Ericsson that provides cell phones, accessories, and PC-cards [5].

According to figure 4.16 this stock should experience a positive price trend in the short term future because the MACD is above the signal, the MFI and RSI are both very low, and the ROC is showing a positive price momentum trend.

Intel Corp. (INTC)
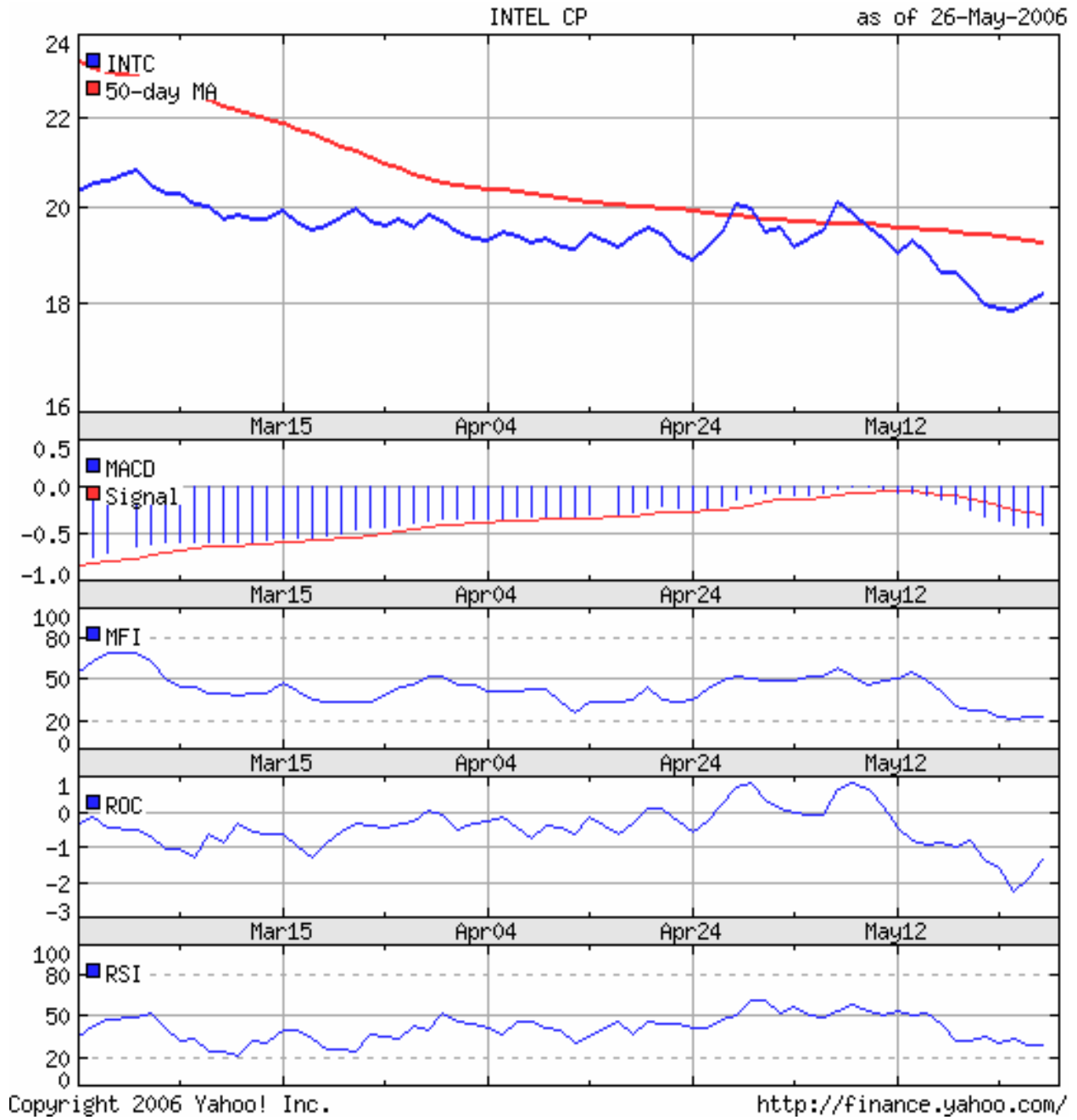
Figure 4.33 - Technical Analysis Chart for INTC (5/26/06) [5].
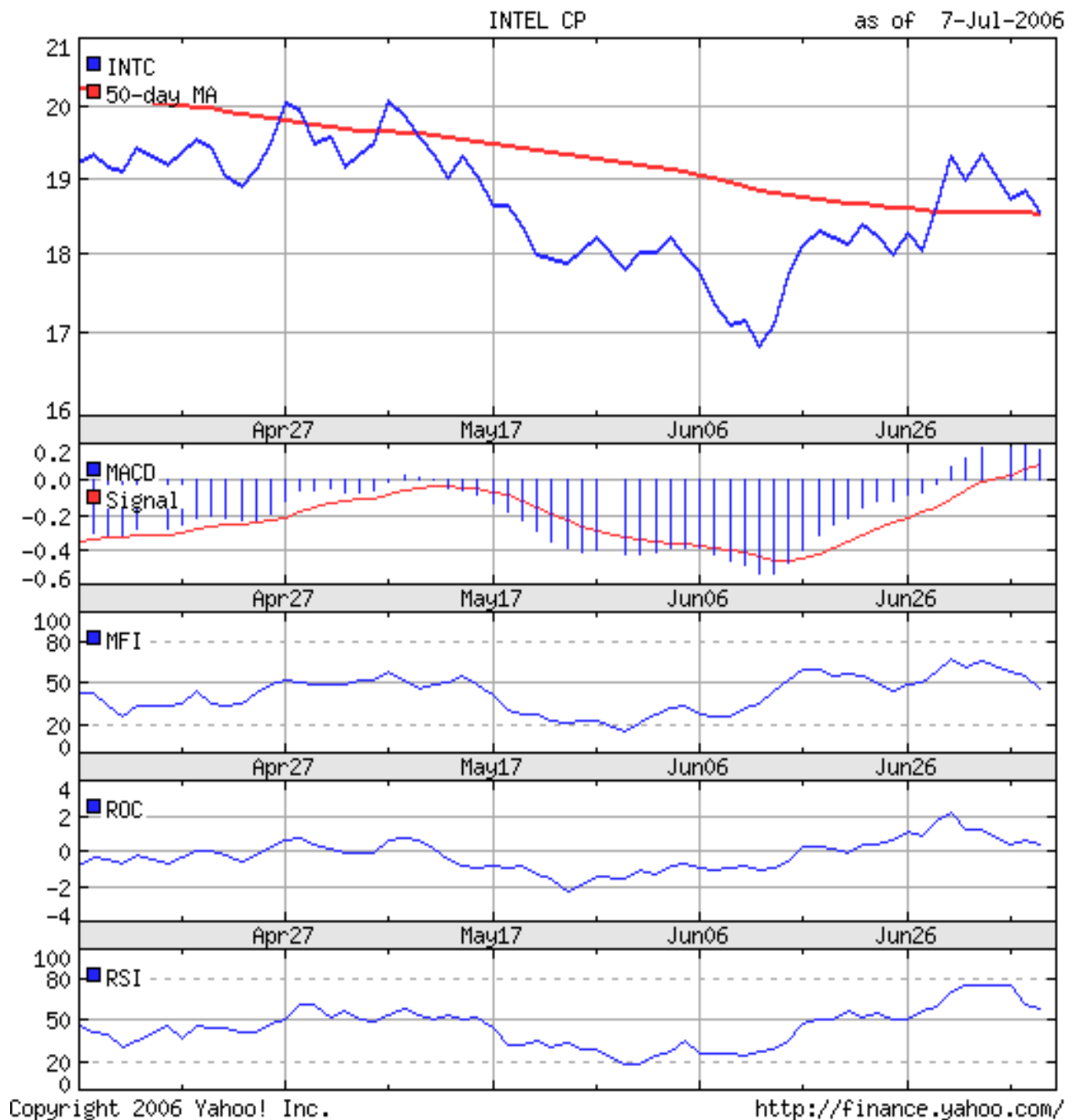
Figure 4.34 - Technical Analysis Chart for INTC (7/7/06) [5].

Intel Corp. (INTC), incorporated in 1968 and based in Santa Clara, California, manufactures semiconductor chips and develops digital technology platforms for the computing and communications industry. Its products include microprocessors, chipsets and motherboards,

flash memory, wired and wireless products, communications infrastructure, application and cellular baseband processors, and network [5].

This stock is a decent buy, according to figure 4.18, because the MFI and RSI are close to 20 and the ROC is moving towards a positive price momentum.
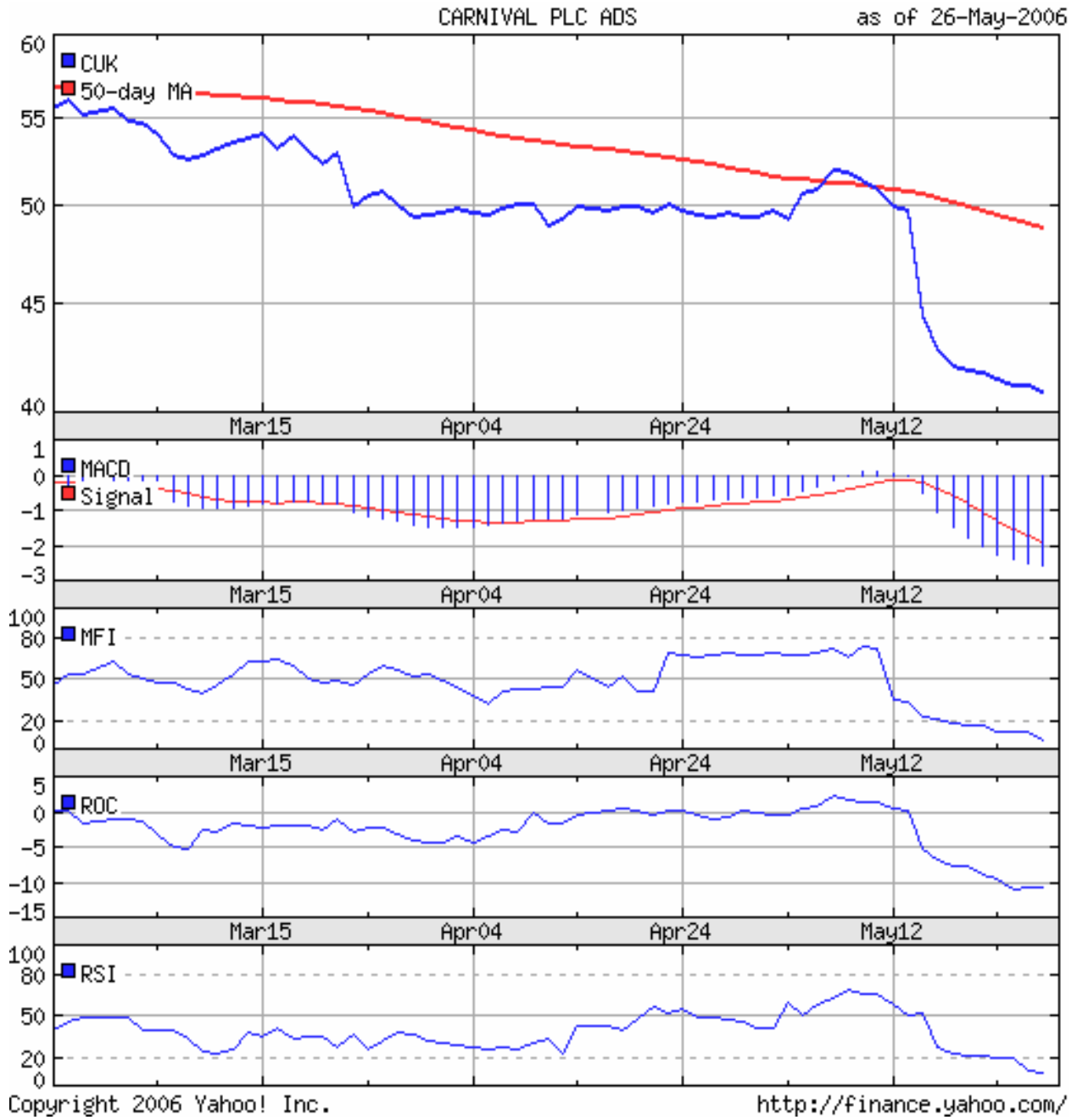
Carnival PLC (CUK)

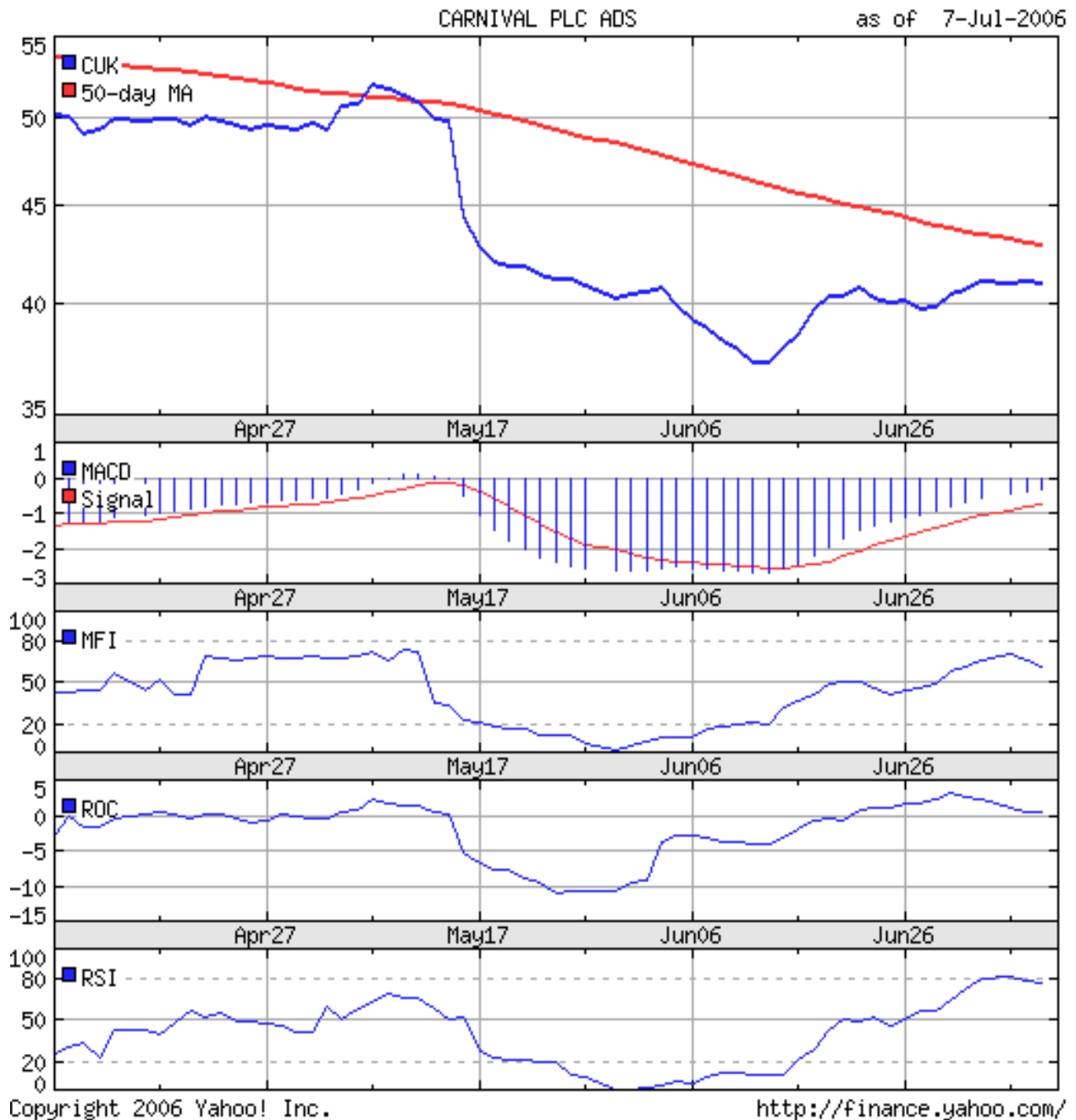Figure 4.35 - Technical Analysis Chart for CUK (5/26/06) [5].

Figure 4.36 - Technical Analysis Chart for CUK (7/7/06) [5].

Carnival PLC (CUK), operating out of London, England, offers cruises to different vacation destinations in North America, Europe, and Australia and owns a portfolio of 12 different cruise brands with a total of 77 ships [5].

In May 2006 the stock price suffered a huge price decline according to figure 4.20, but the MFI and RSI indicate this stock is oversold and the MACD is above the signal line indicating this stock may increase in price in the near future.

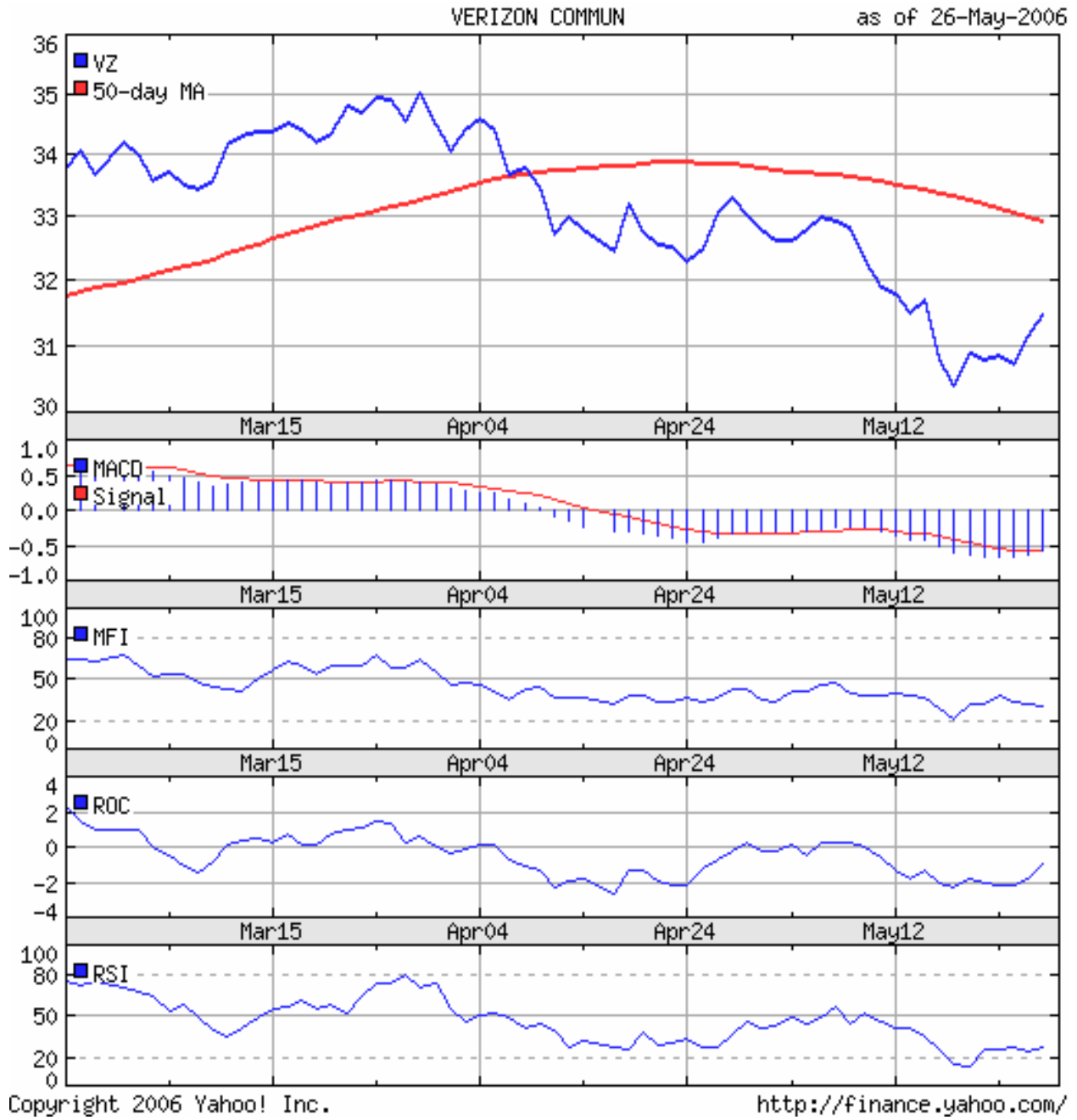**Verizon Communications Inc. (VZ)**

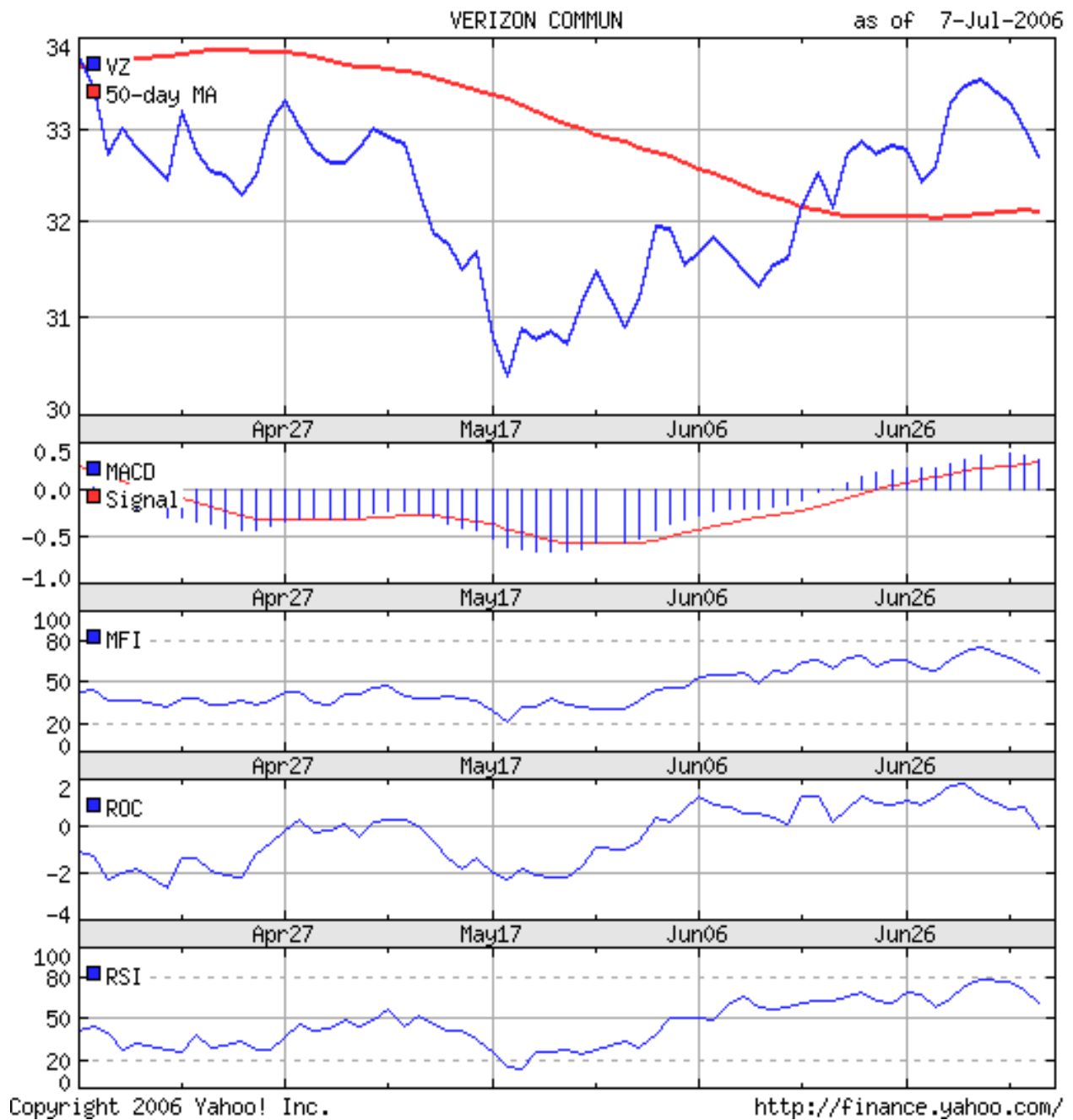Figure 4.37 - Technical Analysis Chart for VZ (5/26/06) [5].

Figure 4.38 - Technical Analysis Chart for VZ (7/7/06) [5].

Verizon Communications Inc. (VZ) offers worldwide communication services with domestic telecom and wireless, information services, and international segments [5].

The MACD is above the signal line and the MFI and RSI are both low which shows that this stock may endure a positive price trend. The ROC has also recently showed that the price momentum may become positive.
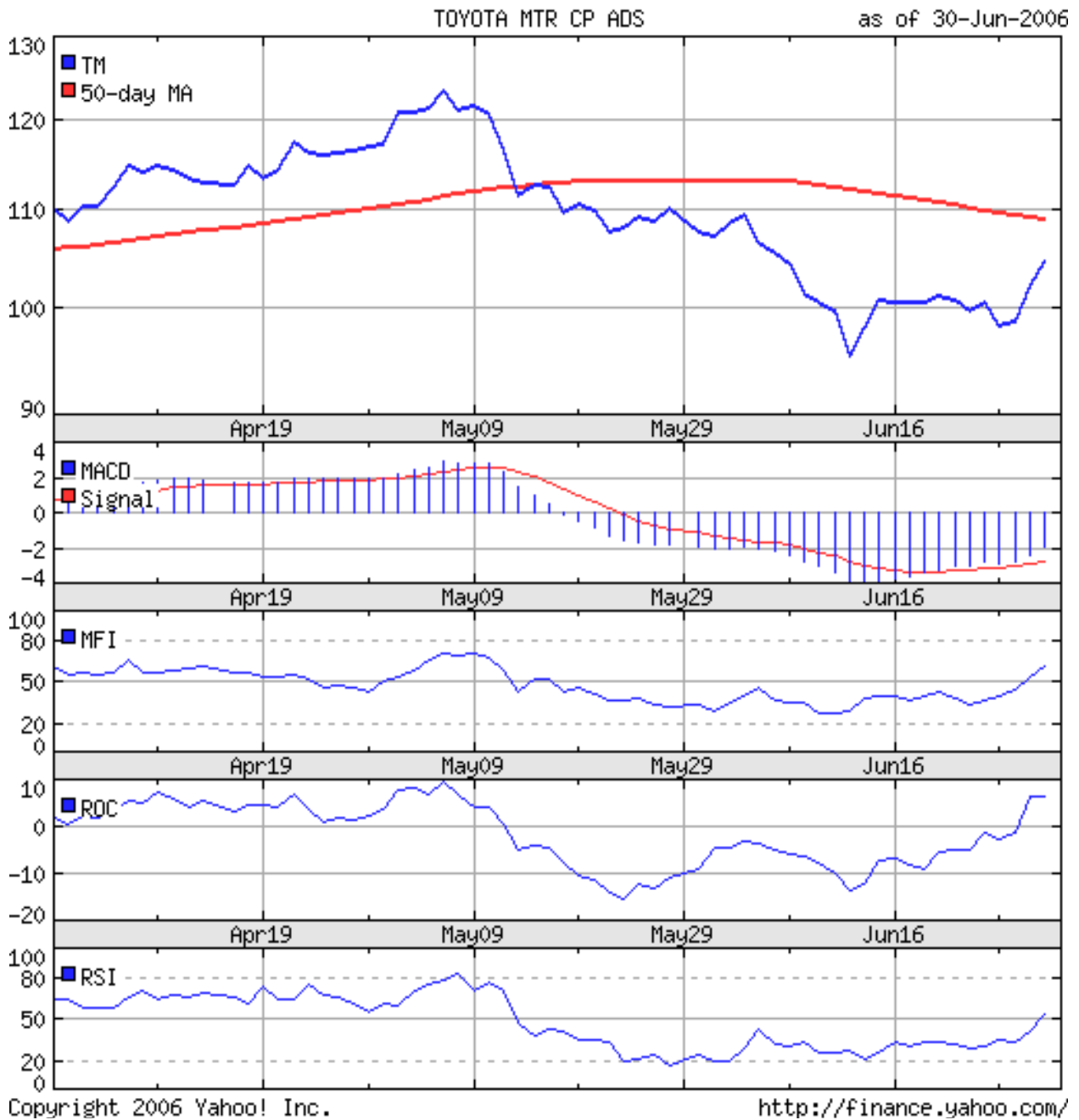
Toyota Motor Corp. (TM)

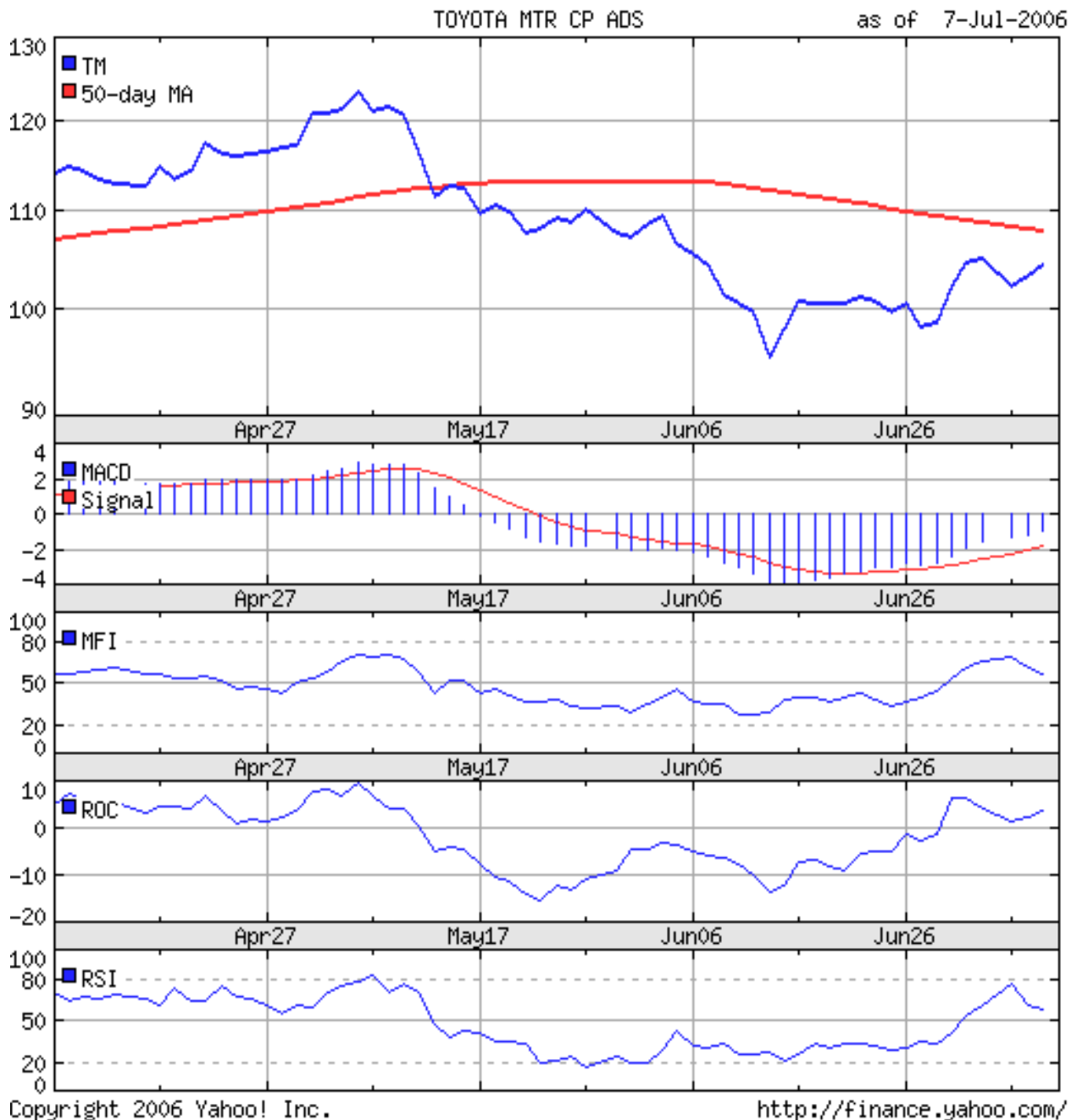Figure 4.39 - Technical Analysis Chart for TM (6/30/06) [5].

Figure 4.40 - Technical Analysis Chart for TM (7/7/06) [5].

Toyota Motor Corp. (TM) is a Japanese automotive company. It engages in the design, manufacture, assembly, and sale of various automobiles including cars, SUVs, minivans, and trucks. It also offers financial services to dealers and customers for the purchase or lease of

Toyotas.   The company also provides other services such as financing, insurance, loans, prefabricated housing and an e-commerce marketplace [5].

This stock was showing a very positive price trend and the ROC made this a very attractive buy.
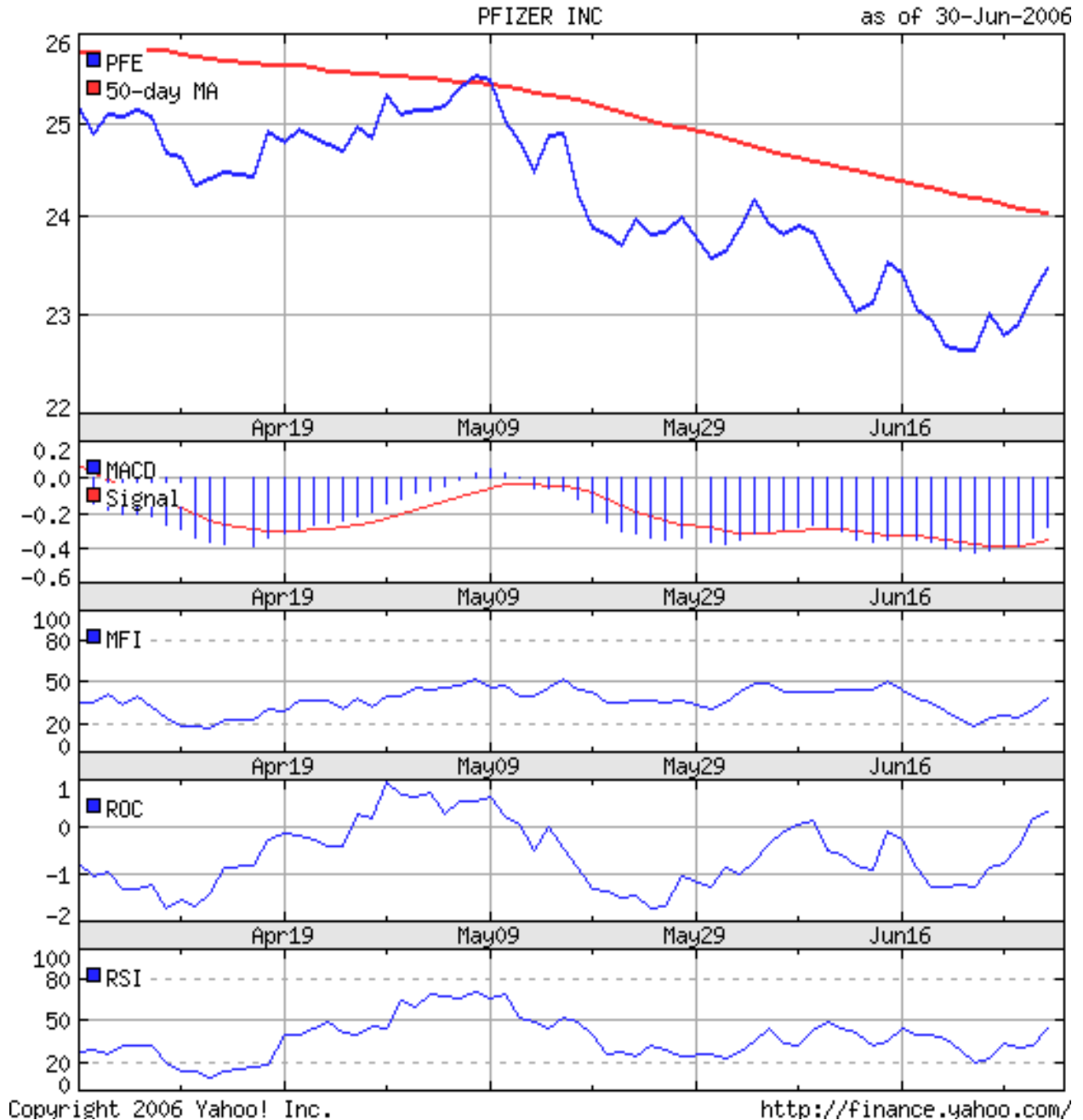
Pfizer, Inc. (PFE)

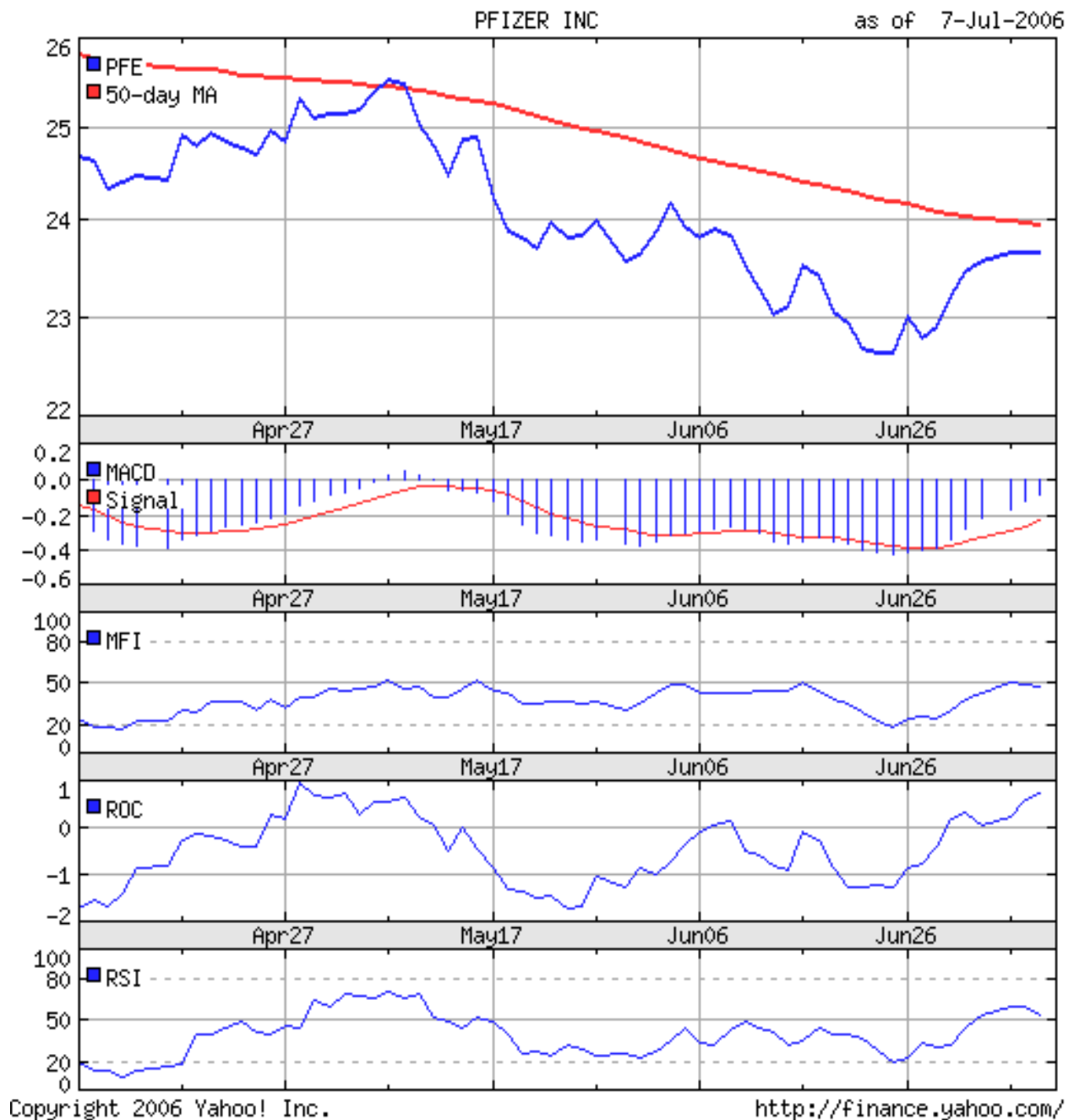Figure 4.41 - Technical Analysis Chart for PFE (6/30/06) [5].

Figure 4.42 - Technical Analysis Chart for PFE (7/7/06) [5].

Pfizer, Inc. (PFE) operates in the drug manufacturing industry and engages in the discovery, development, manufacture, and marketing of prescription medicines and consumer healthcare products for humans and animals [5].

The price trend for this stock is positive and the MFI and RSI indicators show that this stock is not overbought yet, while the ROC is displaying a positive price momentum.

4.2.3 Conclusion

The portfolio for the technical analysis simulation experienced mixed results. Overall, the portfolio outperformed the S&P 500 but we still ended up losing money off our initial investment. While it's never a guarantee that an investment will pay off, at least we did manage to beat the market even by a slim margin. We consider this a minor success, but one important lesson learned here was that one poor investment can ruin an entire portfolio. We had quite a few stocks that made money during the simulation period and some that lost a little bit, but none showed such extreme price changes as VIVO. Obviously, this makes it extremely important to study every stock carefully and pay close attention to the market especially when investing for short-term gains such as this case.

It's not easy to determine whether this trading strategy can be an effective one. The portfolio did outperform the market, but it was only one sample and there is a lot of inexperience involved. We may use this strategy again in the future, but with caution as short-term trading is always very volatile.

4.3 Selling Short

In this selling short simulation I am buying stocks which I expect to drop in price. I spent close to $50,000 split up equally among 5 stocks. In order to select these stocks I looked at previous market trends, and information about the companies found in the news which would indicate that the value of the stocks would decline. I looked at the P/E and if it was between 0 and 13 it indicated that the stock would most likely decline. In addition, I looked at the previous

few months to determine the most likely movement of the market value. Several companies had recent problems which where announced in the news, which often influences the buyers to sell quickly, which is what is required of this simulation. This was run over the course of a single week, which is shorter than the usual simulations.

4.3.1 Company Data

UBS AG

This company was selected due to a previously negative trend in its stock prices. The graph of its value over the last 3 months is seen here:

Figure 4.43 – Trading Price of UBS AG [5].

The price had recently gone down steeply during this month, and was maintaining a low value. The P/E of the company was 10.40, which was well under 13 indicating a decline in the market value. In addition there was a recent article in Business Week which indicated that the CEO had invested money in their competition's stock, which shows that those on the inside had little faith in their company, which inspires the investors to do the same. This was also combined with a press release earlier in the week which indicated that investor optimism was on the decline, reaching all time lows recently, as seen in the recent dip in prices of the stock. This release

caused another small decline in the value, and there was no indication that trend would change. Given this, I felt that there was a large likelihood that the stock would continue to decline quickly over the next couple of weeks.

France Telecom AD

This company was having troubles recently, falling drastically in price to the lowest it has been in over a year. It has shown a very steady decline over the past year, and it could be assumed that this trend would continue.

Figure 4.44 – Trading Price of France Telecom AD [5].

Specifically over the more recent months the price has been fluctuating more, but still on a continuing downward trend. It had a P/E value which was 7.93, right in the middle of the bottom bracket showing decline. In addition there were going to be more stringent regulations placed upon the industry, which means there will be a decline in the profitability of the company as it has to incur the costs of fulfilling the new requirements. This decline in profit is going to be reflected in the value of the stock, as investors know the company will be facing difficulty.

Southern Copper C

Southern Copper has one of the lower P/E ratios of only 8.99, and prior to his last week it had seen a sharp decline in value.

Figure 4.45 – Trading Price of Southern Copper C [5].

When purchasing this stock it had not seen the tail end of the recent upswing shown in Figure 4.45, only the decline and then a minor bounce back from that. With that fall combined with the low P/E value it showed that there was a high likelihood that the stock will decline further in value over this last week.

Legg Mason Inc

Legg Mason has had a strong negative trend in its stock over the last few months, dropping nearly 40 points, then staying downward. The last three months are shown here.
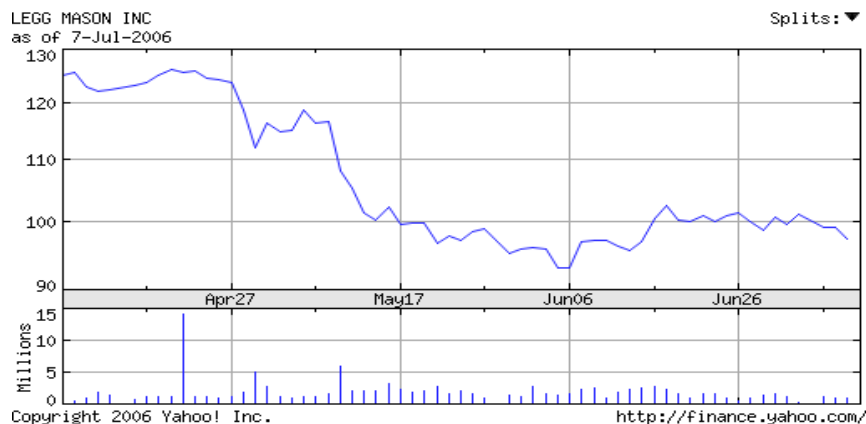

Figure 4.46 – Trading Price of Legg Mason Inc [5].

The P/E of this stock was only 11.06. In the news there was a recent sex scandal with one of the executives at LM, which has a negative impact on the stocks, which was shown in the recent dropping of its value. Also, there was a lot of reorganization of the management of the company, which was met with over a 2 dollar drop in value the day it was announced.

Centex Cp

This company has seen a steady decline over the last 6 months, from 80 to the mid 40s, and had moved up only to 50 at the time of purchase. This decrease in value was predicted to continue further, making it an ideal investment for the purposes of selling short.

Figure 4.47 – Trading Price of Centex Corp [5].

Of these 5 stocks this had the lowest P/E of only 5.25, a strong indicator that this decline was not yet over. An article on The Street by Dan Fitzpatrick said that the value of Centex had been falling and was going to continue that way, with no signs of rallying upwards, saying it was only the beginning of the bottom. If that was true we would be able to see it drop further and sell once it hit that low.

4.3.2 Selling Short Portfolio

Date	Symbol	Buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss
6/30/2006	UBS	Buy	109.7	91	9982.7	0
6/30/2006	PCU	Buy	89.13	112	9982.56	0
6/30/2006	CTX	Buy	50.3	109	10009.7	0
6/30/2006	FTE	Buy	21.86	457	9990.02	0
6/30/2006	LM	Buy	99.52	100	9952	0
TOTAL					**49916.98**	**0**

Table 4.15 – Initial Selling Short Portfolio

Week 1 Performance:

In the first week the investments increased in value by a combined total of $315.11 which is going to cause me to lose that amount, meaning I will need to pay $50232.09 back on the $49916.98 I received in the loan. This amounts to a loss of .00631% of the original investment. This table is the individual performance of each of the 5 stocks I purchased, which had 4 increases and 1 decrease, costing me a loss for this week.

Date	Symbol	Buy/ Sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss
6/30/2006	UBS	Sell	109.7	91	9982.7	0
6/30/2006	PCU	Sell	89.13	112	9982.56	0
6/30/2006	CTX	Sell	50.97	109	10009.7	0
6/30/2006	FTE	Sell	21.86	457	9990.02	0
6/30/2006	LM	Sell	97.33	100	9733	0
TOTAL					**49916.98**	**0**

Table 4.16 – Selling Short Portfolio Results

These are the individual values of the 5 stocks over the past week, showing their values at each day.
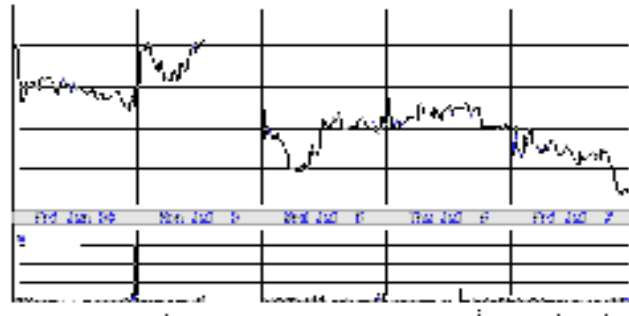
LM:

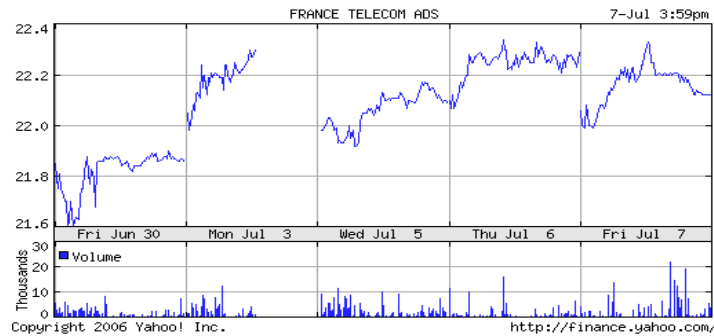Figure 4.48 – Trading Price of Legg Mason Inc. during simulation period [5].

FTE:

Figure 4.49 - Trading Price of France Telecom AD during simulation period [5].

UBS:

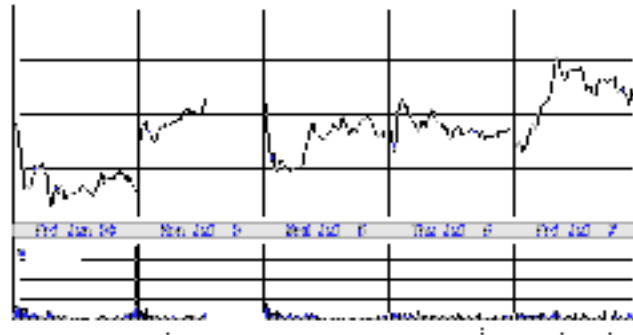Figure 4.50 - Trading Price of UBS AG during simulation period [5].

PCU

Figure 4.51 - Trading Price of Southern Copper Corp. during simulation period [5].

CTX:

Figure 4.52 – Trading Price of Centex Corp. during simulation period [5].

Final Selling Short Portfolio Analysis:

After only seeing this strategy in action for a week we can see why it might not be the best option for an investor. The main difficulty occurs in the general trend of the stock market to rise. Over any long period of time it has shown that the stock market is constantly increasing, and even given evidence that the stock might decline, it is always a highly risky assumption. Another difficulty is the factor of randomness associated with having it done only over a single week. If I had more time to watch the growth of these stocks the results might have followed my predictions better. The prices can sway up and down rather quickly over a short period of time,

but when looked at over the long term, more reliable predictions can be made about the future of a stock. The overall value of the S&P 500 did in fact fall, which would have been good for my simulation had it been more diversified over the companies on the market. The limited number of stocks just allowed for individual performances to overcome the general decline of the market. This is a graph of the value of the S&P 500 over the last 5 days the simulation was run.

Figure 4.53 – S&P 500 Index during 5-day simulation period [5].

Over the last few months it has also been declining, which leads me to believe that if the simulation was longer I would have gotten more positive results from this method of investing. However, there would also be a greater risk of a company starting to rise to greater heights than it had begun at, with the possibility of making me lose more than my original investment.

4.4   Market Timing

Most investors, stock brokers, and economists will say timing the market is impossible because there is no way to predict the future with absolute certainty. They say anytime is a good time to buy stock because in the long run the market will go up. Ben Stein and Phil DeMuth performed a number of analysis on the stock market from 1901-2001 and presented evidence to suggest that it is actually possible to time the market. They looked at the S&P 500 Index and showed that the average total returns are higher when the index is only purchased when stock was determined to be "cheap" compared to purchasing stock at all times. They defined stock as being cheap or expensive by comparing four different parameters to its respective 15-year moving average. These parameters were price, P/E, dividend yield, and fundamental value. Fundamental value can be defined as dividing a company's replacement cost into the price of all its stock. This is known as Tobin's Q and is directly correlated to price-to-book ratio, a readily available statistic. When price, P/E, and fundamental value were below and dividend yields above their respective moving averages the stock is said to be cheap. [2].

Their analysis showed that total returns were much better when following any one of these guidelines rather than investing at all times.

5. Conclusion

We have gained invaluable experience for the future during this project. There is a lot of information to digest and investment results are very heavily influenced by experience, determination, and strategy. During the simulation period the market was at its low for the year, which made it tougher to succeed. However, our goal was to outperform the market and gain the experience to be a successful investor in the future which we feel we accomplished.

References

1. Malkiel, G. Burton. <u>A Random Walk Down Wall Street</u>. W.W.Norton & Company: New York, 2003.

2. Stein, Ben and DeMuth, Phil. <u>Yes, You Can Time the Market!</u>. John Wiley & Sons: New Jersey, 2003.

3. Mladjenovic, Paul. <u>Stock Investing for Dummies</u>. Wiley Publishing: New York, 2002.

4. Graham, Benjamin and Dodd, David. <u>Security Analysis</u>. McGraw-Hill: New York, 1940.

5. <u>Yahoo! Finance</u>. 2006. Yahoo Inc., Commodity Systems, Inc. (CSI)., Reuters, Comstock. http://finance.yahoo.com

6. <u>Investopedia</u>. 2006. Investopedia, Inc. http://www.investopedia.com

7. <u>Wikipedia</u>. 2006. Wikimedia Foundation, Inc. http://www.wikipedia.org