Trading, Investment & Portfolio Management

Interactive Qualifying Project Report

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Abstract

The primary objective of this project was to develop a fully-functional, automated trading system that generates profit, while gaining knowledge and insight about the methods and theories associated with trading in the process. The early portion of this report will encapsulate the knowledge we've retained throughout the duration of this project, such knowledge is crucial to understanding the complex nature of trading, specifically focusing on the Foreign Exchange (Forex) Market. Once the vital background knowledge pertaining to trading in the Forex Market has been thoroughly elucidated, the report proceeds to explain the methodology behind developing a trading system. After this methodology section, the report than provides a detailed explanation of the specific aspects of the trading system developed by each individual within our group, as well as the results of each of these trading strategies. Lastly, this report delves into the focal objective of the project; discussing every facet in the scientific methodology taken to generate our group's final automated trading system, as well as detailed results. The report is then wrapped up with a conclusion that summarizes all that we have learned throughout the course of this project, as well as several recommendations of how this excellent project can be improved further.

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Chapter 1: Introduction

Progressing relatively linearly alongside the development of civilizations has been the simultaneous quantization and standardization of the value of objects. Without these two traits, it would be senseless to state that two arbitrary objects are proportional to each other. But this is precisely what is meant when we go to a supermarket and pay a certain amount of money for a given amount of goods. How else would we be able to say that an apple is worth 33 cents while a box of cereal is worth 2 dollars and 50 cents? Initially markets were run off of a bartering system where merchants would use their discretion to decide if a certain amount of offered goods were worth what they had to sell. Through centuries of trade, a more standardized measure of worth developed that has come to be known as currency. Different countries have different currencies and one currency may be stronger than another as a result of a variety of issues. It is this difference in relative strength that is of primary concern to *currency traders*.

The global stage where the exchange of currencies takes place is named the Foreign Exchange market (Forex). Here, two currencies are paired together based on the relative strength of one compared to the other. This relation is expressed as how many units of a currency one unit of a different currency will purchase. From a somewhat broader perspective, people are betting on the strength of nations since the state of a countries economy will tell you a great deal about how the country is doing overall. To trade in a stock market, it is important to understand a company's structure and how it matches against other companies. Similarly in the Forex market, it is important to understand how nations conduct themselves as well as their interactions with other nations and their responses to local and global occurrences. This aspect of the Forex market is what makes the risk aspect of trading that much more pronounced.

The risk associated with currency trading is much higher than in the stock or commodity market due the fact that a small country's actions can be much more far-reaching, long-lasting, and even more devastating than a small company's. Therefore it is imperative that an individual have a strict trading strategy that anticipates the volatility that can accompany currencies. With this in mind, it is possible to be incredibly successful in the Forex market through the use of scientific analysis and a host of technical indicators.

Mastering the Forex market is anything but a simple task. It is a complicated arena, and entering it without the proper training and mind set is a dangerous activity. With numerous indicators and practically infinite amount of approaches, tackling the Forex market can be quite intimidating to a rookie trader. It is essential for new comers to follow the proper protocol before risking real money. Learning and understanding the rules and regulations of this market is a necessary first step. Entering the market without comprehending how it functions is a clear and certain path for disaster. After studying the broad concepts of the Forex market, researching the vast amount of indicators and strategies already available is crucial. Once a wide range of methods are familiarized, personal strategies can be formed. The best traders are able to combine indicators and ideas to form a strategy that fits their risk tolerance and time availability. Obtaining all of the knowledge available regarding the Forex market would still not be enough to become a successful trader. Success will only be obtained after significant amount of time is put into practicing the art of trading. A strategy is not ready to enter the market until it has been thoroughly optimized and back tested. It was the goal of this Interactive Qualifying Project to not only develop a deep understanding of the Forex market, but personally and as a team, construct trading strategies that will work most efficiently at producing a profit.

1.1 Project Description

The goal of this project was to ultimately generate a final, fully-functional, and profitable automated trading system for our group in the Foreign Exchange (Forex) Market. Collectively, our group possessed only a minor amount of background knowledge about trading and the Forex marketplace when beginning this project. However, the knowledge and insight provided by our advisors, as well as various additional learning tools, allowed us to cultivate our trading knowledge and the ability to effectively utilize fundamental and technical analysis to develop a strong theoretical background to trading, thus fostering the development of our trading skills. TradeStation was the trading platform utilized throughout the course of this project, using simulated accounts so that no physical money was ever at stake. Since no real money ever exchanged hands, it allowed for extensive research and strategy development to be conducted with no risks. Additionally, utilizing simulated accounts provided the benefit of trail-and-error trading, to become more accustomed to trading in general, prior to waging real funds on each trade. Another vital skillset attained during the course of this project was the ability to effectively analyze and interpret articles of news. This insight gained was then utilized to potentially capture trends generated from the profound effects world news can have on currencies in the Forex Market. Each individual within the group was then able to develop this newfound knowledge, and skillset attained, into a trading system of their own by the latter half of this project. Ultimately, various successful aspects of each individual's trading system were then combined, optimized, and developed into a final automated trading system created to the best of the group's ability. This report elaborates in further detail on the knowledge gained, as well as each individual's findings and results generated from the trading systems that were developed, throughout this project

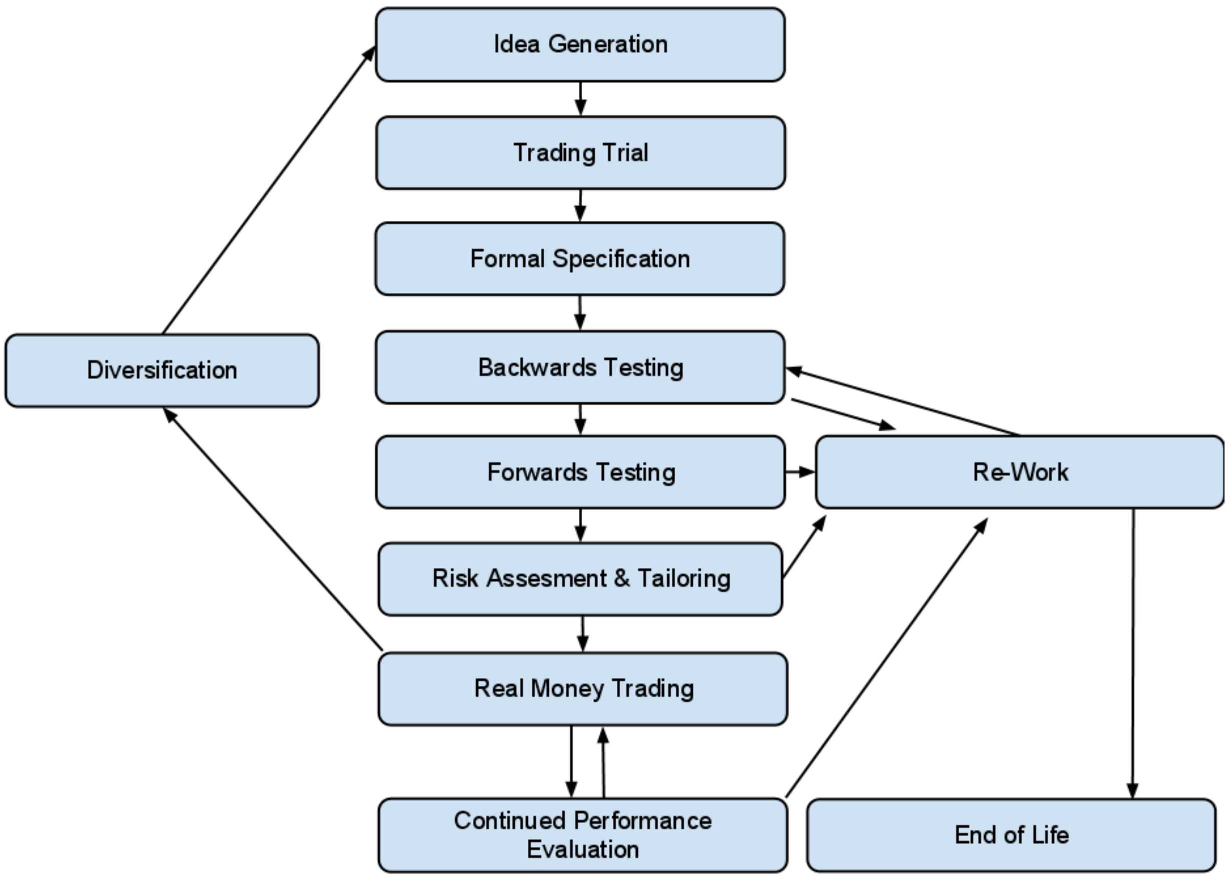

Figure 1: Idea behind Trading System Development

Chapter 2: Background Information

This chapter encapsulates and defines many of the most important aspects and terms associated with trading, vital information that all traders must obtain and master in order to comprehend the complex world of trading. Once the critical trading terms have been methodically and thoroughly explained, Chapter 2 proceeds to discuss the two forms of analysis: fundamental and technical analysis. This chapter will then introduce, and discuss in-detail, several of the most commonly utilized trading platforms. Chapter Two concludes by explaining the crucial concepts of money and risk management, both of which are concepts that any trader must master in order to achieve maximum success.

2.1 Common Trading Terms

Forex

The foreign exchange (forex) market is a worldwide market in which currencies are traded. The forex market is open twenty four hours a day and five days a week. It is the world's largest market in terms of total cash value traded and any person, firm or country may participate.[1] (Forex - FX) . It is a form of exchange for the global decentralized trading of international currencies. Financial centers around the world function as anchors of trading between a wide range of different types of buyers and sellers around the clock, with the exception of weekends. EBS and Reuters' dealing 3000 are two main interbank FX trading platforms. The foreign exchange market determines the relative values of different currencies.

[1] *Forex - FX*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/f/forex.asp

Figure 2: The 8 most commonly traded forex currencies

The foreign exchange market assists international trade and investment by enabling currency conversion. For example, it permits a business in the United States to import goods from the European Union member states, especially Eurozone members, and pay Euros, even though its income is in United States dollars. It also supports direct speculation in the value of currencies, and the carry trade, speculation based on the interest rate differential between two currencies[2]. (Wikipedia, Foreign Exchange Market)

In a typical foreign exchange transaction, a party purchases some quantity of one currency by paying some quantity of another currency. The modern foreign exchange market began forming during the 1970s after three decades of government restrictions on foreign exchange transactions (the Bretton Woods system of monetary management established the rules for commercial and financial relations among the world's major industrial states after World War II), when countries gradually switched to floating exchange rates from the previous exchange rate regime, which remained fixed as per the Bretton Woods system.

The foreign exchange market is unique because of the following characteristics:

[2] Wikipedia. (n.d.). *Foreign Exchange Market*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Forex

- its huge trading volume representing the largest asset class in the world leading to high liquidity;
- its geographical dispersion;
- its continuous operation: 24 hours a day except weekends, i.e. 5 days a week.
- the variety of factors that affect exchange rates;
- the low margins of relative profit compared with other markets of fixed income; and
- the use of leverage to enhance profit and loss margins and with respect to account size

Stock

A stock is a type of security that signifies partial ownership in a corporation and represents a claim on a portion of the corporation's assets and earnings. There exists two forms of stock: common and preferred. Owners of common stock possess the right to vote at shareholders' meetings and earn dividends. Preferred stock typically does not entitle owners the right to vote, but owns a greater claim on assets and earnings.[3] (Stock) It represents the residual assets of the company that would be due to stockholders after discharge of all senior claims such as secured and unsecured debt. Stockholders' equity cannot be withdrawn from the company in a way that is intended to be detrimental to the company's creditors.

The stock of a corporation is partitioned into shares, the total of which are stated at the time of business formation. Additional shares may subsequently be authorized by the existing shareholders and issued by the company. In some jurisdictions, each share of stock has a certain declared par value, which is a nominal accounting value used to represent the equity on the balance sheet of the corporation. In other jurisdictions, however, shares of stock may be issued without associated par value.

[3] *Stock*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/s/stock.asp

Figure 3: View of the Stock Market

Shares represent a fraction of ownership in a business. A business may declare different types (*classes*) of shares, each having distinctive ownership rules, privileges, or share values. Ownership of shares may be documented by issuance of a stock certificate. A stock certificate is a legal document that specifies the amount of shares owned by the shareholder, and other specifics of the shares, such as the par value, if any, or the class of the shares. In the United Kingdom, Republic of Ireland, South Africa, and Australia, *stock* can also refer to completely different financial instruments such as government bonds or, less commonly, to all kinds of marketable securities.

Stock typically takes the form of shares of either common stock or preferred stock. As a unit of ownership, common stock typically carries voting rights that can be exercised in corporate decisions. Preferred stock differs from common stock in that it typically does not carry voting rights but is legally entitled to receive a certain level of dividend payments before any dividends can be issued to other shareholders. Convertible preferred stock is preferred stock that includes an option for the holder to convert the preferred shares into a fixed number of common shares, usually any time after a predetermined date. Shares of such stock are called "convertible preferred shares" (or "convertible preference shares" in the UK)[4]. (Wikipedia, Stocks)

Figure 4: Warren Buffet at the NYSE (New York Stock Exchange)

New equity issue may have specific legal clauses attached that differentiate them from previous issues of the issuer. Some shares of common stock may be issued without the typical voting rights, for instance, or some shares may have special rights unique to them and issued only to certain parties. Often, new issues that have not been registered with a securities governing body may be restricted from resale for certain periods of time.

Preferred stock may be hybrid by having the qualities of bonds of fixed returns and common stock voting rights. They also have preference in the payment of dividends over common stock and also have been given preference at the time of liquidation over common stock. They have other features of accumulation in dividend. In addition, preferred stock usually

[4] Wikipedia. (n.d.). *Stocks*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Stock

comes with a letter designation at the end of the security; for example, Berkshire-Hathaway Class "B" shares sell under stock ticker BRK.B, whereas Class "A" shares of ORION DHC, Inc. will sell under ticker OODHA until the company drops the "A" creating ticker OODH for its "Common" shares only designation. This extra letter does not mean that any exclusive rights exist for the shareholders but it does let investors know that the shares are considered for such, however, these rights or privileges may change based on the decisions made by the underlying company.

Shareholder

A shareholder or stockholder is an individual or institution (including a corporation) that legally owns a share of stock in a public or private corporation[5]. (Wikipedia, Shareholder)

Stockholders are granted special privileges depending on the class of stock. These rights may include:

- The right to sell their shares,
- The right to vote on the directors nominated by the board,
- The right to nominate directors (although this is very difficult in practice because of minority protections) and propose shareholder resolutions,
- The right to dividends if they are declared,
- The right to purchase new shares issued by the company, and
- The right to what assets remains after a liquidation.

[5] Wikipedia. (n.d.). *Shareholder*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Shareholder

Figure 5: A Shareholder Meeting

Stockholders or shareholders are considered by some to be a subset of stakeholders, which may include anyone who has a direct or indirect interest in the business entity. For example, labor, suppliers, customers, the community, etc., are typically considered stakeholders because they contribute value and/or are impacted by the corporation. Shareholders in the primary market who buy IPOs provide capital to corporations; however, the vast majority of shareholders are in the secondary market and provide no capital directly to the corporation.

Bond

Bonds are defined as a debt investment in which investors loan money to an entity that borrows the funds for a determined period of time at a fixed interest rate. Bonds are typically utilized by companies, municipalities and governments.[6] (Bond)

It a debt security, in which one party issues the instrument to another. The issuing party owes the holding party a debt. Under certain bond terms, the issuer is obligated to pay interest

[6] *Bond*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/b/bond.asp

along with the principal at a later designated date, known as the maturity of the bond. The interest is also commonly known as coupon payments and is payable at fixed intervals, frequently semiannual. The principal of a bond is the amount that the issuer pays interest on and most often has to be repaid at the end of the term. The yield on a bond refers to the current yield or yields to maturity and is the rate of return received from investing in the bond. Bonds are usually negotiable, meaning their ownership can be transferred in secondary markets. [7] (Wikipedia, Bond)

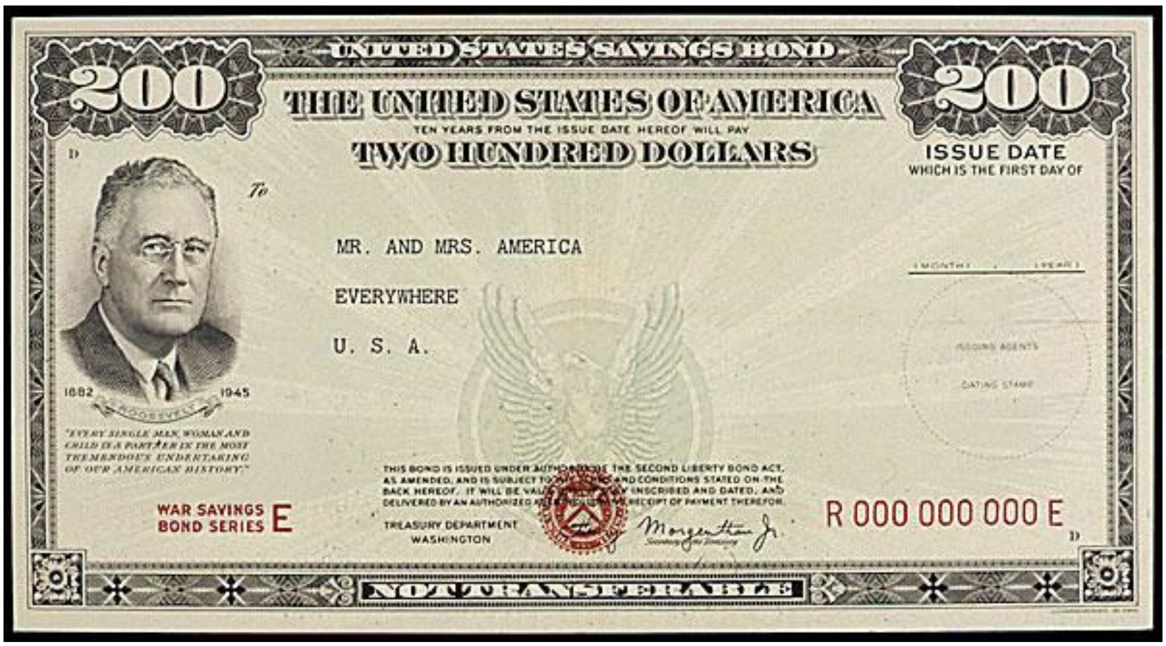

Figure 6: A 200 Dollar US Bond

A bond is considered a type of loan, in which the holder of the bond is the lender and the issuer of the bond is the borrower. These financial instruments are utilized to raise external funds to for long-term investments. Governments often issue bonds as well in order to finance current expenses. Although they share similar characteristics, Certificates of deposit (CDs) are not defined as bonds, due to their term length. The main difference between a bond and a stock is that stockholders possess an equity stake in a company, while bondholders own a creditor stake in the company. Another major difference between the two is that most bonds consist of a predetermined term, while stocks last indefinitely.

[7] Wikipedia. (n.d.). *Bond*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Bond_(finance)

Options

An option represents a contract sold by one party to another in which it offers the buyer the right, but not the obligation, to buy or sell a security or other financial asset at a pre-determined price during a specified period of time.

An option is defined as a contract, in which the owner possesses the right, but not necessarily the obligation, to buy or sell an underlying asset or instrument at a predetermined price before or on a pre-specified date. The option seller holds the requirement of fulfilling the transaction if the option holder decides to undergo the option before the expiration date. Options that consist of the ability to buy an asset are known as a call, while the opposite is known as a put.

The value of a call moves in the same direction as the underlying asset, while puts move in the opposite direction. The valuation of an option is broken into two parts. The intrinsic value is known as the difference between the market value of the underlying asset and the predetermined price of the option. The second part deals with the discounted expected value of the difference at the end of the term.[8] (Wikipedia, Options)

Option contracts are often quite complicated, but most likely contain specifications such as whether it is a put or call, the amount and class of the underlying asset, the strike price, the expiration date and settlement terms.

There are two major classifications of options. Exchange-traded options are a class of exchange-traded derivatives, have standardized contracts and are guaranteed fulfillment by the Options Clearing Corporation. These include stock options, bond options, other interest rate options, index options, options on futures contracts and callable bull or bear contracts. Over-the-counter options are crafted between two private parties, not listed on any exchange and have terms be set without restrictions. Examples include interest rate options, currency cross rate options and options on swaps.

Futures

Futures are financial contracts that obligate buyers to purchase an asset at a specified future date and price. Futures consist of predetermined quality and quantity of the underlying

[8] Wikipedia. (n.d.). *Options*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Option_(finance)

asset. Some future contacts may deal with physical delivery of the asset, while others are dealt with strictly in cash.

Figure 7: Gold Futures - Bullion

A future is defined as a standardized contract among two different parties to sell or buy a specific asset of certain quantity and quality for a price determined at the time of initiation accompanied by a predetermined date of delivery and payment. Futures are negotiated at a future exchange that works as an intermediary for the two parties. The party buying the contract is said to be long and hopes the asset will increase in value while the contract seller is said to be short and bets on the value of the asset to decrease. Frequently, the specified asset may not be a commodity, but a financial instrument, such as currencies, bonds and stocks, or index.

The future exchange helps reduce the risk of default by either party. It requires both parties to put an initial amount of cash at the creation of the contract, this is known as margin. The difference in the predetermined price and the daily futures price is settled daily. The exchange takes money from the margin account and places it in each parties' account in order to match the appropriate daily loss or profit[9]. (Wikipedia, Futures)

[9] Wikipedia. (n.d.). *Futures*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Futures_contract

Figure 8: Crude Oil Futures - Energy Sector

The main difference between a future and an option is that a futures contract must be fulfilled by both parties on the delivery date. The seller is required to deliver the underlying asset to the buyer, or if it is cash based contract, cash must be transferred from the party who sustained a loss to the party who achieved a profit. In order to exit a futures contract, the buyer can purchase a future with an opposite position for the same asset and delivery date.

Exchange Traded Funds (ETFs)

Exchange traded funds are securities that follow an index, commodity or a basket of assets like an index. ETFs trade like a stock on an exchange and experiences price fluctuations throughout the day as they are bought and sold.[10] (ETF Futures And Options)

[10] *ETF Futures And Options*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/e/etf-futures-and-options.asp

Figure 9: ETFs - Exchange Traded Funds

ETFs offer public investors an undivided interest in a pool of securities and other assets and thus are similar in many ways to traditional mutual funds, except that shares in an ETF can be bought and sold throughout the day like stocks on a securities exchange through a broker-dealer. Unlike traditional mutual funds, ETFs do not sell or redeem their individual shares at net asset value, or NAV. Instead, financial institutions purchase and redeem ETF shares directly from the ETF, but only in large blocks, varying in size by ETF from 25,000 to 200,000 shares, called "creation units". Purchases and redemptions of the creation units generally are in kind, with the institutional investor contributing or receiving a basket of securities of the same type and proportion held by the ETF, although some ETFs may require or permit a purchasing or redeeming shareholder to substitute cash for some or all of the securities in the basket of assets.

The ability to purchase and redeem creation units gives ETFs an arbitrage mechanism intended to minimize the potential deviation between the market price and the net asset value of ETF shares. Existing ETFs have transparent portfolios, so institutional investors will know exactly what portfolio assets they must assemble if they wish to purchase a creation unit, and the exchange disseminates the updated net asset value of the shares throughout the trading day, typically at 15-second intervals[11]. (Wikipedia, Exchange-Traded Funds)

If there is strong investor demand for an ETF, its share price will (temporarily) rise above its net asset value per share, giving arbitrageurs an incentive to purchase additional creation units from the ETF and sell the component ETF shares in the open market. The additional supply of ETF shares reduces the market price per share, generally eliminating the premium over net asset value. A similar process applies when there is weak demand for an ETF and its shares trade at a discount from net asset value.

In the United States, most ETFs are structured as open-end management investment companies (the same structure used by mutual funds and money market funds), although a few ETFs, including some of the largest ones, are structured as unit investment trusts. ETFs structured as open-end funds have greater flexibility in constructing a portfolio and are not prohibited from participating in securities lending programs or from using futures and options in achieving their investment objectives.

Because ETFs trade on an exchange, each transaction is generally subject to a brokerage commission. Commissions depend on the brokerage and which plan is chosen by the customer. For example, a typical flat fee schedule from an online brokerage firm in the United States ranges from $10 to $20, but it can be as low as $0 with discount brokers. Due to this commission cost, the amount invested has a great bearing; someone who wishes to invest $100 per month may have a significant percentage of their investment destroyed immediately, while for someone making a $200,000 investment, the commission cost may be negligible. Generally, mutual funds obtained directly from the fund company itself do not charge a brokerage fee. Thus when low or no-cost transactions are available, ETFs become very competitive.

ETFs have a lower expense ratio than comparable mutual funds. Not only does an ETF have lower shareholder-related expenses, but because it does not have to invest cash contributions or fund cash redemptions, an ETF does not have to maintain a cash reserve for redemptions and saves on brokerage expenses. Mutual funds can charge 1% to 3%, or more;

[11] Wikipedia. (n.d.). *Exchange-Traded Funds*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Exchange-traded_fund

index fund expense ratios are generally lower, while ETFs are almost always in the 0.1% to 1% range. Over the long term, these cost differences can compound into a noticeable difference.

The cost difference is more evident when compared with mutual funds that charge a front-end or back-end load as ETFs do not have loads at all. The redemption fee and short-term trading fees are examples of other fees associated with mutual funds that do not exist with ETFs. Traders should be cautious if they plan to trade inverse and leveraged ETFs for short periods of time. Close attention should be paid to transaction costs and daily performance rates as the potential combined compound loss can sometimes go unrecognized and offset potential gains over a longer period of time.

Mutual Fund

A mutual fund is a pool of funds gathered from several investors for the purpose of investing in securities. Mutual funds are professionally managed with the goal of producing capital gains and income for the fund's investors.[12] (Mutual Fund)

Figure 10: Fidelity Investments, one of the largest Mutual Fund traders

In the United States, mutual funds must be registered with the Securities and Exchange Commission, overseen by a board of directors (or board of trustees if organized as a trust rather than a corporation or partnership) and managed by a registered investment adviser. Mutual funds are not taxed on their income and profits if they comply with certain requirements under the U.S. Internal Revenue Code.[13] (Mutual Funds)

Mutual funds have both advantages and disadvantages compared to direct investing in individual securities. They have a long history in the United States. Today they play an important role in household finances, most notably in retirement planning.

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[12] *Mutual Fund*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/m/mutualfund.asp

[13] *Mutual Funds*. (n.d.). Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Mutual_fund

There are 3 types of U.S. mutual funds: open-end, unit investment trust, and closed-end. The most common type, the open-end fund, must be willing to buy back shares from investors every business day. Exchange-traded funds (or "ETFs" for short) are open-end funds or unit investment trusts that trade on an exchange. Open-end funds are most common, but exchange-traded funds have been gaining in popularity.

Mutual funds are generally classified by their principal investments. The four main categories of funds are money market funds, bond or fixed income funds, stock or equity funds and hybrid funds. Funds may also be categorized as index or actively managed. Investors in a mutual fund pay the fund's expenses, which reduce the fund's returns/performance. There is controversy about the level of these expenses. A single mutual fund may give investors a choice of different combinations of expenses (which may include sales commissions or loads) by offering several different types of share classes.

Pip (percentage in point)

A pip is the smallest price change that a given exchange rate can make. The major currencies, except for the Japanese Yen, are priced to four decimal places. For Example, If the currency pair of the Euro vs. the U.S. Dollar (EUR/USD) is trading at an exchange rate of 1.3000 (1 EUR = 1.3 USD) and the rate changes to 1.3010, the price ratio increased by 10 pips. In this example, if a trader buys 5 standard lots (i.e. 5 x 100,000 = 500,000) of EUR/USD, paying USD 650,000 and closes the position after the 10 pips appreciation, the trader will receive USD 650,500 and achieved a profit of 500 US dollars (i.e. 500,000 (5 standard lots) x 0.0010 = USD 500). Most retail trading by speculators is conducted in margin accounts, requiring that only a small percentage of the purchase price is required as equity for this transaction. In the United States, this percentage is two, while in other countries this percentage may only be one or as low as 0.2.

Leverage

Leverage is the use of various financial instruments or borrowed capital, such as margin, to increase the potential return of an investment or it is the amount of debt used to finance a firm's assets. A firm that has significantly more debt than equity is considered to be highly leveraged.

Figure 11: Concept of Leverage Simplified

Lot Size

Pack in which trading units are being sent to the market. There are 3 types of lots: micro, mini and regular. A micro lot consists of 1,000 units of the base currency. A mini lot consists of 10,000 units of the base currency. A regular lot consists of 100,000 units of the base currency.[14] (Investopedia)

Bid Price

The bid price is the highest price that a bidder is willing to pay for a good. This is the price that the base currency is being bought at. When closing, this is the price that the order will be closed[15]. (Investopedia)

Ask Price

The ask price is the price a seller states they will accept for a good. When closing a long position this is the price that the order will be closed at and upon opening, this is the price that the order will be filled at[16]. (Investopedia)

[14] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

[15] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

[16] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

Spread Trade

A spread trade is the simultaneous purchase of one security and sale of a related security, called legs, as a unit. Spread trades are usually executed with options or futures contracts as the legs, but other securities are sometimes used. They are executed to yield an overall net position whose value, called the spread, depends on the difference between the prices of the legs. Common spreads are priced and traded as a unit on futures exchanges rather than as individual legs, thus ensuring simultaneous execution and eliminating the execution risk of one leg executing but the other failing[17]. (Investopedia)

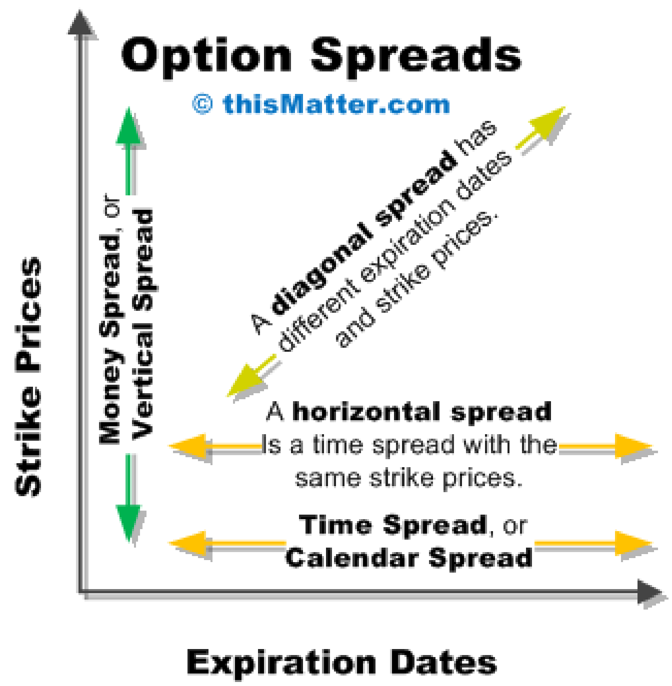

Figure 12: Spreads for Options

Spread trades are executed to attempt to profit from the widening or narrowing of the spread, rather than from movement in the prices of the legs directly. Spreads are either "bought" or "sold" depending on whether the trade will profit from the widening or narrowing of the spread.

Short/Long

Taking a long position on a currency pair means that a trader is buying the base currency, with the intention that the value of the base currency will increase and/or the value of the quote

[17] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

currency will decrease. Taking a short position is done with the intention that the value of the base currency will decrease, and/or the value of the quote currency will increase.[18] (Investopedia)

Currency Pair

A currency pair is the quotation of the relative value of a currency unit against the unit of another currency in the foreign exchange market. The currency that is used as the reference is called the counter currency or quote currency and the currency that is quoted in relation is called the base currency or transaction currency. A widely traded currency pair is the relation of the euro against the US dollar, designated as EUR/USD. The quotation *EUR/USD 1.2500* means that one euro is exchanged for 1.2500 US dollars.

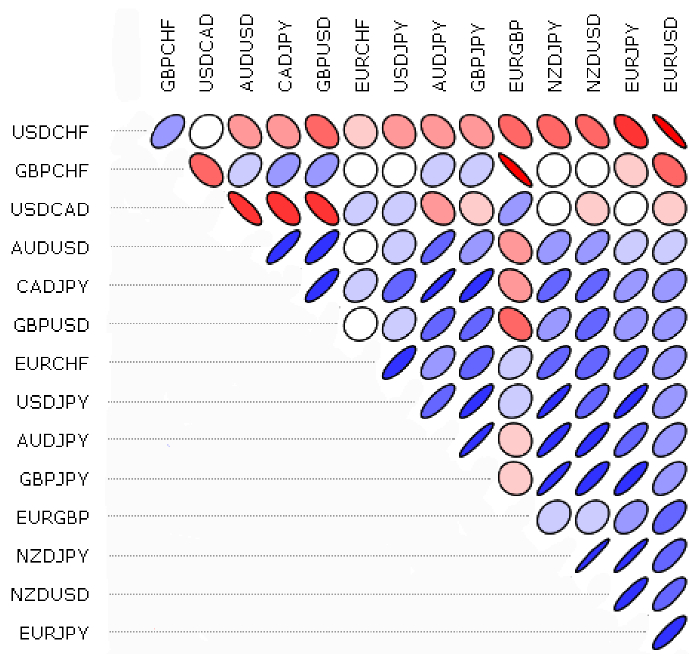

Figure 13: Common Currency pairs traded

Margin Call

When the margin posted in the margin account is below the minimum margin requirement, the broker or exchange issues a *margin call.* The investors now either have to increase the margin that they have deposited or close out their position. They can do this by selling the securities, options or futures if they are long and by buying them back if they are

[18] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

short. But if they do none of these, then the broker can sell their securities to meet the margin call. If a margin call occurs unexpectedly, it can cause a domino effect of selling which will lead to other margin calls and so forth, effectively crashing an asset class or group of asset classes.

This situation most frequently happens as a result of an adverse change in the market value of the leveraged asset or contract. It could also happen when the margin requirement is raised, either due to increased volatility or due to legislation. In extreme cases, certain securities may cease to qualify for margin trading; in such a case, the brokerage will require the trader to either fully fund their position, or to liquidate it.[19] (Investopedia)

Stop Loss

An order placed with a broker to sell a security when it reaches a certain price. A stop-loss order is designed to limit an investor's loss on a security position. It is also known as a "stop order" or "stop-market order". Setting a stop-loss order for 10% below the price you paid for the stock will limit your loss to 10%. This strategy allows investors to determine their loss limit in advance, preventing emotional decision-making[20]. (Investopedia)

Profit Target

An order used by currency traders specifying the exact rate or number of pips from the current price point where to close out their current position for a profit. The rate deemed to be the level where the trader wants to take a profit is sometimes referred to as the "take-profit point”. As the name suggests, take-profit orders are used to lock in profits in the event the rate moves in a favorable direction. For example, if you are long a currency pair position and believe the price will rise to a certain level, but are unsure what it will do beyond that level, placing a take-profit order at that point will automatically close out your position allowing you to lock in profit.[21] (Investopedia)

List of Currencies

The most traded currency pairs in the world are called the *Majors*. They involve the currencies:

- Euro

[19] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

[20] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

[21] Investopedia. (n.d.). *Investopedia*. Retrieved from www.investopedia.org

- US dollar
- Japanese Yen
- Pound Sterling
- Australian Dollar
- Canadian Dollar, and the
- Swiss Franc.

2.2 Fundamental Analysis

Some believe that technical analysis, conclusions based on the current and previous prices of a currency pair; provide enough information to trade effectively in the forex market. Most rookie traders will quickly learn that more in depth analysis is required to successfully trade in this market. Fundamental analysis takes a wider scope approach to understanding the forex market, by studying key macroeconomic issues. The value of a currency can be determined through measures that indicate a national economy's strength and weakness. Fundamental analysis also consists of monitoring major news and announcements, which can have a major effect on the forex market.

2.2.1 Gross Domestic Product

Gross domestic product (GDP) is one of the most commonly used indicators of a nation's economic strength. GDP is the measure of a nation's total expenditures over a period of time, and is the sum of government spending, private consumption, gross investment and net exports within the country's borders. GDP valorizes the final products produced and services provided in an economy during a given year.

For fundamental analysis in the forex market, GDP is used as an estimator of a nation's currency strength. A country with a healthy GDP growth rate suggests it possesses a strong currency, resulting in an increase of demand for that currency, causing a rise in its value. GDP announcements can have a great effect on the forex market. In the United States and other major economies, GDP is reported quarterly, but is weighted to reflect GDP for a full year, acting as a predictor of the full GDP given at the end of the year. These GDP forecasts are greatly connected to the forex market. Most often, if a nation fails to meet the expected GDP, its currency will lose strength, but if it meets or rises above the projected GDP, the currency's strength will increase.

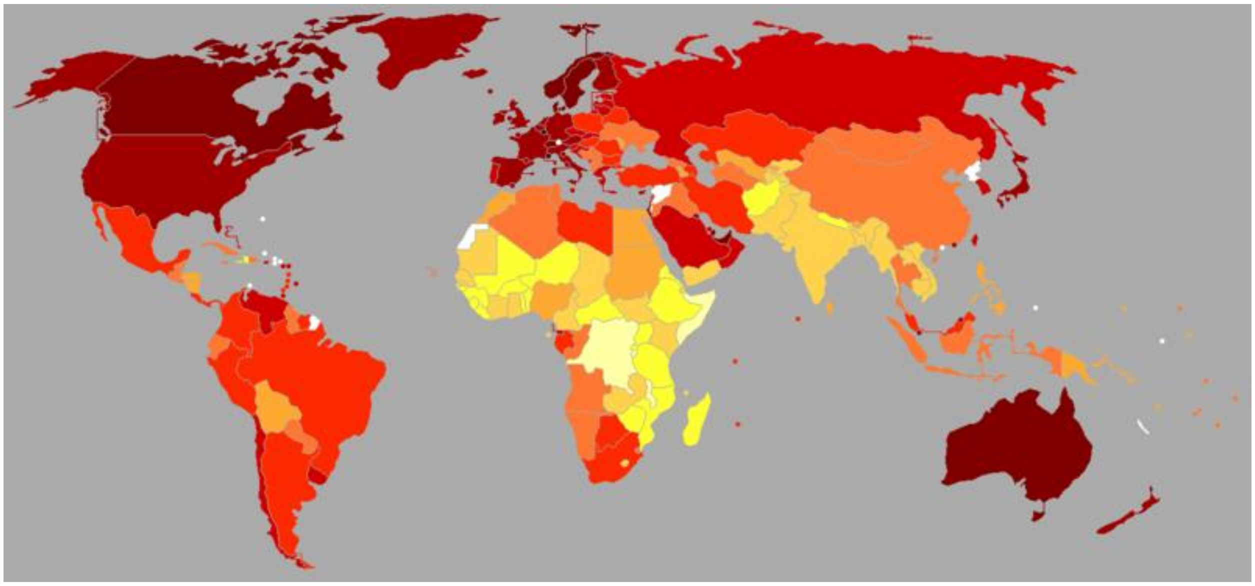

Figure 14: GDP figures on Nations of the World

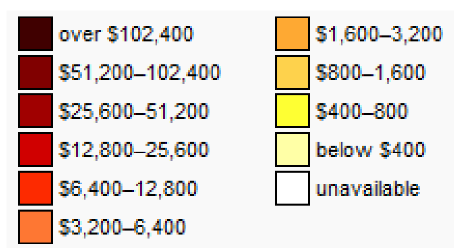

Figure 15: Color Legend on the above Comparison

A growing economy will experience a positive change in GDP from year to year. During a period of growth, the nation's businesses are usually expanding, resulting in a rise of employment which generates higher private consumption. Typically, an expanding economy will experience roughly a few percent increase each year of the expansion. This is considered a healthy growth rate. GDP can get tricky, due to the fact that too large of growth rates can actually signify a negative turn for the economy. Large growth rates can indicate a sign of inflation, meaning the economy's growth is slowing down. When a nation's GDP experiences negative changes from year to year, the economy is in a recession, which can eventually lead to a depression if GDP continues to decrease significantly.

2.2.2 Interest Rates

Interest rates are another very commonly used indicator in fundamental analysis of the forex market. They can have a major effect on how an economy is operating. Interest rates determine how expensive it is to borrow money from banks. Thus, they control the flow of money within an economy and ultimately the value of the nation's currency. Generally, lower interest rates produce an expanding economy. It becomes cheaper for businesses to take out loans, which allows them to grow more easily. This increases the flow of money throughout the economy. High interest rates have the opposite effect on the economy, making it more difficult to take out loans and slowing the flow of money. A currency's strength typically trends with the size of the interest rate. Higher interest rates create a higher demand for the currency and make it stronger. Low interest rates usually indicate a currency that will start to lose value.

The very important task of setting interest rates belong to the nations' central or reserve bank. They are responsible for maintaining the currently desired strength and stability of their nation's currency. A crucial utilization for the manipulation of interest rates is to control inflation, which will be discussed more in depth later in the section. These central banks are forced to play the very tricky game of setting the interest rate to keep the development of inflation under control but not block or hinder the growth of business. Since, high interest rates will slow inflation but also suppress business growth, and low interest rates will likely lead to rise in business expansion but unhealthy amounts of inflation.

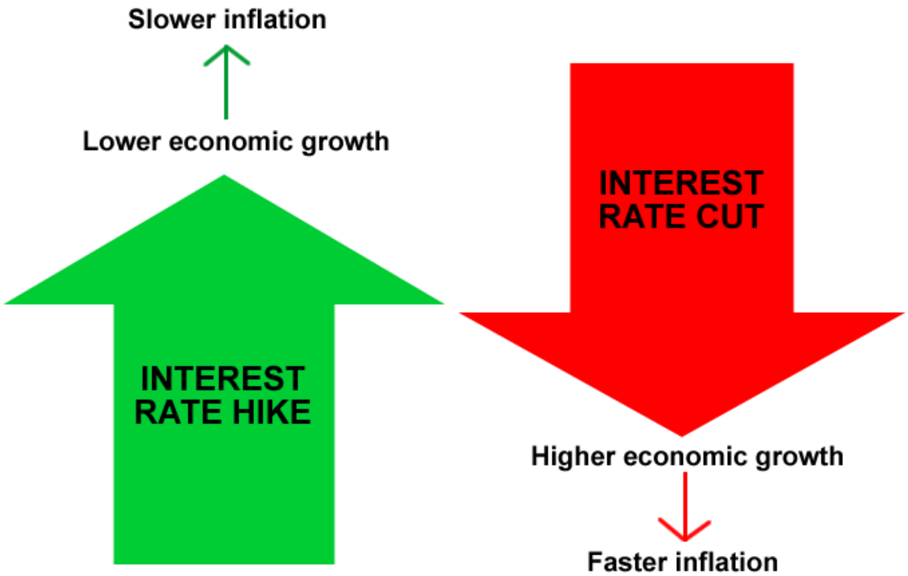

Figure 16: Fundamental Analysis of change in Interest Rates

Fundamental analysts are more interested in the changes of the interest rates, rather than the rates themselves. Traders tend to focus on the expected changes in rates and act according to how they predict rates will change which usually only occur at the end or beginning of a monetary policy cycle. A rate differential is a strategy used in the forex market that takes advantage of analyzing interest rates. By noting the difference between the interest rate of two currencies, one can predict the changes of the exchange rate of the two currencies. If the difference between the two interest rates is expected to increase, longing the currency with the higher rate is a wise decision, while a decreasing difference should result in shorting the currency with the higher rate.

2.2.3 Inflation

Inflation is another example of a fundamental indicator in the forex market. Inflation measures the change of prices within an economy over time. As inflation rises, so does the price of a given product. Therefore, a currency loses value as it becomes more inflated. Inflation has inherited a reputation of having a negative effect on the economy, but inflation is actually a very normal aspect of economic growth.

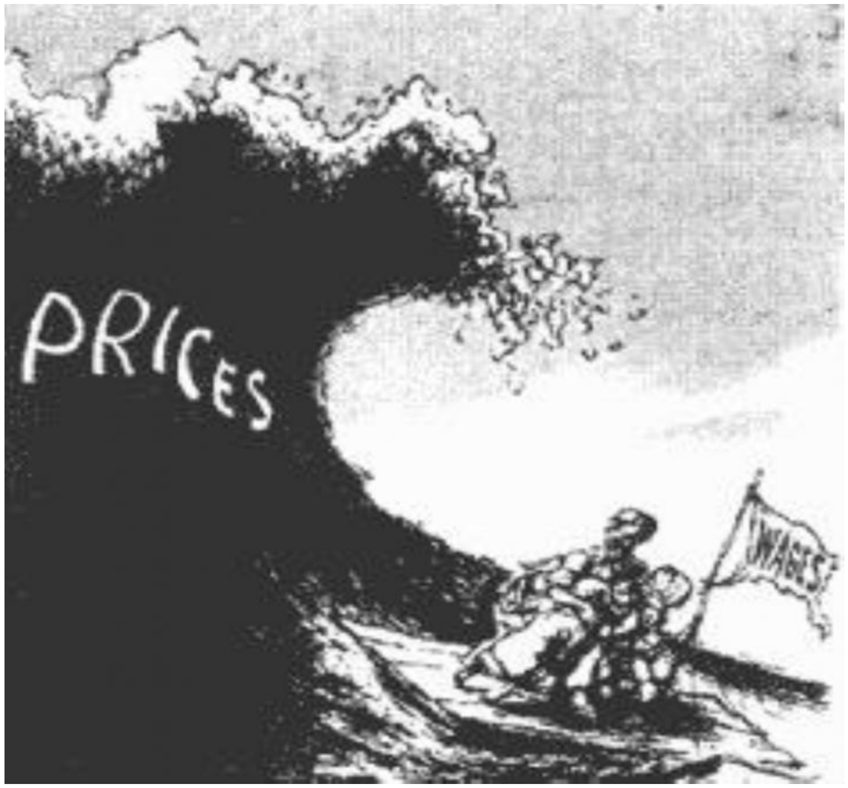

Figure 17: Prices shoot up due to Inflation

As economies expand, money is spent and borrowed at a greater rate, forcing governments to print more money, decreasing the value of their currencies, but continuing the increases in money flow. Thus, inflation is an inevitable consequence of economic expansion. As discussed earlier, the balancing of growth and inflation is a crucial role of central banks.

In fundamental analysis, inflation can be a great measure of a currency's strength. Inflation is a measure of a nation's purchasing power, which is how much a currency is able to buy. Speculators in the forex market pay close attention to the relation between inflation and interest rates. If inflation surpasses its expectations, traders will buy the currency, predicting that central banks will raise interest rates in order to control the growing inflation.

2.2.4 Unemployment

Unemployment is consistently in the news and being debated over in today's economies. Unemployment can have a significant effect on a nation's economy and therefore a nation's currency. Unemployment rates represent the number of a nation's citizens who are eligible to work who are currently unemployed and still looking for employment. A weaker economy typically experiences higher rates of unemployment, while a recovering or booming economy goes through decreases of unemployment.

Figure 18: Unemployment, an Important Trend and Economic Indicator

Unemployment figures are released throughout the year and are very commonly used in fundamental analysis. Unemployment announcements are effectively analyzed when they are compared to numbers from the previous months or whenever the last report was. Rises in employment indicate a strengthening economy which typically results in a stronger currency. Unemployment insurance claims can also be used for fundamental analysis in the forex market. If the number of claims is rising, signifies a greater amount of people are currently out of work and the economy is struggling. Unemployment claims may not always be the most reliable indicator though, as not everyone who is unemployed may be eligible for benefits or file for them. When unemployment announcements significantly surpass or fail to meet expectations, considerable volatility occurs in the market.

2.2.5 Resources and Commodities

The prices of resources and commodities are a useful fundamental tool in the forex market. The prices of resources and commodities can be significantly related to a nation's currency. A nation's currency will change accordingly with changes in an important resource or commodity price. If an economy relies heavily on exporting a particular commodity or resource, an increase in price of that product will lead to an increase in strength for the currency. If a nation is very dependent on importing a commodity or resource and the price of it rises, the strength of the currency will suffer. Experienced traders will take note of the supply and demand of these resources and commodities and use this information to predict changes in currency value.

2.2.6 Economic and Political News

Possibly the most important aspect of fundamental analysis in the forex market is simply staying up to date on major economic and political situations related to the nations of the currencies one intends to trade. Being aware of and understanding upcoming events and policy changes is one of the best ways of predicting how the forex market will act in the near future. Traders begin to anticipate and speculate as major announcements and events approach, causing significant volatility when the news confirms or refutes expectations. Traders should always be aware of these important releases of information and plan accordingly, deciding whether or not it is a safe time to be in the market.

Figure 19: News Updates play an Important Role in Market Predictions

Other major events can play a significant role in influencing a nation's economy and currency. Natural disasters, such as hurricanes, floods and earthquakes can cause serious harm to a nation's economy, through vital structural damage and loss in life. Businesses can begin to run less effectively as a result of destroyed buildings and less manpower. Consumption will drop as well resulting in a collapse of currency strength. The consequences of war can also tarnish a national economy. It can act very similarly to a natural disaster, creating extreme damage to land and population. In some cases, war can boost a nation's economy if the war does not take place within its borders. It can have a positive effect on manufacturing and production. Therefore, war usually creates significant volatility in the forex market.

2.3 Technical Analysis

In finance, technical analysis is a security analysis methodology for forecasting the direction of prices through the study of past market data, primarily price and volume.Behavioral economics and quantitative analysis use many of the same tools of technical analysis, which, being an aspect of active management, stands in contradiction to much of modern portfolio theory. The efficacy of both technical and fundamental analysis is disputed by the efficient-market hypothesis which states that stock market prices are essentially unpredictable.[22] (Wikipedia, Technical Analysis)

2.3.1 Bollinger Bands

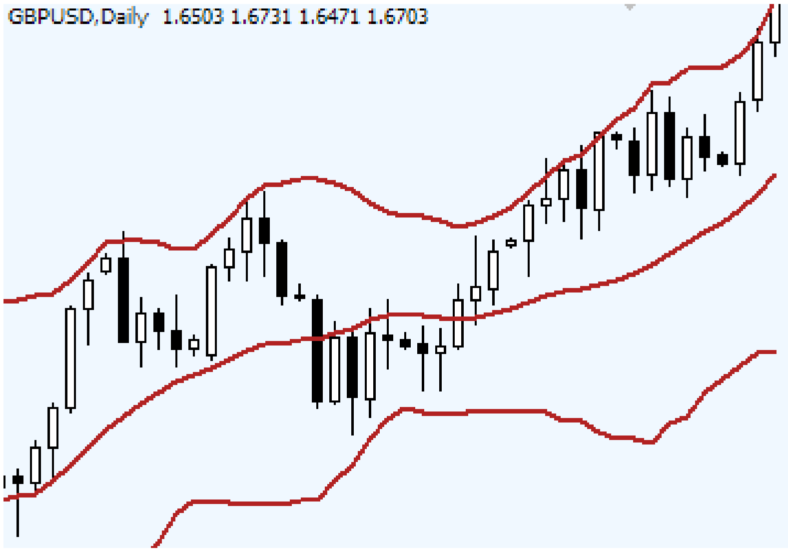

Figure 20: Bar-Chart for Bollinger Bands

Bollinger bands are typically placed two standard deviations, one above and one below, away from the moving average of the market. Prices within the range of the Bollinger bands are said to be “normal” prices.

Bollinger bands are a great method of support and resistance in a market. In a short strategy, the trader would put in a sell order when the high prices crosses between the upper band, with the stop value being the level of the upper Bollinger band and vice versa for a long strategy. Most useful when utilized for a support and resistance strategy.

Formula:

[22] Wikipedia. (n.d.). *Technical Analysis*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Technical_analysis

$$MA = \frac{\sum_{i=1}^{n} y_i}{n}, \quad UpperBB = MA + D\sqrt{\frac{\sum_{i=1}^{n}(y_j - MA)^2}{n}}, \quad LowerBB = MA - D\sqrt{\frac{\sum_{i=1}^{n}(y_j - MA)^2}{n}}$$ [23]

Bollinger Bands consist of:

- an N-period moving average (MA)
- an upper band at D times an N-period standard deviation above the moving average (MA + Dσ)
- a lower band at D times an N-period standard deviation below the moving average (MA − Dσ)

Typical values for N and D are 20 and 2, respectively. The default choice for the average is a simple moving average, but other types of averages can be employed as needed. Exponential moving averages are a common second choice; usually the same period is used for both the middle band and the calculation of standard deviation.

2.3.2 Fast Stochastic Oscillator

The fast stochastic generates two lines, the first line(%K) represents the close minus the low divided by the high minus the low, all multiplied by 100, whereas the other line(%D) shows the X-period moving average of the first line. As well as the amount bought or sold the currency pair is.

[23] *ETF Futures And Options*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/e/etf-futures-and-options.asp

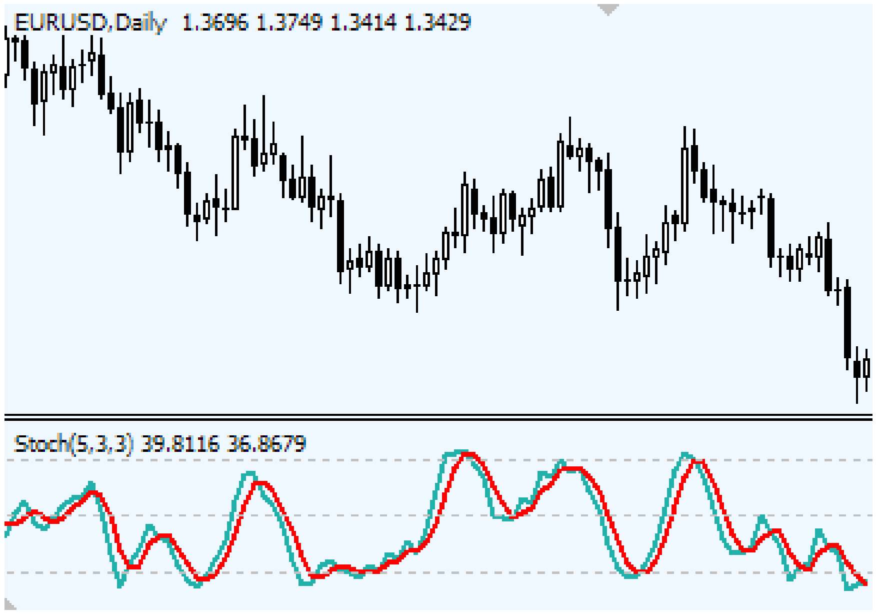

Figure 21: Bar-Chart for Stochastic Fast

In a short strategy, the stochastic indicator is triggered when the %K line crosses below the %D line, and if both values are above the overbought level. And vice versa in a long strategy. This indicator is useful, in combination with other indicators, for a volatile trading strategy that trades often for little wins because it oscillates so quickly, and therefore can give a better idea of what is going to occur in the short run, from bar to bar, than the stochastic slow which would be more helpful in a trend strategy. The stochastic fast can also be utilized in a reversal strategy because it can give a good indication if a pair is overbought or oversold.

Formula:

%K = (Close - Low) / (High - Low) * 100

%D = X-period moving average of %K

2.3.3 Stochastic Oscillator Slow

The stochastic slow generates two lines, the first line(%K) represents the X-period average of the close minus the low divided by the high minus the low, all multiplied by 100, whereas the other line(%D) shows the X-period moving average of the first line. As well as the amount bought or sold the currency pair is.

Figure 22: Bar-Chart for Stochastic Slow

In a short strategy the indicator is triggered when the %K line crosses below the %D line, and if both values are above the overbought level, and vice versa in case of a long position strategy. This indicator is useful, in combination with other indicators, for a trend trading strategy because it oscillates less wildly than the fast stochastic, and a reversal strategy because the stochastic slow can give a good indication if a pair is overbought or oversold.

Formula:

%K = X-period moving average of:(Close - Low) / (High - Low) * 100

%D = X-period moving average of %K[24]

[24] *Stochastic Indicator*. (n.d.). Retrieved from Forex Indicators: http://forex-indicators.net/stochastic

2.3.4 Parabolic SAR

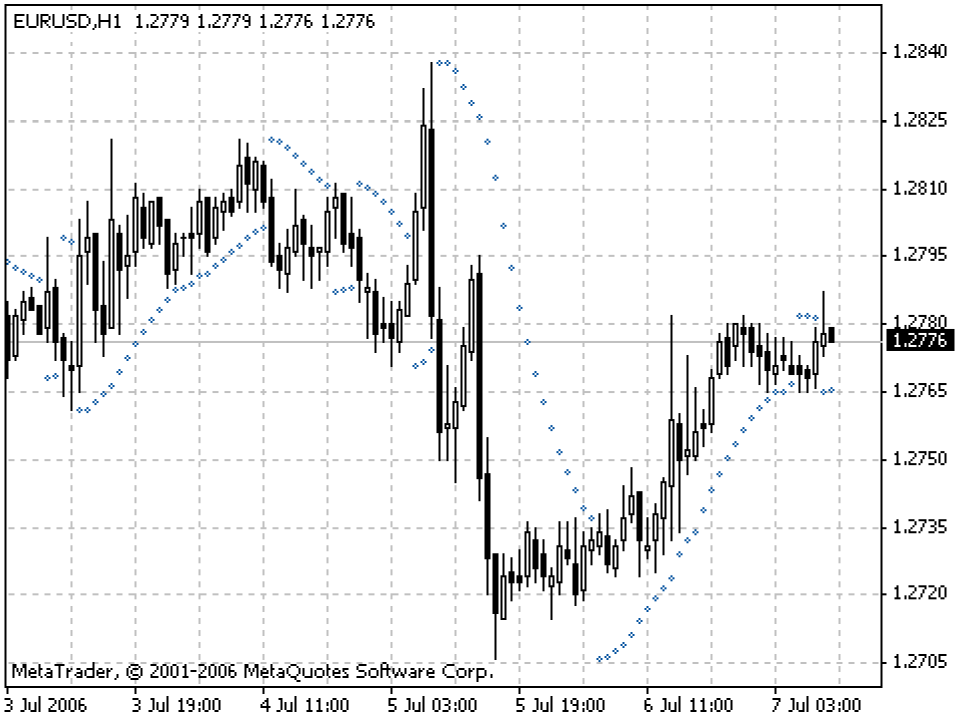

Figure 23: Bar-Chart for Parabolic SAR

The parabolic SAR resembles a parabolic curve, and is calculated to cross under and over the price depending on the trend and formula, moving closer to the price every bar. With the TradeStation default acceleration factor set at .02 with its limit at .2.

In a short strategy this indicator is triggered when the dot is above the candlestick, which occurs when the low is greater than or equal to the parabolic value, and vice versa in case of a long position strategy. This indicator can be useful, when used in combination with other indicators, for a trend trading or volatile strategy.

Formula:

SAR(i) = SAR(i-1)+ACCELERATION*(EPRICE(i-1)-SAR(i-1))

Where,

SAR(i-1) — is the value of the indicator on the previous bar;
ACCELERATION — is the acceleration factor;

EPRICE(i-1) — is the highest (lowest) price for the previous period (EPRICE=HIGH for long positions and EPRICE=LOW for short positions).[25]

2.3.5 MACD

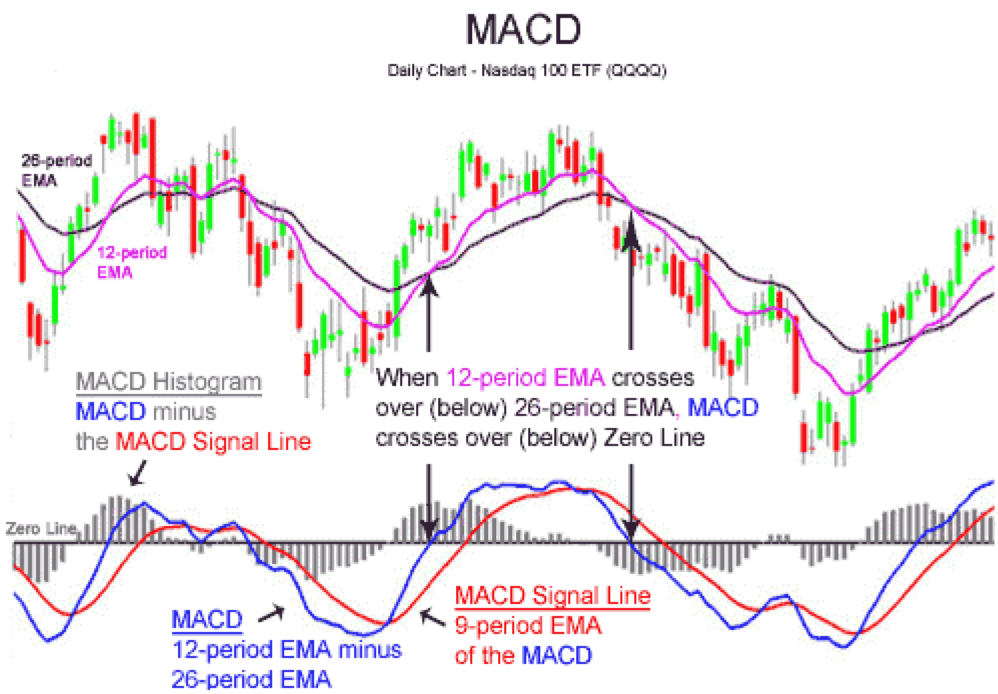

Figure 24: Bar-Chart for MACD

The MACD is a comprised of a fast and slow moving average of the closing prices, showing the overall direction of the market. The MACD will be over zero when the averages are bullish, and under zero when the averages are bearish. And the MACD histogram uses its bars to show the difference between the MACD line and the signal line, and will usually precede a change in the MACD.

In a short strategy the MACD indicator is triggered when the MACD line crosses below the exponential average of the MACD, and if the histogram has flipped. And this is vice versa or a long strategy. MACD is useful for identifying trends in the market, useful in a trend trading strategy.

[25] *Parabolic SAR indicators*. (n.d.). Retrieved from Forex Indicators: http://forex-indicators.net/parabolic-sar

Formula:

MACD = EMA[fast,12] – EMA[slow,26]

signal = EMA[period,9] of MACD

histogram = MACD – signal[26]

2.3.6 Relative Strength Index

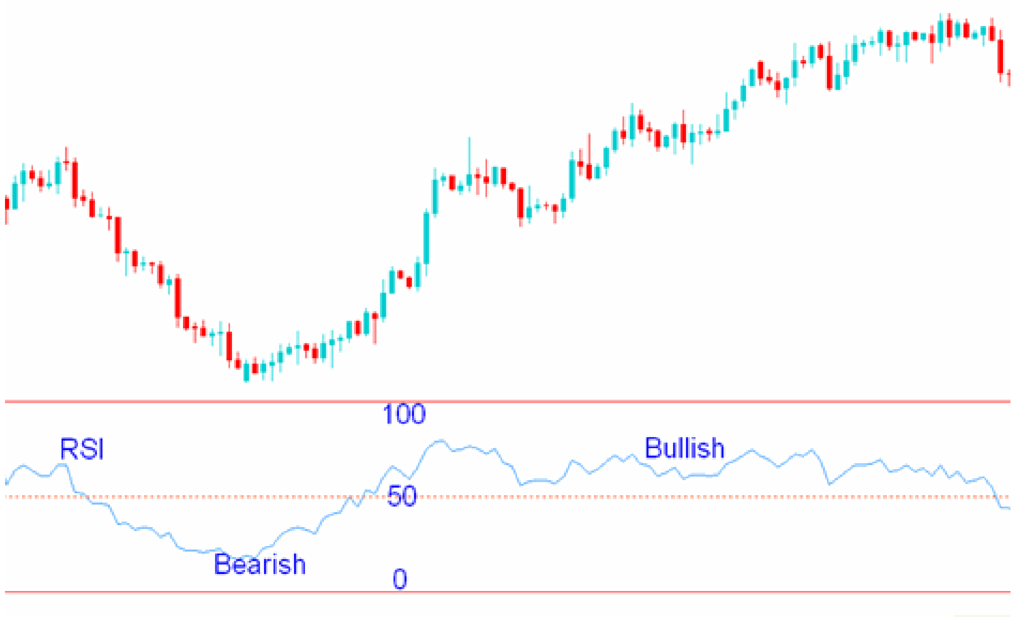

Figure 25: Bar-Chart for RSI

The Relative Strength Index (RSI) is a momentum oscillator and measures the rapidity and change of price movements. The RSI calculates momentum, which is the rate that a price rises or falls, as the ratio of higher closes to lower closes. Typically, the RSI is measured on a scale from 0 to 100, with 70 as a high level and 30 as a low.

Traditionally, the RSI is considered overbought when it reaches above 70 and oversold when it dives below 30. Divergences potentially display signs of a reversal point because directional momentum does not confirm price. When the underlying security reaches a lower low and RSI makes a higher high, a bullish divergence occurs. This shows strengthening momentum because the RSI does not confirm the lower low. The opposite takes place during a

[26] *MACD*. (n.d.). Retrieved from Forex Indicators: http://forex-indicators.net/macd

bearish divergence. Failure swings are also strong indicators of reversals and are not dependent on price action. A bullish failure swing occurs when the RSI dips below 30, bounces above 30, pulls back, holds above 30 and then finally breaks to a new high. The same process occurs for bearish swings, but in the opposite direction.

Formula:

RSI = 100 – (100/(1 + RS))

RS = Average gain / Average loss[27]

2.3.7 Moving Averages

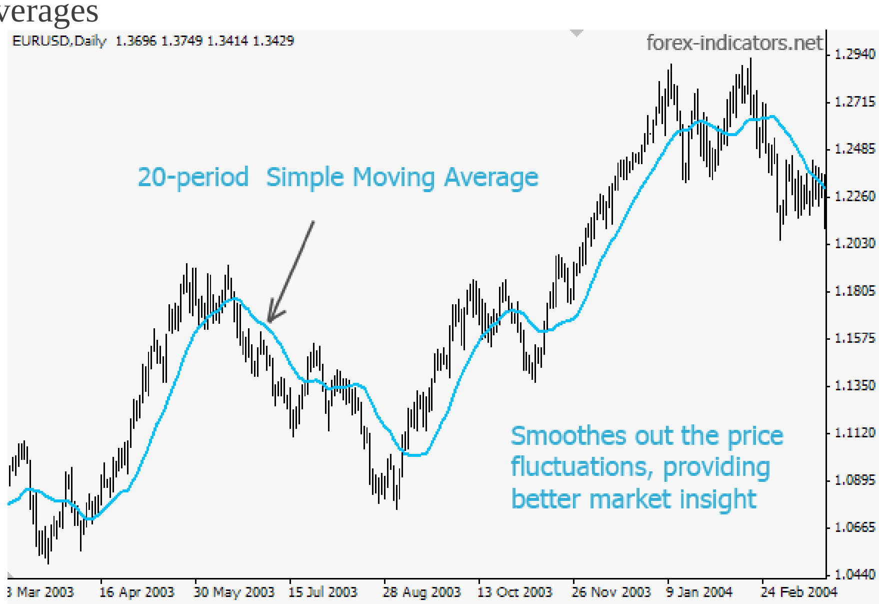

Figure 26: Bar-Chart for Simple Moving Average

Moving averages are one of the most frequently used indicators in the Forex market. They are fairly easy to use and interpret. Moving averages measure the average movement of a price over a given period of time. The indicator smoothens out price data, making trends and tendencies quite apparent. There are three types of moving averages, simple, exponential and weighted. Exponential and weighted moving averages puts greater weight on more recent date, and reacts to price changes quicker than a simple moving average.

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[27] *Relative Strength Index*. (n.d.). Retrieved from Forex Indicators: http://forex-indicators.net/rsi

In Forex, moving averages can be used to provide multiple bits of information, which includes price direction, price location, price momentum and price support and resistance levels.[28]

2.3.8 Pivot Point

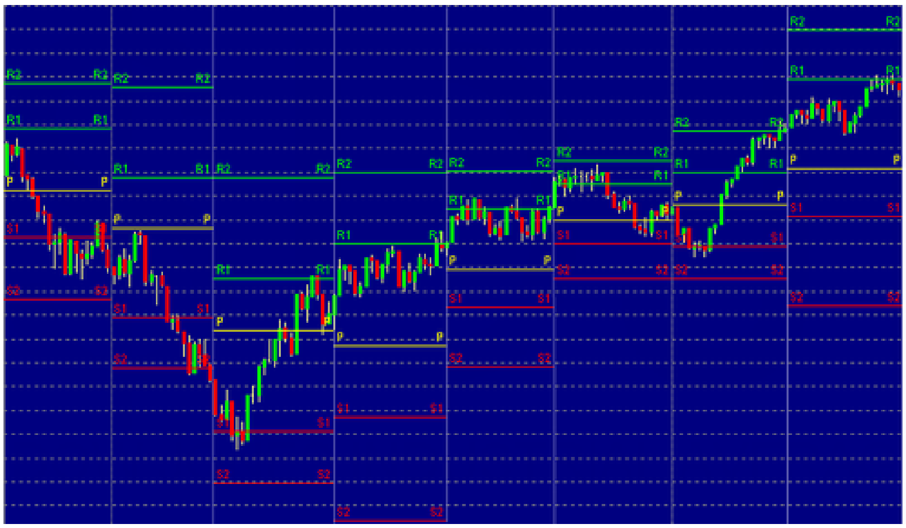

Figure 27: Bar-Chart for Pivot Point

Pivot points are utilized to determine the overall trend over a market over a period of time. They are simply calculated by averaging the high, low and closing prices from the previous trading period. Trading above the pivot point is considered to indicate a bullish trend, while trading below the pivot point designates a bearish trend.[29]

2.3.9 Hammer and Hanging Man Patterns

A hammer pattern is produced when a pair trades significantly lower than its opening price but rallies later in the trading period to close relatively near or above its opening price. Typically, this pattern occurs when a pair has been declining and the market is attempting to establish a bottom. The hammer indicates that a bullish trend may be building.

[28] *Moving Averages: EMA, SMA and WMA*. (n.d.). Retrieved from Forex Indicators: http://forex-indicators.net/trend-indicators/moving-averages-ema-sma-wma
[29] *Pivot Point*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/p/pivotpoint.asp

Figure 28: Example of Hammer Pattern

The hanging man pattern basically represents the inverse of the hammer. A hanging man candlestick represents the end of a bullish trend. It is produced when there is a significant drop close to the market opening, but buyers are able to rally the pair back to near the opening price. These two patterns do not necessarily indicate that the pair is going to reverse direction, but that the current trend's momentum is declining.[30]

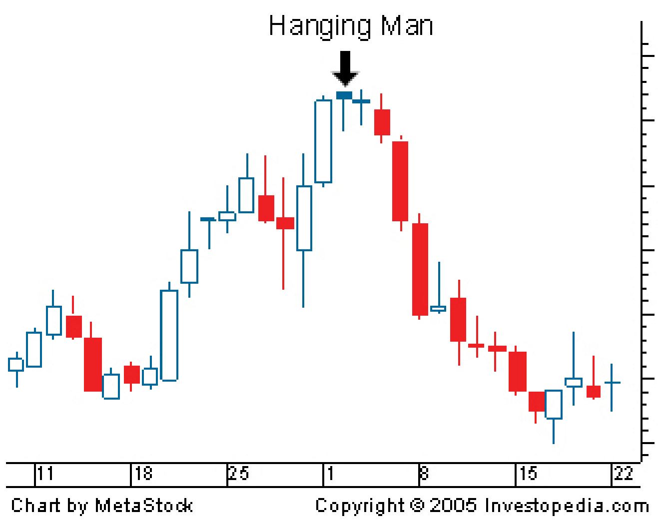

Figure 29: Example of Hanging Man Pattern

[30] *Hammer*. (n.d.). Retrieved from Investopedia: http://www.investopedia.com/terms/h/hammer.asp

2.4 Introduction to Trading Platforms

An electronic trading platform is computer software that can be used to place orders for financial products over a network with a financial intermediary. This includes products such as shares, bonds, currencies, commodities and derivatives with a financial intermediary, such as a brokers, market makers, Investment banks or stock exchanges. Such platforms allow electronic trading to be carried out by users from any location and are in contrast to traditional floor trading using open outcry and telephone based trading.

Figure 30: Electronic Trading

The right trading platform is really important when it comes to forex trading business, as one has to deal with forex brokers to trade currency whether in small or in large amount of sums and even customize the selected platform as per one’s trading limits and properties. We train ourselves most of the time by trading on demo accounts provided by these brokers so that we do not have to rely on physical brokers, i.e. the trader does not need to make calls to the broker every time to make a trade, but only on the trading platforms that, most of the time, fulfill our needs. There are two trading platforms used and analyzed in this IQP:

- MetaTrader4, and
- TradeStation.

2.4.1 MetaTrader4

Figure 31: MetaTrader 4 Logo

The MetaTrader 4 platform software is licensed to foreign exchange brokers who provide the software to their clients. The software consists of both a client and server component. The server component is run by the broker and the client software is provided to the brokers' customers, who use it to see live streaming prices, charts and to place orders as well as manage their account. It provides for a comprehensive and effective how to construct programs to assist traders in their trading due to the ability for end users to write their own trading scripts and robots that could automate trading. The User Interface for accessing or making trades is relatively simple and much faster as compared to any other trading platform.[31] (Wikipedia, MetaTrader 4)

The complete MetaTrader 4 package includes the following components:

[31] Wikipedia. (n.d.). *MetaTrader 4*. Retrieved February 15, 2013, from Wikipedia: http://en.wikipedia.org/wiki/MetaTrader_4

- MetaTrader 4 Client Terminal - the client part. Provided free by brokerages for real-time online trading and as Demo (practice trading) accounts. This provides trade operations, charts and technical analysis in real time. The internal C-like programming language allows users to program trading strategies, indicators and signals. 50 basic indicators are included, each of which can be further customized.
- MetaTrader 4 Mobile - controls a trading account via mobile devices such as mobile phones or PDAs
- MetaTrader 4 Server - the core of the system, the server part. Designed to handle user requests to perform trade operations, display and execution of warrants. Also, sends price quotes and news broadcasts, records and maintains archives. It works as a service and does not have a separate interface.
- MetaTrader 4 Administrator - is designed to remotely manage the server settings.
- MetaTrader 4 Manager - designed to handle trade inquiries and manage customer accounts.
- MetaTrader 4 Data Center - a specialized proxy server and can be an intermediary between the server and client terminals. It reduces the price quote sending load on the main server.

Figure 32: User Interface for MetaTrader 4

To develop and deploy these applications, MT4 uses its own programming language called MetaQuotes Language (MQL4).This Language is very similar to the C programming language. It offers many built-in functions for ease of programming pertinent to trading, granting access to the data collected and maintained by the trading platform. For example, some trading functions facilitate in accessing the data points of certain indicators, such as the exponential or simple moving averages, Parabolic SAR and the RSI: values that can be used in a program to generate signals or to even automate the entire process of trading.

All programs for MT4 can be developed within the MT4 platform. Programs can be edited, compiled, and run within MT4. This eliminates the need for importing or exporting any data to or from MT4 into a separate application. Since all programs are run inside of MT4, they have access to the platform's trading data (prices, computed indicators, etc.) This integration allows programmers to focus their efforts on the application of the program, not the collection and management of data. Instead, this data management is performed "under the hood" with the MT4 platform, provided by the developers. MT4 offers three general types of programs: scripts, custom indicators, and expert advisors. Each type of program serves a different purpose. Scripts are the simplest of the three types of MT4 programs. They are intended to run a particular task once. Such a task may be opening a trade at the current price and setting a particular fixed- pip stop-loss or profit-booking. Custom indicators allow traders to program their own graphical indicator to put on a plot. While, Expert advisors are trading programs commonly called robots for automated trading. They are allowed to run indefinitely without the traders' intervention. This type of program is allowed to open and close trades depending on the conditions programmed for a buy or a sell call.

2.4.2 Trade Station

Figure 33: TradeStation Logo

The TradeStation is the most widely used e-trading platform within the United States along with being award winning software with competitive pricing, extensive lightning fast market data, account security, strategy network and trade execution quality, etc. The TradeStation platform features electronic order execution and enables clients to design, test, optimize, monitor, and automate their own custom equities, options, futures and forex trading strategies[32]. (Wikipedia, TradeStation)

Trade Station platform is really resourceful and offers unlimited potential to signals, indicators, and strategy components. It has features that allow traders to write scripts/programs or strategies which monitor the price movements and even perform automatic trading. It provides extensive functionality for receiving real-time data, displaying charts, enter orders and manage outstanding orders and market positions. TradeStation offers 6 general types of programs: Indicator, ShowMe, PaintBar, ActivityBar, ProbabilityMap, and Strategy (all written in Easy Language software). In TradeStation, one can open up to 99 indicator plots which can be overlapped on the price charts or can be displayed as a separate sub-graph. ShowMe is another type of indicator which “draws a dot in a chart window” to alert the trader that conditions defined in the program are met. PaintBar is also a form of indicator that fills the bars with a pre-defined color to indicate the conditions defined in the program are met. One can use activity bar to display the all the price actions occurred within each bar on the chart. In other words, one can use activity bar to see the price movement in fine detail. ProbabilityMap provides the information of historically-driven price data. Strategy in TradeStation is similar to expert advisors in MT4 in a way that they can be used to set up conditions that when met can be used to open and close trades automatically. Its technological feature also prevents the customers from missing trading opportunities due to temporary internet connection loss and due to its reliable historical data; programmers can perform walk-forward analysis on the system and back-test and refine their programs against historical data as long as several years back and see how the strategy performs.

[32] Wikipedia. (n.d.). *TradeStation*. Retrieved February 15, 2013, from Wikipedia: http://en.wikipedia.org/wiki/TradeStation

Figure 34: TradeStation User Interface

According to TradeStation's disclosure on account security[33], (Staion) TradeStation is a member of SIPC which offers up to $500,000, including a cash balance of $250,000, a protection given to all customers in case the financial institution went bankrupt. The other aspect of the account security that TradeStation stresses about is the online identity theft. It offers advice on how online identity theft can happen and how to protect the account against malicious software programs that are installed when one opens an untrusted site, called "phishing" when these programs comes through emails and fake websites. These programs tend to steal not only people's account information and email passwords, but also their social security numbers and other sensitive information as well. Some ways of protection provided on the website are to increase the level of security software and firewall, to use only one's computer, to monitor any download, to make difficult password, and log out completely when one is done.

TradeStation offers low spreads even on the minor currency pairs. Furthermore, it has several great customer support teams working almost during the entire week. Each team has its specific field that they has specialized to help customers of forex, futures, stocks, or options with their full potential. They even have separate customer support team for TradeStation client

[33] Staion, T. (n.d.). *Account Security*. Retrieved March 15, 2013, from http://www.tradestation.com/site-wide-items/disclaimers/legal/disclosures/account-security

support to help customers as well as programmers with the platform. It has its own “university”, a collection of resources such as video tutorials, articles, and books, to help customers, new or professional, with their trading strategies. Thus, TradeStation is one of the best brokers in US helping traders with their trading to be successful.

2.4.3 Comparative Analysis of MT4 and TradeStation

In General, **MT4** is very popular among the trading community that all traders, novice or experienced, have heard about it. It is the most common trading platform since almost all the brokers use MT4. However, the only difference will be the pip spreads between individual brokers; some may have high spreads while others may provide low spreads to attract customers. Therefore, if one knows how to use MT4 trading platform properly, one can choose among many options of brokers to trade. MT4 also has a simple and user-friendly interface and the ability to switch between different charts and portfolios is much better as compared to TradeStation where you have to load every workspace you need on startup and also the boot time for MT4 is much faster as compared to TradeStation. Since the programming language, MQL4, is very similar to C programming language, it is easier for experienced programmers to familiarize themselves with the syntax[34]. (Bryant)

[34] Bryant, M. R. (n.d.). *MetaTrader vs. TradeStation: A Language Comparison*. Retrieved March 14, 2013, from http://www.adaptrade.com/Newsletter/NL-MT4vsTS.htm

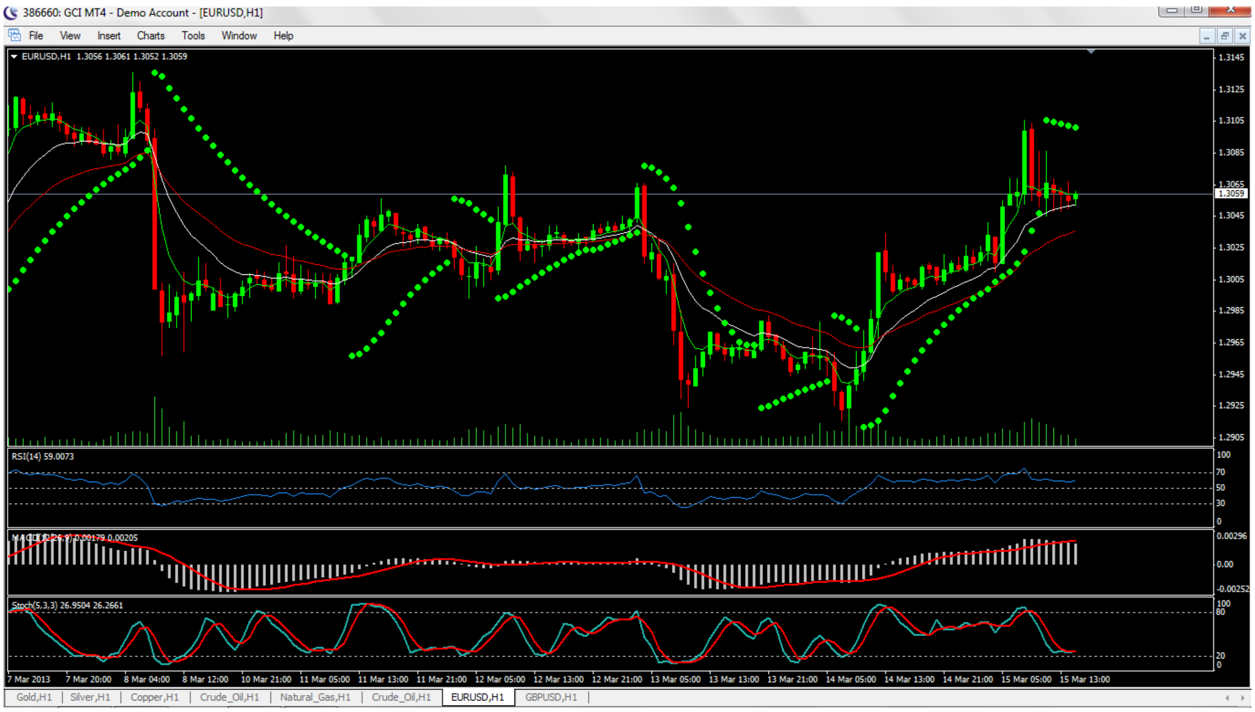

Figure 35: A view of the data for EURUSD on MT4.

On the other hand, TradeStation is only popular among the experienced traders due to its sophisticated features. TradeStation has a lot more indicator types that are very valuable to professionals. The code for these indicators is available on the TradeStation Development Environment and it is really easy to use this code and make strategies that can be later optimized and used to perform automated trading. It also provides reasonable spread for all currency pairs and is comparable with other brokers. TradeStation's Easy Language is not difficult to learn for most of the traders, but it takes hours for programmers who have been programming in C, C++ or similar languages, to get accustomed to the syntax. But the good thing about Easy Language is that the documentation is easy to follow.

Figure 36: A view of the data for EURUSD on Trade Station.

Both platforms have their own set of advantages and disadvantages over each other. Depending on the level of experience in trading, MT4 is better suited for beginners-to-intermediate traders, while TradeStation is for professionals. Furthermore, knowledge with many programming languages comes into play on deciding the platform and customizing the system as per the trader’s needs and system properties which plays the most important role when a trader is deciding on which e-trading platform to use for its trading purposes.

2.5 Money and Risk Management

Figure 37: Risks, Profit and Loss - Aspects of Money and Risk Control

A vital aspect that must be addressed for a trader to become successful, and have the ability to sustain that success over time and generate consistent profit, is their ability to manage their money and the risks that they take. A common misconception among most novice traders is the perception that they will be able to make a large amount of money rather quickly. However, in reality, that mindset will typically end up in the trader losing large portions of money rather quickly, and most likely will empty their account in the near future. This is due to the fact that these novice traders are undisciplined and often make many trades based solely off of emotion. Although they may have some winning trades initially, once they begin to guess incorrectly they begin to stress. This is due to the fact that human psychology dictates that an individual will put more emphasis on not losing $100 as oppose to making $100. This stress results in them frantically taking radical position sizes or entering into the market when they are not as confidant about the results and holding losses much longer then they typically would, in a frail attempt to make back the money they have lost. Unfortunately, this results in increased losses more often than not, and a perpetual downwards spiral until all of their funds have been depleted.

Although this is a common occurrence, it is not all that difficult to avoid. All that is required to avoid making this catastrophic mistake is a scientific approach to trading, coupled with discipline and well-researched and testing system for trading. One must realize that about 90% of traders end up losing money, and that there is no “holy grail” trading system or “get rich quick” schemes or else everyone would utilize them. Rather you must address trading like a business if you hope to become profitable, and sustain that profitability over time.

2.5.1 Money Management

The first rule that all traders must learn if they strive to achieve success in this business is; you must not see losing trades as a bad thing. As a matter of fact, a good trader will embrace, or even *enjoy*, a losing trade. This is because they have enough confidence in their research to know that a losing trade is not a bad thing, but rather a common occurrence felt by every trader, and that your system will rectify this loss over time because it has proven so in numerous back-tests. This mindset will eliminate the urge to make careless trades and hold them too long in the hopes to recoup losses, which often just furthers those losses.

Figure 38: Money Management

Once you have achieved that mindset, and come to peace with the fact that you will make losing trades fairly often if not the majority of the time, you will begin to realize that this is all just a game of probabilities and managing the human psyche.

Rules for position sizing vary from trader to trader depending on their own personal dispositions; risk-averse, risk-taking, etc., and how comfortable that individual is at trading a certain system. On average, it is suggested that a trader should not risk more than about 5% of their total funds on any one trade. To put it in perspective; a monthly 3% profit on a standard $100,000 account is $3,000, which, although the margin is small, is a substantial amount of money. Especially if that percent profit can be consistently replicated throughout the course of an entire year, it would generate a net profit of $36,000 by years end. However, the 5% position sizing rule is more of a guideline for most new traders to take into account, in order limit the risk of draining their funds, rather than a set-in-stone rule to follow. Once a trader has gained some experience under their belt, and has become more confident in their trading strategy and abilities, they can alter that position size based on confidence levels of the trade and the perceived risks.

2.5.2 Risk Management

Since this is a game of probabilities, the more confident a trader is about a specific trade, the more they will likely it is that the trader will increase his position size. This is all part of risk management, a crucial aspect to maximize profit for any trader. A good analogy of risk management in the trading business is playing poker. If a poker player is more confident that he will win a certain hand, if he has a full house for example, then he is likely to bet more money because probability dictates the player has a high chance of winning. Since the poker player believe he has a higher chance of winning than on most hands, the risk of losing the money he bets is reduced, meaning he will bet more to capitalize on this reduced risk and win a large sum. Granted, he still may lose, but more often than not betting on a full house will win the hand for the player. This is exactly like trading, because although you can never fully eliminate risks, the goal is to reduce them as much as possible, and embrace a loss because you know that it is an exception to the rule and not the norm. The confidence when entering a trade, or the “cards” the trader is holding, comes from a variety of factors derived from the scientific approach and system utilized by the trader. With thorough research, a trader can determine the confidence he has going into each trade with factors such as; indicator strength, number of indicators triggered, which indicators are triggered and in what combination, time of day, day of week, week of month, month of year, gut feeling based off experience, recent news, and currency pair of focus. The more of these factors that correlate positively with the direction the trader anticipates the currency pair moving, the less risk he believes he has entering said trade. Now that he's managed his risk factors when entering a trade he must focus on the money management aspect, such as determining the proper size for the position. With increased confidence in the position he is about to enter, the trader will likely allocate more of his funds to that position. For example, if a trader's system indicates that he should be 80% positive he is correct in his position choice, betting $1,000 with an assumed 1% profit or loss before exiting the market, his average payout per trade would be $6 ([1,000 x .01] x 0.8 + [1,000 x .01] x 0.2 = $6). However, since he is confident he will win more often than not, and by a decent margin (Avg 4/5 winning trades), he can allocate more money to the position to increase the amount he wins although the ratio says the same. For example if he had bet $10,000 instead, all other things constant, the trader's average payout per trade would jump to $60 ([10,000 x .01] x 0.8 + [10,000 x .01] x 0.2 = $60).

Figure 39: Risk Management

Keep in mind this is not for novice traders, due to the fact that it requires strong mental discipline and the fear for a novice trader is that they will not possess this disciple. This lack of discipline in inexperienced traders may cause one major loss of this with this increased position size could generate panic, resulting in poor trades as a feeble attempt to rectify the initial loss. Altering position sizing of this nature is also not for the conservative, or faint-of-heart, traders. Because although over time the trader will likely make money, the drawdown of the account with these increased position sizes may be too much for the average trader to trade comfortably.

With all that in mind, and as the trader's confidence begins to grow as he starts becoming profitable more consistently, it is of the upmost importance for a trader to remember to not get greedy. Or in the words of the great Socrates; "He who is not contented with what he has, would not be contented with what he would like to have." Greed is what causes traders to go from being consistently profitable, even if it's only 1% profit, to draining an account of all it's in a matter of weeks. This is because initially the trader is following the rules I have previously discussed, only trading his system and managing his risks. Then the trader begins to get cocky, and is not happy with the profit margin he has been consistently producing, and wants more. So he begins to enter in risker trades more frequently, straying away from his system and scientific approach. As a result, the trader begins to lose trades more often, and realizes he is losing 3% now, more than his system can recoup quickly, so he continues entering progressively riskier trades. Before you know it, that trader is out an entire account all because of his greed, wanting more than the 1-2% profit his well-researched system produced. A good way to avoid this dilemma is to know your system, and what it is projected to produce, as well as its inherit risks. Doing so will allow you to be able to establish a set of goals, both for the long and short term. Following these goals strictly will help reduce temptation and limit greed when trading. For example; if a trader's goal is set at making 3% for that month, and the trader reaches that mark in the first week, then call it a good month and go golfing for the next few weeks because there is no need to take on additional risks. Or at the very least, only trade every few days, and when you are almost 100% sure the position you are about to take is a profitable one. Managing the human psyche and emotions, such as greed, is a necessity for a trader to possess proper risk and money management techniques. These techniques in turn, are vital for any trader possess that wishes to become successful in this business.

Chapter 3: Methodology

This chapter delves into the ever-important aspect of developing a methodology that will generate an effective trading system. This chapter will discuss the necessary steps needed to develop a scientific approach to the methodology behind creating a trading system. Chapter Three will then proceed to discuss several of the goals our group established at the onset of this project, that we will strive to accomplish throughout this project. The chapter concludes with a thorough explanation as to why the Foreign Exchange Market (Forex) was the focal market for this specific project.

3.1 Methodology behind Developing a Trading System

An aspiring trader must look at trading as a business if they hope to be part of the less than ten percent of traders who are profitable. Approaching trading as a business requires a strict scientific methodology to be able to create a system that will prove to be consistently profitable over time. When developing a system, it is vital to first determine the objectives you would like your system to achieve, in order to utilize scientific methodology behind creating your system properly to aid you in achieving these goals. Several objectives that most traders keep in mind when developing their own trading system include;

- High winning percentage
- High annual return
- Low draw-down
- Robust across different markets
- Low time commitment for trading
- Small amount of time in market
- Large amount of time in market
- No holding trades overnight
- High average profit per winning trade

Although these are not the only objectives a trader must focus on when developing a system, they are some of the most common goals among systems. The level of emphasis in achieving each of these objectives varies greatly, depending on the system itself. For example; a system whose objective of primary focus is maintaining a high winning percentage, will likely not be as concerned with having a high average profit per winning trade.

Figure 40: Trading Methodology

Once the objectives that are aspired to be achieved with the system have been determined, the next step in the methodology behind creating a successful trading system is extensive research. This research includes looking, in depth, at aspects such as; currency pairs to trade, news surrounding currency pairs, leverage of certain currency pairs or brokers, indicator strength, combination of indicators, and patterns in the market. The next step, once a trader believes he has done a thorough enough job with research, is to utilize that research and develop a potential system. Once this initial system has been created, the traders should back-test the strategy against past data, and view its performance report. It is likely that this system will not be as profitable as anticipated, which is expected. Meaning, that the next step in the process is to alter your system, typically by testing different indicator groupings, and back-test and view the performance report once again. After repeating this process several times in order to find the ideal combination of indicators for your strategy, the next step is computer optimizing the strategy. Optimization will allow the trader to have the best possible inputs of their selected indicators within their system, as is evident from the increased performance of the strategy when viewing the performance results before and after optimization.

Now that you have determined that the system created has the optimal combination of indicators, as well as the ideal inputs for those indicators, you must manage the risk of your system. Managing the system's risk is a matter of defining the appropriate position sizing to allocate to each trade, and additionally, the stop-losses utilized. Much like determining the proper combination of indicators to use, thorough back-testing of indicator variables, at different levels and different combinations, is necessary to define the ideal parameters within the trading system for both position sizes and stop-losses.

The final step prior to implementing the trading system in real-time, is to perform a walk-forward analysis of the strategy you have developed and optimized. A walk forward analysis allows you to test the system's performance based on variables such as; time of day, day of week, and even month of year. The data gathered from this form of analysis will allow the trader to find the optimal times to trade his system. Once a trader has gone through all these steps behind the methodology of creating a trading system, he/she should be confident enough about their system to trade it, or at least test it out, in real-time and anticipate positive results.

3.2 List of Our Project's Objectives

Throughout the course of the project, our group has many broad objectives we strive to accomplish, in the hopes becoming acclimated with Forex trading and System Development. The goals that were intended to be achieved include;

- Learning how to utilize technical analysis techniques and indicators to help trade effectively
- Learning to use fundamental analysis to generate effective trading
- Learning to program technical indicators to generate a trading strategy
- Becoming acquainted with the terms used in Forex market's
- Discover how to use risk and money management techniques to increase trading effectiveness
- How to manage a Forex account on TradeStation, or other platforms such as MetaTrader
- Learning the laws and regulations associated with the Forex market
- Learning to use a scientific methodology in order to develop a business-like approach to trading Forex
- Developing the skill to analyze and interpret news articles and events, with respect to the impact they may have on the Forex market

3.3 Why Forex?

The Forex market is the largest financial market in the world with a daily volume of over $3 trillion per day, dwarfing the volume in the equity and future markets combined and accounting for a really high liquidity in the market. Such a huge amount of daily volume allows for excellent price stability in most market conditions. This means that a trader most likely will never have to worry about slippage as one would when trading stocks or commodities.[35] (Fuller)

Figure 41: Why to trade Forex Markets

Leverage/ Low margin requirements: The leverage in forex trading is 1:50 in the US and goes to as high as up to 1:500 in Australia which is really high as compared to the stock and commodity markets. Leverage in the commodity market is 1:10 which is much lower as compared to the leverage offered by brokers in the forex market. Forex margin requirements were recently raised in the U.S. but at a maximum of 1:100 this is still much higher leverage than you will get in the futures or equity markets. This means you can control 100,000 worth of currency for only 1,000, or 1%. To compare, in the futures markets traders must post margin equal to between 5%-8% of the contract value while stock traders typically must post at least 50% margin. Leverage can be a double-edge sword however, as an increase in leverage leads to an increase in risk but also in profit potential.

Market is open 24 hours a day and 5 days a week. There is no opening bell in the forex market. You can enter or exit a trade whenever you want from Sunday around 5pm EST to

[35] Fuller, N. (n.d.). *Why Forex is the Best Market to Trade*. Retrieved May 5, 2013, from http://www.learntotradethemarket.com/forex-articles/why-forex-is-the-best-market-to-trade

Friday around 4pm EST. There are 3 distinct trading sessions for you to take advantage of in the U.S., Europe, and Asia which allows you to trade on your own schedule and respond to world-wide breaking news. While it is possible to trade some stocks and commodities in the after hour electronic session, the liquidity is often very low and this makes prices extremely uncompetitive.

Investment Market	Stocks	Futures	Forex
Limited Liability	No	No	Yes
High Liquidity	No	No	Yes
High Leverage	No	Yes	Yes
Earn Profits Both Ways	No	Yes	Yes
Automatic Rollover	No	No	Yes
24 hour trading system	No	No	Yes

Figure 42: Comparative Analysis of why Forex Market is better

The figure 42 above represents a generalized view of comparison between the three markets instead of comparison between specific instruments of either stocks, futures or forex.

Commission free trading and overall low transaction costs: A stock trade will cost anywhere from $5 to $30 for an online stock broker and typically up to $150 per trade for a full service broker. Futures brokers generally charge between $10 and $30 round turn, this means you pay between $10 and $30 to enter and exit every trade. Most forex brokers offer little or no transaction fees, they are compensated through the bid/ask spread of each currency pair. Typically these spreads are as little as 1.5 to 5 pips, depending on the broker and currency being traded. So essentially the only fee associated with a forex trade is that you start out being a few pips negative on every trade due to the bid/ask spread.

Market transparency and Instant execution of Orders: Market transparency is much greater in forex than in stocks or commodities allowing for Low Market manipulation due to laws and regulations, this means it is easier to analyze the inner workings of the market and figure out what is driving it. For example, economic reports and news announcements that drive a country’s economic policy are widely available and accessible for anyone interested. Whereas an individual company's accounting statements are much harder if not impossible to obtain. Instantaneous order execution is another great advantage forex has over other markets. Retail forex trading is generally done over the internet on all electronic platforms. The forex market has no central exchange, no open-outcry pits, no floor brokers, and was designed to be this way to facilitate large banks and allow for instant execution of transactions, this means no delays for the trader and extreme ease of execution.

Price movements are highly predictable in the forex market. Due to its highly speculative nature forex price movements tend to over shoot and then correct back to the mean. This means there are a number of repetitive patterns that are easily recognizable to the trader who is trained in price action analysis. Forex currency pairs generally spend more time in very strong up or down trends than other markets; this is also a huge advantage because it is generally much easier to trade a strongly trending market than a chaotic and consolidating market.

Equal opportunity to profit in rising or falling markets: The forex market has no structural bias as do most stock markets. For example, most stock markets have a bullish bias, this means traders tend to like the long side or upside of the market more and as a result of this it is actually more difficult and generally requires more margin to sell short in a stock market. This is not the case in the forex market. As an inherent feature of the structure of the forex market it is equally easy to buy or sell at any time and there is never any increased fee for selling short. In fact, each time you buy a currency you are simultaneously selling another, and vice versa. The ability to buy or sell at any time with no penalties is another advantage the forex trader has over those trading other markets.

No constraints on the number or type of transactions: The futures market sometimes will have what is called a "limit up" or a "limit down" day, this means when the price moves beyond a pre-determined daily level traders are restricted from entering new positions and are only allowed to exit existing positions if they desire to do so. This is meant to control volatility, but because the futures market for currencies follows the spot forex market the next day at the futures open their sometimes will be large "gaps" or areas where the price has adjusted over night to match the current spot forex price. Now, if you were holding a futures position overnight it is entirely possible that your stop got gapped around, in which case you would get filled at the next best price, which often will be extremely damaging to your trading account. Due to the 24 hour nature of the spot forex market even in extreme market volatility traders generally don't have to worry about gaps and can almost always get out at the exact price they want.

Mini and micro accounts make it easy to get started. There are many forex brokers that are easily accessible on the internet. Unlike futures or stock markets it is not going to benefit you much if at all to have a full service broker in forex. Most of the bigger forex brokers all offer tight spreads and very similar price feeds, they also all offer demo accounts that let you test out your trading ideas before risking real money. Another great thing about the forex market is that you can get started with as little as $250. Micro accounts allow you to trade position sizes as small as 1 cent per 1 pip movement. This means you can effectively control your risk even if you are not starting with much money. In the futures or stock market not starting with at least $10,000 is a big factor in why people lose so often.

Forex price movement lends itself wonderfully to price action setups. Due to the speculative and contrarian nature of the Forex market prices tend to continue in one direction for a decent move and then revert back to the mean or value-area. More often than not these big moves are tipped off with a price action signal. If you are trained by a professional trader in the art of price action analysis you can design an entire trading plan around a few simple yet effective price action setups. Some of these patterns re-occur on a regular basis on the 4 hour and daily charts and can be extremely accurate. Due to the inherent high volume and large price movements, Forex is the best market to trade using price action analysis.

Tax Implications: Gains and losses incurred while trading foreign currency contracts (FCC) on the open FOREX (interbank, cash, spot) market is subject to the provisions of the United States Internal Revenue Code Section (IRC) 988. IRC 988 states that fluctuations in the exchange rate gain or loss should be treated as ordinary income or loss. Section 988 was written to tax companies that earn income from fluctuations in foreign currency exchange rates in their normal course of business. For example, a U.S. based company purchases goods in another country and the resulting fluctuations in the currency exchange rate must be considered. Accordingly, any gain or loss on the transaction is treated as ordinary income or loss to the business entity subject to ordinary income tax rates versus a capital gains tax rate.
The above text is referenced from http://www.forextradersdaily.com/forexresources/tif.pdf that states the tax implications of forex trading for US citizens and residents.

Regulatory/Legal Issues: In the U.S., forex firms are members of the Commodity Futures Trading Commission (CFTC) and the self-regulating National Futures Association (NFA), operating under the same guidelines set forth for FCMs in the futures brokerage business. Other developed countries have effectively regulated the OTC foreign exchange market, and each member believes that the U.S. can do this as well. On a regular basis, all forex dealers submit financial reports to its regulators and are subject to lengthy regulatory audits covering everything from marketing practices to employee training regimens. In addition, many of these long-established regulatory bodies extend specific regulations solely to retail forex dealers, such as higher capital requirements, disclosure statements and the requirement that all dealers disclose to customers that their funds may not be safe in the event of bankruptcy.

Chapter 4: Personal Trading

With all of the background and information needed to comprehend trading and trading system development thoroughly elucidated, Chapter Four can discuss the trading system each individual within the group has developed. Each individual discusses their findings, as well as the scientific process and methodical approach taken to develop their own trading systems. Additionally, results and depictions of the trades executed by each individual's trading systems were added to further clarify how each system operates, and the amount of profit generated.

4.1 Nikhil's Trading

System Objectives:

- High Winning Percentages
- Hold trades longer (i.e. for around 6-10 hours) instead of a couple of minutes or an hour.
- No Overnight Trading
- No more than 2 positions at a time with a maximum of 50% money exposure.
- Strive for higher/fixed profits and minimize losses by using stop loss orders.

2-Line Simple Moving Average Crossover

As opposed to most of the strategies I used for the automated trading system like 3-line crossover exponential moving average with RSI and another strategy which was based on generating signals from a group of indicators using a percentage of bullishness or bearishness in the market obtained by the trend indicated by each of these individual indicators, I preferred the 2-line simple moving average crossover because of the results the strategy generated. This strategy is based upon generating entry and exit signals based on the crossovers of the slow length and fast length simple moving averages. Slow length moving average is represented by the purple line in the bar-chart below that indicates the movement of the historical data for a larger number of candle bars in comparison to the fewer ones used by the fast length moving average. The fast length moving average is represented by the yellow line in the bar-chart in the pictures below. The way the strategy works is that the closing price of each of the bars is used to determine the value of the respective moving averages. The fast moving average represents a view of the market based on recent data as opposed to the slow moving average that represents a longer period and therefore the crossovers of these two lines is used as a standard to determine the direction of the market, i.e. whether the market is in a bullish trend or a bearish trend.

Entry/Exit Signal:

Buy -> If Fast Moving Average crosses over Slow Moving Average

Sell -> If Fast Moving Average crosses under Slow Moving Average

```
inputs:
    Price( Close ),
    FastLength( 5 ),
    SlowLength( 13 ),
    Displace( 0 ) ;

variables:
    FastAvg( 0 ),
    SlowAvg( 0 ) ;

FastAvg = AverageFC( Price, FastLength ) ;
SlowAvg = AverageFC( Price, SlowLength ) ;

if FastAvg crosses over SlowAvg then
Begin
    Buy ("Buy SMA") next bar at market ;
    Alert( "Bullish alert" ) ;
    end;
if FastAvg crosses under SlowAvg then
Begin
    Sellshort ("Sell SMA") next bar at market ;
    Alert( "Bearish alert" ) ;
end ;
```

Figure 43: Trading Strategy Code for a 2-line Crossover Simple Moving Average

The program can be explained in the following manner. The program is divided into segments which include declaring inputs and variables, calculating and assigning value to the variables and finally adding a logic to the system to generate buy and sell signals depending on the criteria the logic uses to find out whether the market is in a bullish or bearish trend. In this particular program the inputs include the closing price of every bar as a standard price for every bar, fast length representing the number of previous bars to consider while calculating the average price for that particular moving average and same is the case for slow length moving average. While displace which means to shift the indicator to the left or right by a specified number of bars is set to zero. Positive is left and negative is right. The AverageFC function takes in two parameters: the price of each bar, i.e. the closing price in this case and the number of bars to calculate the moving average over and in this manner the variables FastAvg and SlowAvg are assigned values. And the logic for the program is pretty simple: when the FastAvg crosses over the SlowAvg, i.e. the fast moving average crosses/surpasses the value of the slow moving average from below, then that means that the market is in an upward trend and a buy signal is generated, while for the vice-versa, a downward market trend is indicated and hence a sell signal is generated.

Figure 44: Bar Chart representing the Strategy signals

The TradeStation has certain performance tools that can be used to see how a strategy can or has performed so that it can be used to automate the process of trading. For this particular strategy, the performance report has been listed below which includes details regarding how the system has performed in terms of net profit, gross profit and loss, profit factor, number of winning and losing trades and a number of other aspects. These details of the trade are calculated after deducting a commission of $10 on each executed trade.

TradeStation Performance Summary Expand

	All Trades	Long Trades	Short Trades
Total Net Profit	$13,212.50	$4,806.90	$8,405.60
Gross Profit	$98,335.30	$47,787.50	$50,547.80
Gross Loss	($85,122.80)	($42,980.60)	($42,142.20)
Profit Factor	1.16	1.11	1.20
Total Number of Trades	669	335	334
Percent Profitable	36.92%	37.91%	35.93%
Winning Trades	247	127	120
Losing Trades	422	208	214
Even Trades	0	0	0
Avg. Trade Net Profit	$19.75	$14.35	$25.17
Avg. Winning Trade	$398.12	$376.28	$421.23
Avg. Losing Trade	($201.71)	($206.64)	($196.93)
Ratio Avg. Win:Avg. Loss	1.97	1.82	2.14
Largest Winning Trade	$2,244.80	$2,244.80	$1,930.50
Largest Losing Trade	($1,241.00)	($1,241.00)	($1,150.00)
Max. Consecutive Winning Trades	5	4	6
Max. Consecutive Losing Trades	11	8	11
Avg. Bars in Winning Trades	15.25	15.06	15.45
Avg. Bars in Losing Trades	7.13	7.30	6.97
Avg. Bars in Even Trades	0.00	0.00	0.00
Max. Shares/Contracts Held	100000	100000	100000
Total Shares/Contracts Held	67000000	33500000	33500000
Account Size Required	$7,643.60	$5,011.60	$7,202.80
Return on Initial Capital	13.21%		
Annual Rate of Return	12.60%		
Return Retracement Ratio	1.42		
RINA Index	23.50		
Trading Period	11 Mths, 24 Dys, 20 Hrs, 59 Mins		
Percent of Time in the Market	99.75%		
Max. Equity Run-up	$15,914.70		

Figure 45: Performance Summary of the strategy on EUR/USD

The graph underneath represents the equity curve, i.e. the net profit generated by the system for a period of 1 year. The black lines represents the value of the net profit over the period of time while the green dots represent the peaks of the system generated profits at various points in the cycle with the number of trades taken to achieve the profit displayed along the x-axis.

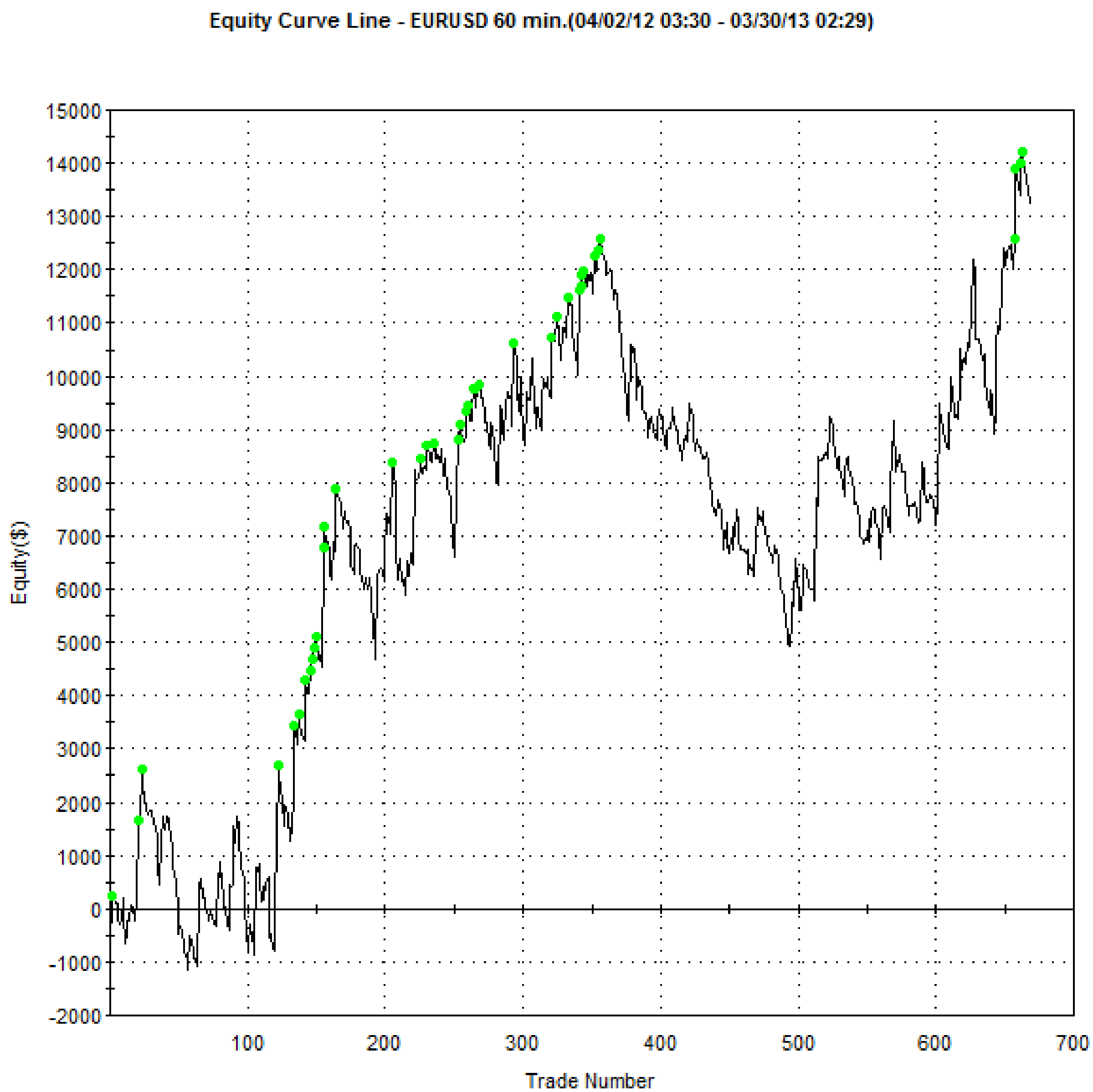

Figure 46: Equity Curve Line for EURUSD on a 60 min Bar-Chart

The data below represent the monthly periodical returns acquired as result of implementing the strategy. As we can see that the system generated good percentages of profits for most months of the year accounting for a good positive net yearly profit although some of the months ended up suffering certain losses. The data has been represented using the Mark-to-Market (MTM) Monthly Average Analysis which basically refers to accounting for the fair value of an asset or liability based on the current market price, or for similar assets and liabilities, or based on another objectively assessed "fair" value. Mark to market aims to provide a realistic appraisal of an institution's or a company's current financial situation.

TradeStation Periodical Returns: Monthly

Mark-To-Market Monthly Average Analysis:

Period	Avg. Net Profit	% Gain	%Profitable
January	$2,107.30	2.11%	34.67%
February	$3,370.30	3.15%	50.00%
March	$2,698.70	2.44%	43.40%
April	($786.20)	(0.69%)	32.73%
May	$1,441.00	1.45%	31.48%
June	$5,960.60	5.92%	50.00%
July	($377.50)	(0.35%)	35.59%
August	$3,414.20	3.21%	41.82%
September	($184.00)	(0.17%)	33.33%
October	$1,014.40	0.93%	40.68%
November	($2,075.40)	(1.88%)	33.33%
December	($3,434.00)	(3.17%)	25.00%

Mark-To-Market Period Analysis:

Period	Net Profit	% Gain	Profit Factor	# Trades	%Profitable
3/1/2013	$2,698.70	2.44%	1.40	53	43.40%
2/1/2013	$3,370.30	3.15%	1.61	52	50.00%
1/1/2013	$2,107.30	2.01%	1.27	75	34.67%
12/1/2012	($3,434.00)	(3.17%)	0.54	60	25.00%
11/1/2012	($2,075.40)	(1.88%)	0.72	63	33.33%
10/1/2012	$1,014.40	0.93%	1.16	59	40.68%
9/1/2012	($184.00)	(0.17%)	0.98	48	33.33%
8/1/2012	$3,414.20	3.21%	1.63	55	41.82%
7/1/2012	($377.50)	(0.35%)	0.96	59	35.59%
6/1/2012	$5,960.60	5.92%	1.98	48	50.00%
5/1/2012	$1,441.00	1.45%	1.19	54	31.48%
4/1/2012	($786.20)	(0.79%)	0.89	55	32.73%

Figure 47: MTM Monthly Average and Period Analysis

Mark-To-Market Rolling Period Analysis:

Period	Net Profit	% Gain	Profit Factor	# Trades	%Profitable
3/1/2013 - Today	$2,698.70	2.44%	1.40	53	43.40%
2/1/2013 - 3/1/2013	$6,069.00	5.67%	1.49	104	46.15%
1/1/2013 - 3/1/2013	$8,176.30	7.79%	1.41	178	41.01%
12/1/2012 - 3/1/2013	$4,742.30	4.37%	1.17	237	37.13%
11/1/2012 - 3/1/2013	$2,666.90	2.41%	1.08	299	36.45%
10/1/2012 - 3/1/2013	$3,681.30	3.36%	1.09	357	36.97%
9/1/2012 - 3/1/2013	$3,497.30	3.19%	1.07	404	36.39%
8/1/2012 - 3/1/2013	$6,911.50	6.51%	1.12	458	36.90%
7/1/2012 - 3/1/2013	$6,534.00	6.13%	1.10	516	36.82%
6/1/2012 - 3/1/2013	$12,494.60	12.41%	1.18	563	37.83%
5/1/2012 - 3/1/2013	$13,935.60	14.05%	1.18	616	37.34%
4/1/2012 - 3/1/2013	$13,149.40	13.15%	1.15	670	36.87%

Figure 48: MTM Rolling Period Analysis

Manual Trading:

Under Manual trading understanding entry and exit signals becomes really easier because a trader can always improvise on his decisions based on certain indicator signals or news that might have come out recently affecting the trend of the instrument that the trader had assumed previously.

Figure 49: Manual Trading Based on the Day Trading Principle

On my personal trading platform, my trades were usually based on the following parameters with an approximate weight as per my preference or rather experience with each indicator:

<u>Entry/Exit Signals</u>

40% on Exponential Moving Average (5, 13 and 26) with fast moving average (5) crossing over medium moving average (13) as a setup rule and fast moving average crossing over slow moving average (26) as a trigger for a buy signal and vice-versa for a sell signal.

15% on Relative Strength Index (RSI) with the ranges 0-30 (oversold zone) and 50-70 (buying zone) signifying a buy signal and the ranges 30-50 (selling zone) and 70-100 (overbought zone) signifying a sell signal.

4.2 Alex's Trading

For a completely inexperienced trader, attempting to trade in the forex market is a very intimidating task. With a seemingly endless amount of indicators and strategies at my disposal, it was very difficult to decide on a starting point. I began experimenting with some of the most common indicators, such as MACD, parabolic SAR and RSI. I tried to learn and understand how different indicators are affected by movements in the market and how they can be interpreted to trade effectively. I eventually came to the conclusion that I could rely the most on simple moving averages for my main indicators while trading, due to their easiness of interpretation and my relative success when using them.

The triple simple moving average crossover strategy takes advantage of three simple moving averages to determine long and short entry signals. The strategy will generate a long entry when the fast moving average is greater than the medium moving average, and the medium moving average is greater than the slow moving average. In contrast, a short entry will be generated when the fast moving average is less than the medium moving average, and the medium average is less than the slow average. The default number of bars used to calculate the moving averages are 4, 9 and 18 for the fast, medium and slow moving averages, respectively.

I used the three simple moving averages as definitive entries and exits for my trading. For example, if I was holding a long position and the moving averages crossed to signal a bearish market, I would close my long position and initiate a short position as well. This meant that I would constantly be holding a position, which is something that can be hard to be comfortable with. I began using RSI, with a length of 14, oversold value of 30 and overbought value of 70, to also generate exit signals, without reversing positions.

Figure 50: EUR/USD graph with the moving averages and RSI indicators

As I continued to trade, I began to learn that I did not always possess the patience and discipline to be a manual trader. I could not always trust myself to strictly follow my strategy and would find myself entering and exiting at less than optimal times. I realized that automated trading would be a better fit for my trading personality. I decided that my program should also consist of stop loss and profit taking levels. The code for my system is as follows:

```
[IntrabarOrderGeneration = false]
inputs:  Price(  Close), FastLength( 4), MedLength( 9), SlowLength( 18),  PositionBasis( true ), AmountL( 1 ), AmountP(1) ;
variables:  FastAvg( 0 ), MedAvg( 0 ), SlowAvg( 0 );

FastAvg = AverageFC( Price, FastLength ) ;
MedAvg = AverageFC( Price, MedLength ) ;
SlowAvg = AverageFC( Price, SlowLength ) ;

Condition1 = Price > FastAvg and FastAvg > MedAvg and MedAvg > SlowAvg ;

if CurrentBar > 1 and Condition1 and Condition1[1] = false { CB > 1 check used to
 avoid spurious cross confirmation at CB = 1 }
then
    Buy ( "MovAvgBuy" ) next bar at market ;

Condition2 = Price < FastAvg and FastAvg < MedAvg and MedAvg < SlowAvg ;

if CurrentBar > 1 and Condition2 and Condition2[1] = false { CB > 1 check used to
 avoid spurious cross confirmation at CB = 1 }
then
    Sell Short ( "MovAvgSS" ) next bar at market;

if PositionBasis then
    SetStopPosition
else
    SetStopShare ;
SetStopLoss( AmountL ) ;

if PositionBasis then
    SetStopPosition
else
    SetStopShare ;
SetProfitTarget( AmountP ) ;
```

Figure 51: Code for the 3-Line Crossover Simple Moving Average Strategy

I originally included set up rules and discretionary exits utilizing RSI, but when included, the system's profitability suffered. I came to notice that there was such a thing as an excessive amount of indicators. It seemed that a system could easily become over complicated and not produce reliable results. For this reason, I came to the conclusion that working with only moving averages was most effective for a still relative newcomer to trading.

For April 2012 to April 2013, the optimized parameters for the moving averages are 4 for the slow length, 7 for the medium length and 20 for the fast length. Interestingly, optimizing the system resulted in setting the stop loss mark at $1000, basically making it a non-factor within the system. Also, the profit target level was set to $500. With these parameters, the system produced a roughly $6,800 net profit from April 2012 to April 2013, but carrying only a 1.05 profit factor.

TradeStation Performance Summary	All Trades	Long Trades	Short Trades
Total Net Profit	$6,812.50	$2,563.30	$4,249.20
Gross Profit	$141,062.90	$69,131.70	$71,931.20
Gross Loss	($134,250.40)	($66,568.40)	($67,682.00)
Profit Factor	1.05	1.04	1.06
Roll Over Credit	($194.50)	($283.70)	$89.20
Open Position P/L	($10.00)	($10.00)	$0.00
Select Total Net Profit	$15,859.40	$6,043.20	$9,816.20
Select Gross Profit	$139,482.90	$67,551.70	$71,931.20
Select Gross Loss	($123,623.50)	($61,508.50)	($62,115.00)
Select Profit Factor	1.13	1.10	1.16
Adjusted Total Net Profit	($4,504.77)	($5,339.01)	($3,853.19)
Adjusted Gross Profit	$134,471.46	$64,533.13	$67,208.69
Adjusted Gross Loss	($138,976.24)	($69,872.13)	($71,061.88)
Adjusted Profit Factor	0.97	0.92	0.95
Total Number of Trades	1265	632	633
Percent Profitable	36.21%	35.76%	36.65%
Winning Trades	458	226	232
Losing Trades	807	406	401
Even Trades	0	0	0
Avg. Trade Net Profit	$5.39	$4.06	$6.71
Avg. Winning Trade	$308.00	$305.89	$310.05
Avg. Losing Trade	($166.36)	($163.96)	($168.78)
Ratio Avg. Win:Avg. Loss	1.85	1.87	1.84
Largest Winning Trade	$1,580.00	$1,580.00	$500.90
Largest Losing Trade	($1,645.50)	($1,645.50)	($872.00)
Largest Winner as % of Gross Profit	1.12%	2.29%	0.70%
Largest Loser as % of Gross Loss	1.23%	2.47%	1.29%

Figure 52: Summary of the Performance Report

The number of months resulting in overall gain and loss during the year was split, with a maximum loss during a month of just under 3.5 percent. After an initial drop, the equity curve for this system rises rather steadily for the first half of the year, peaking at roughly $13,000. After that mark, the system no longer appears to function as effectively, and the equity curve slowly falls for the next four hundred to five hundred trades. Fortunately, the system starts to produce favorable results again and surges with a small climb in the final stretch of the year.

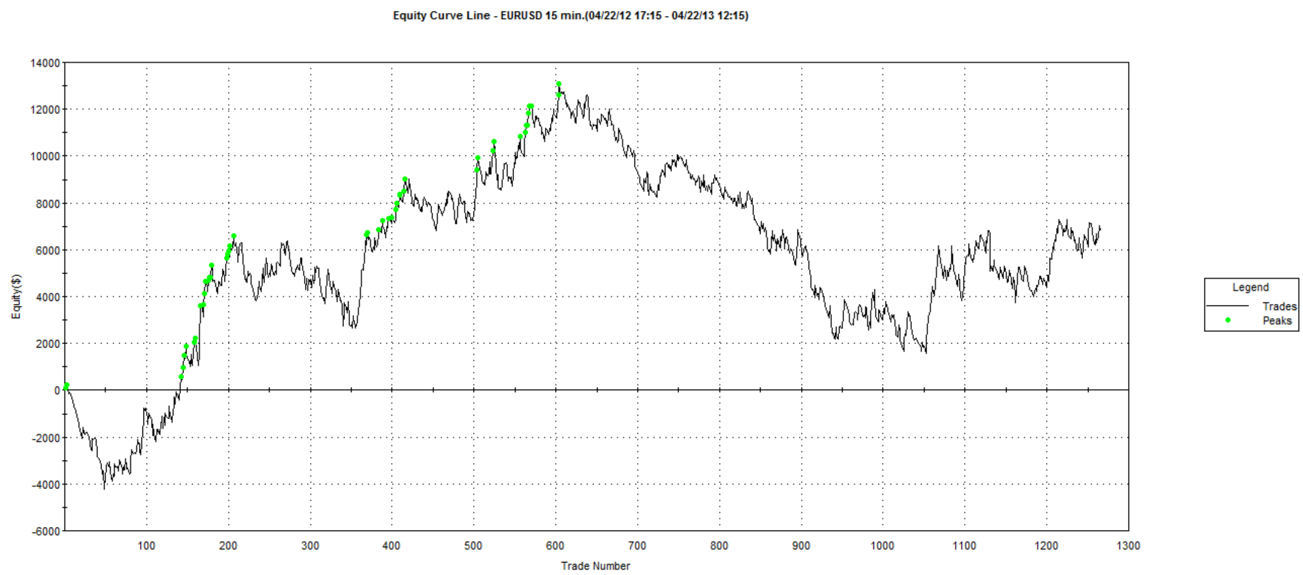

Figure 53: Equity Curve Line for EURUSD on a 15 min Bar-Chart

A few other aspects should be noted regarding this system. All trades were executed at a value of $100,000. Also, there is no commission included in the results of this system. This system and most of my manual trading was with EUR/USD. I thought it would be beneficial to pick one pair that I found most interesting to follow as closely as possible. For trading in the forex market, being well informed about news and other important information regarding the currencies' nations being traded is crucial, and having to stay enlightened on several areas might be overwhelming.

4.3 Nick's Trading

4.3.1 Manual Trading System

There is discrepancy amongst experts as to whether a single automated trading system can be successful over time in the Forex market. Success, in this case, is defined simply as consistently profitable over a period of time. This argument is particularly relevant in the Forex market due to the lack of regulation, coupled with the drastic effect news may have on the market. Additionally, since the banks are the ones essentially controlling and profiting from the market and they are certainly aware of all the standard indicators and common strategies people use, they may utilize that information to exploit and make money off of average traders using these technical indicators. It is these factors that have influenced my decision to focus mainly on trading manually, and to utilize technical indicators and analysis techniques as a form of reference to verify my position when manually trading.

Since the banks, which essentially regulate the Forex market, are familiar with all the common indicators, can manipulate the market properly to make the most profit for themselves as possible, I tried to develop a trading strategy that went against the norm. The first step taken in the methodology behind creating this system was (A) extensive research of indicators and commonly utilized strategies, as well as (B) patterns in the market with respect to certain currency pairs. This research revealed several key findings including (A) most people who trade automated systems try and capture trends, (B) most systems appear to signal an exit after the market has already flipped, rather at the peak of profit, (C) the size of each movement in the market varies with the time of day, (D) currency pairs typically stay within a set pip range per day, week, month, or year, and with each consecutive bar of the same color the odds of the next bar in succession being that same color is reduced.

Once a sufficient amount of research has been complied, the next step in my methodology was to develop a system that is not commonly utilized, as well as define the objectives I intend for this system to accomplish. Through extensive research, it was determined that most people lose money because they are in the market either too often or too long. Greed, or a desire for more, holds them too long. Much like blackjack, where the odds and the majority of the money are made by the dealer, the odds are stacked against you and the banks win often. Therefore, the more frequently you make trades or are in the market, the more likely you are to succumb to those odds. So I decided that the objectives of my system would be centered around a high winning percentage with minimal time in the market, and not being as concerned with the average profit per winning trade. Meaning, I would only enter positions when confident that the odds were in my favor, and only hold that position for only a short duration using 15 minute bars, so as to not allow the time for the odds to regulate back to being against me.

The challenge presented at this point, was determining which indicators would generate the most confidence when entering a trade. Based off my research, as mentioned earlier, it appeared that most technical indicators, which traders commonly use as “triggers” to enter or exit the market, typically get the trader out of their position on average 5-10 pips lower than the max potential profit of their trade. Thus, if I could predict a reversal manually, I can intervene in the short period of time after the banks flip the market, but before automated trading robots will exit their position. I could claim profits. This conclusion allowed me to determine that the most useful indicators for this trading strategy were ones that helped signal a reversal, rather than indicate a trend. After testing a multitude of indicators and indicator combinations in an exhaustive fashion, both through use of back-testing and testing in real-time, it was determined that the ideal combination of indicators and technical analysis for my manual trading system were; RSI, Bollinger Bands, parabolic SAR, and daily hi-low's.

Bollinger Bands were used to identify irregular patterns in the data through the use of upper and lower limit lines set two standard deviations above and below the mean of the past twenty bars (default setting). Theoretically, two standard deviations will capture 95% of the data within the range of the upper and lower limits. Therefore, if a bar breaks through and closes outside one of these limits, statistical probabilities suggest that the next bar will return back within the normal distribution. Since this is not always true, RSI was then utilized to verify the position. The RSI indicator can signal a potential reversal by revealing that a currency pair is either overbought or oversold. If it enters either of these regions it may be a sign that the banks are looking to reverse their position, in an attempt to capitalize on trend-following traders in order shift the market and profit. RSI can also signal a false breakout, if a new high in price is set but a new high in RSI is not. This information can be useful when in combination with a Bollinger Band breakout for several reasons. If the RSI suggests a false breakout in the direction of a long, and the previous bar broke through and closed above the upper limit Bollinger Band, then I will likely short that position because it may be the banks trying to drive the market quickly in one direction, only to take the other position right after. Another way to utilize the two indicators in coordination is; if the RSI is in the extremely overbought zone, and the previous bar broke through and closed above the upper limit of the Bollinger Band, I will also likely short this position because it may indicate a final surge before the end of a trend and the banks swing the market in the other direction. I then utilize the daily hi-lo's to strengthen my confidence that a reversal is in store if it is nearing one of these points, and has already triggered both the RSI and Bollinger Band indicators. Lastly, the parabolic SAR is utilized simply as a point of reference, as it indicates the current trend that I am anticipating will reverse.

Although these technical indicators strengthen confidence when entering a trade, they alone do not provide me the confidence necessary to achieve my system's goal of maintaining a high winning percentage. However, these technical indicators may be the best indication of a reversal when used in combination with some manual analysis techniques of my own. These analysis techniques include (A) setting manual "ceilings" and "floors", (B) determining that with each consecutive bar of the same color that the odds of the next bar being that color are reduced, (C) impact of news surrounding a currency, (D) "railroad tracks" as a sign of potential reversal as traders exit their bad position, and (E) volatility of pairs depending on the time of day. I determined manual "ceilings" and "floors" based on oscillations of a specific currency pair and the time and level at which these oscillations occurred, by observing historical data for that particular pair. Although determining that with each consecutive bar of the same color that the odds of the next bar being that color are reduced, the most useful pattern I've derived from this information is with heavily traded currency pairs, such as EUR/USD. When observing these heavily traded pairs (EUR/USD, USD/JPY, etc.), I noticed that about 90% of the time, or more, when there are four consecutive bars of the same color, the fifth bar is the opposite color. However, due to human psychology studies showing that people put more emphasis on a $100 profit, as oppose to a $100 loss[36] (Phung), I tend to wait one bar longer when the trend is in the bearish direction (see Figure 1). It was also observed that "railroad tracks" often occur at the same time as the data breaks either the upper or lower limit of the Bollinger Bands. Which may signal that the banks are driving up the price, just to exit their position once it appears that the trend is bullish, or vice versa (see Figure 2). An additional observation made when studying past research is how the movement of the market varies depending on time of day. For instance, the market is somewhat stagnant around 5pm Eastern Standard time, only moving five to ten pips in either direction. However, the range of oscillations appears to widen further with each hour after 5pm, until stagnating again in the early morning. Although all of these observations and forms of manual analysis are helpful, they must be used in coordination with my technical indicators to achieve the level of confidence I aspire for when entering a trade.

[36] Phung, A. (n.d.). *Investopedia: Prospect Theory*. Retrieved from http://www.investopedia.com/university/behavioral_finance/behavioral11.asp

Figure 54: Example screenshot of Trading Strategy (i)

Figure 55: Example Screenshot of Trading Strategy (ii)

The confidence possessed when entering any trade is a function of how many of these indicators and forms of analysis were triggered to verify my position. Since my system is predicated on maintaining a high winning percentage, typically more than half of these indicators must be triggered to allow me the confidence needed to enter a position. However, since my strategy is based on trading reversals, it is imperative to always check the news surrounding a currency pair prior to entering a position. This is because news surrounding a currency may potentially have a large enough impact to push the market in one direction further than my indicators and analysis of historical data anticipate. For example, if the RSI is in the overbought zone, typically over 70 although it varies depending on currency pair, and the previous bar closed above the upper limit Bollinger Band, then I would consider entering the market.

However, in order to justify entering the market, it must also follow at least one of my manual analysis techniques, such as (A) nearing a “ceiling” or “floor” that I have determined, or (B) have had four or more bars of the same color in a row. Once both the technical and manual indicators verify my position in entering the market, the last step taken to validate my position is to check the recent news surrounding the currency pair this system intends to trade. If there is nothing in the news about that specific currency pair that may suggest an extreme trend, then I can be confident enough in my position to enter the market.

Once the objectives I aspire for my system to accomplish have been determined, as well as the signals to enter the market, the next step in the methodology behind creating my manual trading system is risk and money management. The first risk-management measure taken was to determine an appropriate stop-loss level. However, this proved to be a more daunting task than anticipated, as I struggled to determine the ideal level in which to place a stop-loss. The conclusion that was ascertained was to set my stop-loss level about 20-30 pips above or below my point of entry into the market. Although this stop-loss was mainly utilized as a precaution, rather than a rule, due to my style of trading. To elaborate, since this system is predicated on capturing reversals and not typically being in the market for an extended period of time, often I am rigorously checking and watching the market for the short period of time a trade is held. Thus, my system rarely generates a large enough draw-down to trigger this stop-loss, prior to me closing the position manually, hence why the stop-loss is used mainly as a precaution in the case of an extreme trend. Where money and risk management play a major role in this particular trading system is in determining an appropriate position-size and leverage to use in each trade. Since my system entails making few trades, in order to maintain a high winning percentage, and not staying in the market for very long with each trade, to limit my draw-down and risks, allocating the proper position size and leverage when entering a trade is crucial. The size of the position, or the amount of leverage used, when entering a trade in my system is directly proportional to the perceived risk when entering the trade, which can be derived from the amount of indicators triggered. Meaning, the more indicators that verify my position, the more confidence will be possessed when entering the trade, because the perceived risk is less. As mentioned prior, I do not trade frequently and I do not hold the few trades executed for an extended period of time, thus I must capitalize on the short amount of time when actually in the market. My system attempts to capture these short moments, where I believe the odds are in my favor, by allocating a large position size or higher leverage to maximize profits in that short window of time. Thus, the more confident I am when entering a position, a function of how many indicators verify my position, the larger the position size I will take.

Additionally, if I am incorrect as to when I anticipate a reversal is going to happen because the 15 minute bar following my entry is going the opposite direction then I anticipated, and there is no news that would drastically affect the market, the likelihood that the next bar will be the opposite color is increased. Thus, although incorrect about my initial position I will remain confident a reversal is in store, adding to my open position as I lose money, rather than close the position. Therefore, once the market does eventually turn in my favor I will have allocated a large enough position size or high enough leverage to recoup my losses, and hopefully profit. Although this radical position-sizing strategy at times can prove extraordinarily effective, it also is highly-risky and difficult to trade mentally. This difficulty arises from the inherit substantial draw-downs associated this system, and the risk that if the markets go extremely in one direction your account may be wiped out prior to capturing the reversal. Since limiting draw-down is a focal point in my system's objectives, I rarely rely on this extreme leveraging, in the fear that one substantial losing trade may be large enough to balance-out all the prior profits. However, the only instance when these extreme risk-taking measures are incorperated is when I am certain that a reversal is in store in the near future, from my indicators and analysis techniques, and there is no recent news to suggest otherwise. Additionally, this aspect of my manual trading strategy is only utilized at times when the market is more stagnant, meaning that the swings in either direction are less substantial. For instance, the market typically becomes stagnant around 5 pm eastern time, so I would only incorporate this aspect of my trading system for up to two hours after the market stagnates. (An example of this manual trading system can be seen below)

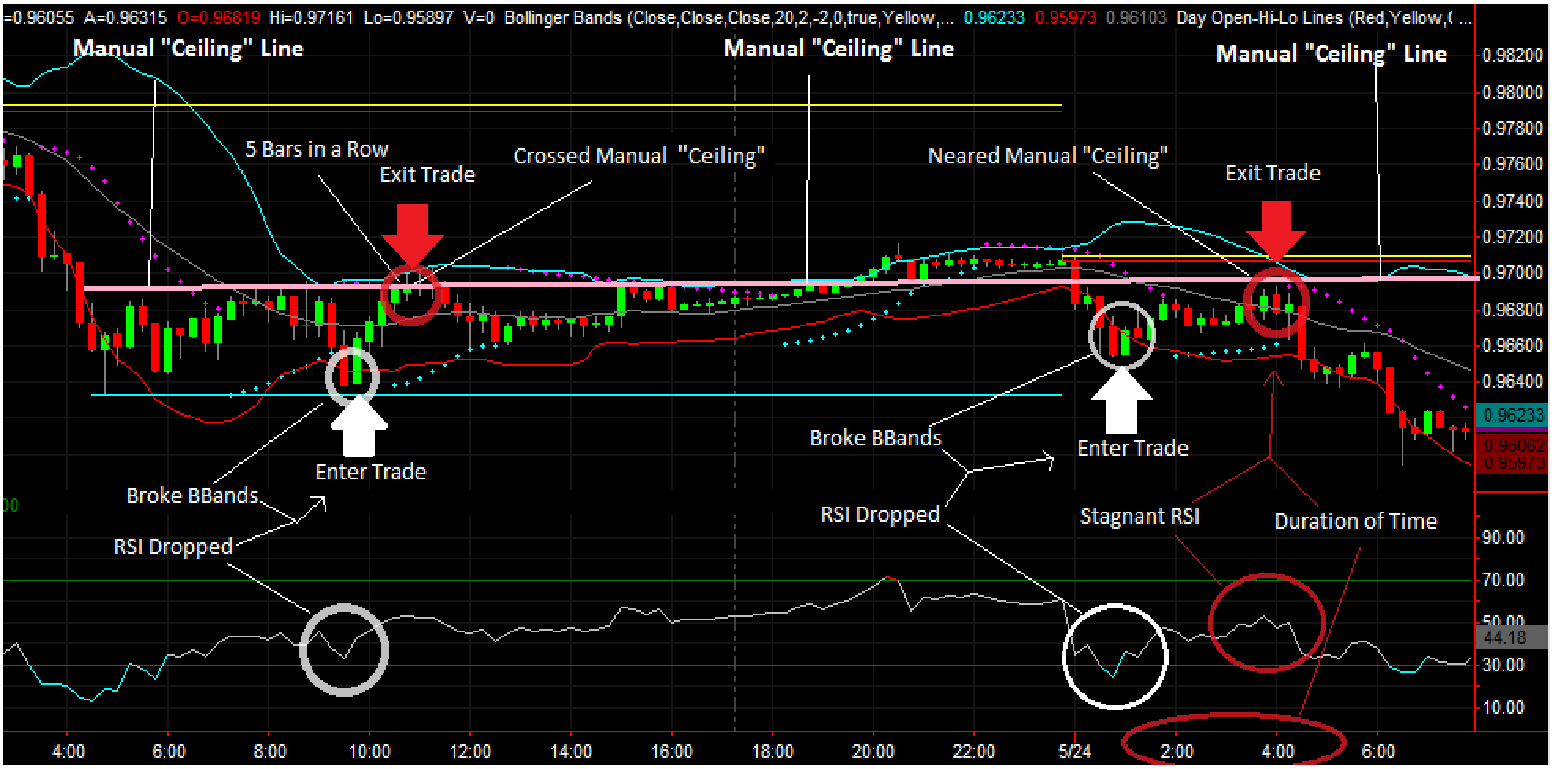

Figure 56: Example of Nick's Manual Trading

4.3.2 Automated Trading System

Although I trade manually the vast majority of the time, I have also developed an automated trading system. Much like the methodology behind creating my manual trading system, the first step taken to generate my automated trading system was to compile a substantial amount of research on indicators and currency pairs. From which I determined my primary currency pair of focus to be USD/CHF (US Dollar vs. Swiss Franc).

Once I have procured an appropriate amount of data from my research, the objectives I intend for my system to accomplish must be determined. Contrary to my manual trading system, my automated trading system is far less concerned about winning percentage and capturing short reversals. Rather, my automated trading system is predicated on capturing trends. Therefore, the primary objectives of my automated trading system are; generating a high average profit per trade, minimal amount of trades, holding each trade for an extended period of time(several hours to a day) to capture trends, and a low time commitment.

Now that the objectives for my automated trading system have been clearly outlined, the next step in the methodology is to determine which indicators, and combination of indicators, will be most effective in achieving my system's goals. Once again, the process of determining the optimal combination of indicators was done through extensive research, as well as exhaustive testing of various indicator pairs. After thorough deliberation and back-testing, the conclusion was drawn that the optimal combination of indicators for my system were (A) RSI utilized as a set-up, (B) two line SMA used as a trigger, and (C) a Parabolic SAR to be used as a discretionary indicator that will not generate any trades, but rather to help verify the strength of my position.

In order to maintain a scientific approach to creating my automated trading system, both RSI and SMA were back-tested separately, then individually optimized and back-tested once again. Each indicator was optimized using an exhaustive-testing method to determine the ideal inputs for each individual indicator over the past 14 days, using 15 minute candlesticks, for my currency pair of choice (USD/CHF). Through utilization of the optimize feature in TradeStation, it was determined that the optimal inputs for each indicator individually were: RSI: Length (10), Oversold (39), and Overbought (56), and for SMA: Fast Length (7), Slow Length (11). The performance reports for each indicator individually after optimization are shown below.

Table 1: USD/CHF RSI Performance Report (Optimized)

USD/CHF RSI Performance Report(Optimized)	**All Trades**	**Long Trades**	**Short Trades**
Total Net Profit	$3,035.87	$2,199.99	$835.87
Gross Profit	$4,596.28	$2,827.43	$1,768.85
Gross Loss	($1,560.41)	($627.44)	($932.98)
Profit Factor	2.95	4.51	1.90

Table 2: USD/CHF SMA Performance Report (Optimized)

	All Trades	**Long Trades**	**Short Trades**

Total Net Profit	$2,542.69	$2,389.91	$152.79
Gross Profit	$6,443.89	$4,248.20	$2,195.69
Gross Loss	($3,901.20)	($1,858.30)	($2,042.90)
Profit Factor	1.65	2.29	1.07

Once the ideal inputs for each of these indicators individually, without incorporating an exit signal and using a fixed position size of one standard lot, I attempted to combine both the set-up and trigger indicators together using an “and” function. However, the result of this combination of individually optimized indicators proved less effective than each indicator separately, as you can see from the data presented below.

Table 3: USD/CHF SMA+RSI Performance Report (Not Optimized Together)

	All Trades	Long Trades	Short Trades
Total Net Profit	($929.74)	$56.34	($986.08)
Gross Profit	$56.34	$56.34	$0.00
Gross Loss	($986.08)	$0.00	($986.08)
Profit Factor	0.06	n/a	0.00

Although this indicator pair, with the inputs for each that were previously listed, generated a loss overall, I remained optimistic and proceeded to optimize the two indicators together rather than separately. Once again, through utilization of the optimize feature in TradeStation, I was able to determine the optimal inputs for both indicators combined to be; RSI: Length (9), Oversold (47), Overbought (63) and for SMA: Fast Length (4), Slow Length (7). The performance report, generated from utilization the data of the past 14 days for my currency pair of choice (USD/CHF) using 15 minute bars, was substantially improved, as can be seen from the data presented below.

#	Type	Date/Time	Signal	Price	Roll Over Amt (USD)	Shares/Ctrts/Units Profit	Net Profit Cum Net Profit	% Profit	Run-up Drawdown	Efficiency
1	Buy	05/14/13 01:30	Buy RSI	Fr.0.95379	$0.52	100000	$1,833.16	1.86%	$2,148.00	92.19%
	Sell	05/15/13 08:30	Sell RSI	Fr.0.97157		$1,833.16	$1,833.16		($185.52)	86.31%
2	Sell Short	05/15/13 08:30	Sell RSI	Fr.0.97157	($3.85)	100000	$1,049.66	1.04%	$1,439.11	99.35%
	Buy to Cover	05/16/13 15:00	Buy RSI	Fr.0.96144		$1,049.66	$2,882.82		($9.28)	73.31%
3	Buy	05/16/13 15:00	Buy RSI	Fr.0.96144	$0.62	100000	$1,092.42	1.10%	$1,495.30	97.20%
	Sell	05/17/13 11:00	Sell RSI	Fr.0.97206		$1,092.42	$3,975.25		($43.57)	73.65%
4	Sell Short	05/17/13 11:00	Sell RSI	Fr.0.97206	($1.13)	100000	$137.91	0.14%	$423.77	56.75%
	Buy to Cover	05/20/13 02:15	Buy RSI	Fr.0.97071		$137.91	$4,113.15		($322.70)	61.85%
5	Buy	05/20/13 02:15	Buy RSI	Fr.0.97071	$0.61	100000	$861.49	0.87%	$1,332.80	68.59%
	Sell	05/22/13 14:30	Sell RSI	Fr.0.97915		$861.49	$4,974.64		($620.83)	75.67%
6	Sell Short	05/22/13 14:30	Sell RSI	Fr.0.97915	$0.00	100000	$1,214.55	1.20%	$1,639.63	86.19%
	Buy to Cover	05/23/13 13:45	Buy RSI	Fr.0.96740		$1,214.55	$6,189.18		($258.77)	77.71%

Figure 57: USD/CHF SMA+RSI Trades Executed

Figure 58: USD/CHF Strategy Trades

USD/CHF SMA+RSI Performance Report (Optimized Together)

TradeStation Performance Summary

Collapse

All Trades

Total Net Profit	$6,189.18	Profit Factor	n/a
Gross Profit	$6,189.18	Gross Loss	$0.00
Roll Over Credit	($3.24)		
Open Position Profit/Loss	$104.22		
Select Total Net Profit	$6,189.18	Select Profit Factor	n/a
Select Gross Profit	$6,189.18	Select Gross Loss	$0.00
Adjusted Total Net Profit	$3,662.46	Adjusted Profit Factor	n/a
Adjusted Gross Profit	$3,662.46	Adjusted Gross Loss	$0.00
Total Number of Trades	6	Percent Profitable	100.00%
Winning Trades	6	Losing Trades	0
Even Trades	0		
Avg. Trade Net Profit	$1,031.53	Ratio Avg. Win:Avg. Loss	n/a
Avg. Winning Trade	$1,031.53	Avg. Losing Trade	$0.00
Largest Winning Trade	$1,833.16	Largest Losing Trade	$0.00
Largest Winner as % of Gross Profit	29.62%	Largest Loser as % of Gross Loss	n/a

TradeStation Performance Summary

Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$6,189.18	$3,787.07	$2,402.11
Gross Profit	$6,189.18	$3,787.07	$2,402.11
Gross Loss	$0.00	$0.00	$0.00

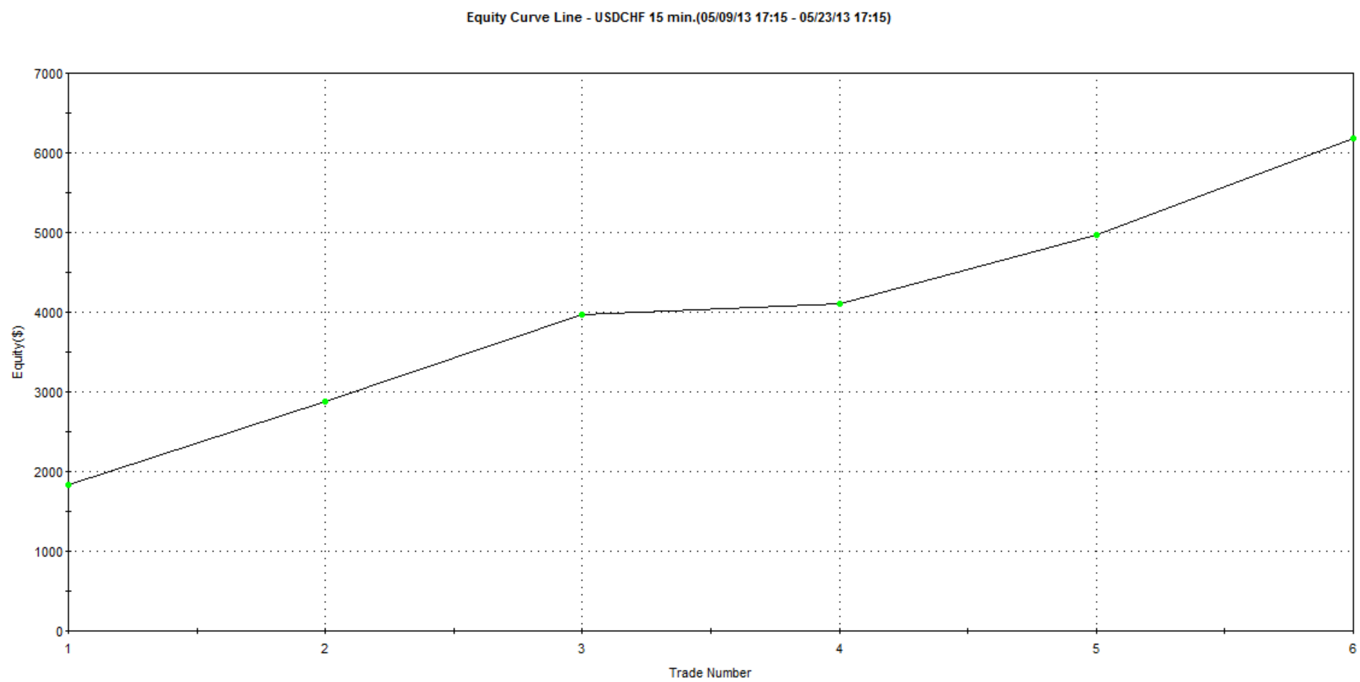

Figure 59: USD/CHF Equity Graph for RSI+SMA (Optimized Together)

Once the optimal currency pair to trade, timeframe, system's objectives, set-up indicator, trigger indicator, and ideal inputs for both indicators together have been established, I must then determine how to effectively manage my money and risks taken. The first task in doing so was to determine an appropriate stop-loss level, and exit signal. Unfortunately, due to my lack of programming skills, I had difficulty incorporating a stop loss into my code effectively. Therefore, I determined that I would utilize a variable stop-loss depending on the situation when entering each trade. For instance, if my indicators generate an entry into the market at a more stagnant time of the day, five O'clock pm for example, then I will set a stop-loss about 10-15 pips above or below my point of entry. However, if it is at a period in the day where the oscillations of the currency pair are more extreme, such as nine O'clock pm, then I would set my stop-loss about 20-30 pips above or below my point of entry, so as to not miss out on a potential big swing after a slight draw-down. Another crucial factor in money and risk management, is determining the appropriate position size to allocate to each trade. Contrary to my manual trading system, which utilizes a variable position-size and leverage that is dependent on the circumstances surrounding each trade; my automated trading system employed a fixed position-size of one standard lot per trade. The reasoning behind this position-size is due to the potential large draw-down associated with this system, therefore only a minimal portion of my funds will be allocated in each trade in order to reduce the risk of a large draw-down emptying my account. Once everything previously discussed has been determined, the last step in the methodology behind creating my automated trading system is to ascertain an optimal exit signal. This optimal exit signal was established to be, after rigorous back-testing, the inverse of my entry signal, meaning (A) RSI is used as a set-up to potentially exit the market which is used in coordination with a parabolic SAR to help verify, and (B) the two line SMA is utilized the trigger to exit when they cross. The final code for this automated trading system, trading the USD/CHF currency pair, can be seen below.

Nick's Automated Strategy Code (Optimized for USD/CHF Pair):

```
inputs:
    Price( Close ),
    Length1( 9 ),
    OverSold( 47 ),
    OverBought( 63 ),
    OverSColor( Cyan ),
    OverBColor( Red ),
    FastLength( 4 ),
    SlowLength( 7 ),

    double TestPriceUBand( Close ), { if this price crosses under the upper band,
     and alerts are enabled, then an alert will be triggered }
    double TestPriceLBand( Close ), { if this price crosses over the lower band,
     and alerts are enabled, then an alert will be triggered }
    bool ColorPercentB( true ), { set this input to true if it is desired for the %B
     values that are shown in RadarScreen to be colored according to their values }
    int PercentBVeryHighColor( Yellow ), { if ColorPercentB is true, use this color
     for %B values that are greater than 100;  if ColorPercentB is false then this
     input has no effect }
    int PercentBHighColor( Red ), { if ColorPercentB is true, use this color for %B
     values that are greater than or equal to 50;  if ColorPercentB is false then
     this input has no effect }
    int PercentBLowColor( Magenta ), { if ColorPercentB is true, use this color for
     %B values that are less than 50;  if ColorPercentB is false then this input has
     no effect }
    int PercentBVeryLowColor( Cyan ) ;

     variables:  MyRSI( 0 ),
     intrabarpersist bool PlotPercentB( false );
     MyRSI = RSI( Price, Length1 ) ;

variables:
     FastAvg( 0 ),
     SlowAvg( 0 ) ;

FastAvg = AverageFC( Price, FastLength ) ;
SlowAvg = AverageFC( Price, SlowLength ) ;

once
     PlotPercentB = GetAppInfo( aiApplicationType ) <> cChart ;

{ Alert criteria }
if MyRSI crosses over OverSold and FastAvg crosses over SlowAvg then
Begin
     Buy ("Buy RSI") next bar at market ;
     Alert( "Indicator exiting oversold zone");
     end;
if MyRSI crosses under OverBought and FastAvg crosses under SlowAvg then
Begin
     Sellshort ("Sell RSI") next bar at market ;
     Alert( "Indicator exiting overbought zone" );
end;
```

```
inputs:
    double AfStep( 0.02 ),
    double AfLimit( 0.2 ),
    bool UsePlotColoring( true ), { set to true if it is desired to use different
     colors to plot the parabolic based on whether prices are currently above the
     parabolic or below it }
    int PriceAbvParabColor( Cyan ), { if UsePlotColoring is true, this input
     specifies the color that will be used to plot the parabolic when prices are
     above it;  if UsePlotColoring is false then this input has no effect }
    int PriceBlwParabColor( Magenta ), { if UsePlotColoring is true, this input
     specifies the color that will be used to plot the parabolic when prices are
     below it;  if UsePlotColoring is false then this input has no effect }
    bool ColorCellBGOnAlert( true ), { if true, cell background color will be
     changed when alert criteria are met;  if false then cell background color will
     not be changed when alert criteria are met }
    int BackgroundColorAlertCell( DarkGray ) ; { if ColorCellBGOnAlert is true, this input
     specifies the color to which the cell background will be changed when the alert
     criteria are met;  if ColorCellBGOnAlert is false then this input has no
     effect }

variables:
    intrabarpersist bool PlotCrossBarsAgo( false ),
    double oParCl( 0 ),
    double oParOp( 0 ),
    double oPosition( 0 ),
    double oTransition( 0 ),
    int CrossBarsAgo( 0 ),
    intrabarpersist bool Alerting( false ),
    AlertStr( "" ) ;

once
    begin
    { if the application is something other than Charting, like RadarScreen, then
     set PlotCrossBarsAgo to true to indicate that the number of bars ago that the
     last cross of the parabolic occurred is to be plotted;  this value is not
     plotted in Charting since it is on a different scale than the parabolic
     itself }
    PlotCrossBarsAgo = GetAppInfo( aiApplicationType ) <> cChart ;
    end ;
```

```
Value1 = ParabolicSAR( AfStep, AfLimit, oParCl, oParOp, oPosition, oTransition ) ;

{ track the number of bars since the last crossover;  if oTransition is non-zero
then there is a crossover on the current bar, so set CrossBarsAgo to 0 when this
occurs, otherwise, increment CrossBarsAgo by 1 on every bar }
if oTransition <> 0 then
    CrossBarsAgo = 0
else
    CrossBarsAgo += 1 ;


{ Alert criteria }
if oTransition = 1 then
    begin
    Alerting = true ;
    Alert( "Bullish reversal" ) ;
    end
else if oTransition = -1 then
    begin
    Alerting = true ;
    Alert( "Bearish reversal" ) ;
    end
else
    Alerting = false ;
```

Additionally, this strategy I have devised was implemented for several alternative currency pairs, the most successful of which being the EUR/USD pair. Although this is not the primary currency pair of focus for this particular automated trading system, I was eager to explore all possible options for this system, and compare the results to that of my currency pair of choice (USD/CHF). However, when utilizing the same indicator inputs for the EUR/USD currency pair as I had with the USD/CHF currency pair, no trades were generated. Therefore, I determined I must re-optimize my indicators to this specific pair. Through utilization of TradeStation's optimize function, I was able to ascertain the ideal indicator inputs for this particular currency pair to be; RSI: Length (7), Oversold (44), Overbought (68) and for SMA: Fast Length (9), Slow Length (8).

Once the optimal indicator inputs for my automated trading system had been defined, all other aspects of the strategy's code remained unchanged, TradeStation's back-testing feature was then utilized to generate a performance report for this strategy when applied to the EUR/USD currency pair for the past 14 days (results can be seen below). The performance report for this currency pair dictates a successful strategy, generating a net profit exceeding $5,000 in just 14 days with no losing trades being executed. However, when my automated trading system is applied to this alternative currency pair (EUR/USD), it appears to be significantly less profitable than my currency pair of focus (USD/CHF), generating a difference in net profit of nearly $1,000. Although the EUR/USD currency pair proved to be marginally less successful than my focal currency pair, the results still prove promising. These positive results, generated by utilizing an alternative currency pair (EUR/USD), allow for the future potential to incorporate this alternative currency pair into automated trading strategy, thus theoretically increasing my profit margin by trading several positions at once.

#	Type	Date/Time	Signal	Price	Roll Over Amt (USD)	Shares/Ctrts/Units Profit	Net Profit Cum Net Profit	% Profit	Run-up Drawdown	Efficiency
1	Buy	05/12/13 21:30	Buy RSI	$1.29685	($1.30)	100000	$504.70	0.39%	$596.70	68.26%
	Sell	05/14/13 05:45	Sell RSI	$1.30191		$504.70	$504.70		($278.00)	89.50%
2	Sell Short	05/14/13 05:45	Sell RSI	$1.30191	$0.80	100000	$1,598.80	1.23%	$1,766.50	97.95%
	Buy to Cover	05/16/13 05:00	Buy RSI	$1.28593		$1,598.80	$2,103.50		($37.00)	90.63%
3	Buy	05/16/13 05:00	Buy RSI	$1.28593	($1.40)	100000	$140.60	0.11%	$695.00	87.64%
	Sell	05/17/13 04:15	Sell RSI	$1.28735		$140.60	$2,244.10		($99.40)	30.26%
4	Sell Short	05/17/13 04:15	Sell RSI	$1.28735	$0.00	100000	$448.00	0.35%	$778.00	84.11%
	Buy to Cover	05/17/13 13:00	Buy RSI	$1.28287		$448.00	$2,692.10		($147.00)	64.32%
5	Buy	05/17/13 13:00	Buy RSI	$1.28287	($6.90)	100000	$1,156.10	0.91%	$1,284.10	92.74%
	Sell	05/22/13 10:15	Sell RSI	$1.29450		$1,156.10	$3,848.20		($104.10)	90.80%
6	Sell Short	05/22/13 10:15	Sell RSI	$1.29450	$0.00	100000	$923.00	0.71%	$1,123.00	68.27%
	Buy to Cover	05/22/13 18:30	Buy RSI	$1.28527		$923.00	$4,771.20		($522.00)	87.84%
7	Buy	05/22/13 18:30	Buy RSI	$1.28527	$0.00	100000	$443.00	0.34%	$624.00	66.03%
	Sell	05/23/13 09:15	Sell RSI	$1.28970		$443.00	$5,214.20		($321.00)	80.85%

Figure 60: EUR/USD SMA+RSI Trades Executed

Figure 61: Bar-Chart Indicating executed trades

EUR/USD SMA+RSI Performance Report (Optimized Together)

TradeStation Performance Summary

Collapse

All Trades

Total Net Profit	$5,214.20	Profit Factor	n/a
Gross Profit	$5,214.20	Gross Loss	$0.00
Roll Over Credit	($8.80)		
Open Position Profit/Loss	($289.00)		
Select Total Net Profit	$5,214.20	Select Profit Factor	n/a
Select Gross Profit	$5,214.20	Select Gross Loss	$0.00
Adjusted Total Net Profit	$3,243.42	Adjusted Profit Factor	n/a
Adjusted Gross Profit	$3,243.42	Adjusted Gross Loss	$0.00
Total Number of Trades	7	Percent Profitable	100.00%
Winning Trades	7	Losing Trades	0
Even Trades	0		
Avg. Trade Net Profit	$744.89	Ratio Avg. Win:Avg. Loss	n/a
Avg. Winning Trade	$744.89	Avg. Losing Trade	$0.00
Largest Winning Trade	$1,598.80	Largest Losing Trade	$0.00
Largest Winner as % of Gross Profit	30.66%	Largest Loser as % of Gross Loss	n/a

TradeStation Performance Summary

Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$5,214.20	$2,244.40	$2,969.80
Gross Profit	$5,214.20	$2,244.40	$2,969.80
Gross Loss	$0.00	$0.00	$0.00

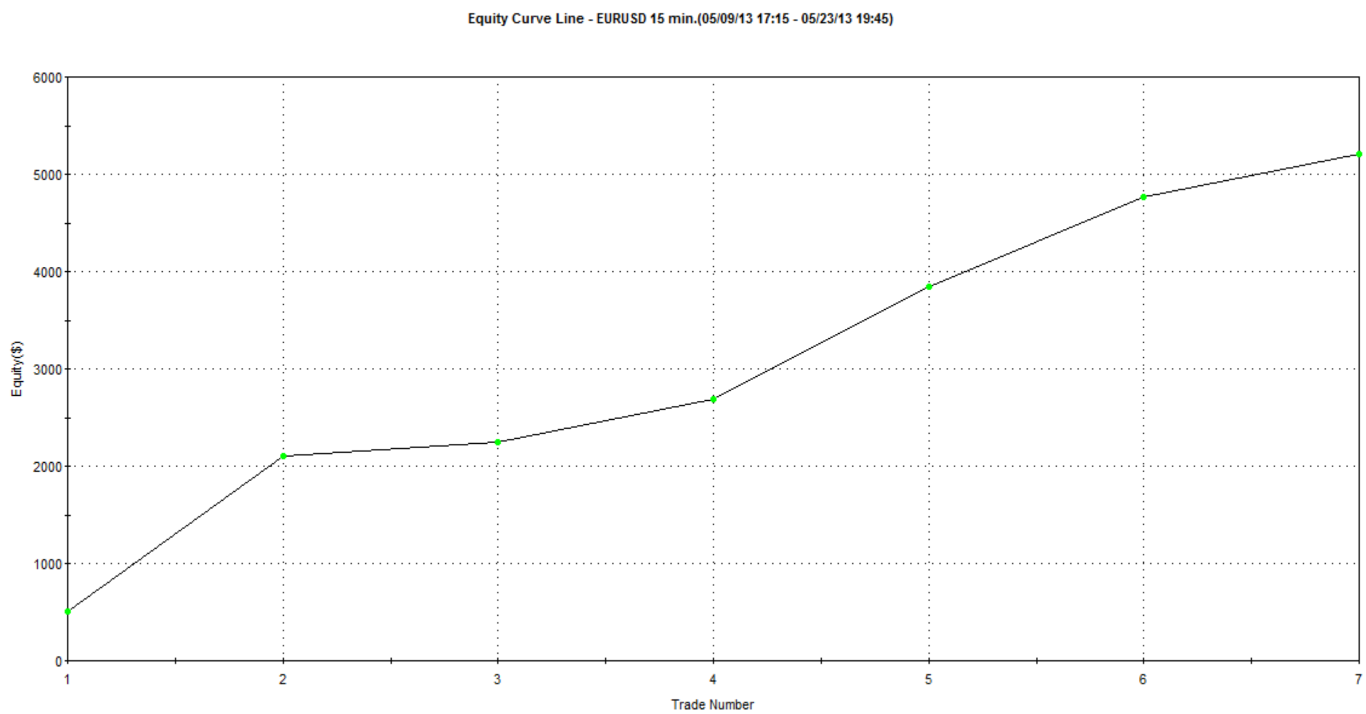

Figure 62: EUR/USD Equity Graph for RSI+SMA (Optimized Together)

Chapter 5: Group System

Chapter 5 discusses the focal objective of the project, a final automated trading system developed by the group utilizing a scientific and methodical approach. This chapter will explain, in great detail, the various aspects of our final automated trading system, as well as the reasons behind incorporating each aspect. The rationality for each aspect that was chosen and integrated into our final automated trading system is explained in-depth, and can be derived from the scientific methodology utilized to generate this system. Additionally, multiple rules the system must follow, implemented in order to increase profitability, and the explanation for why each rule was chosen is discussed in this chapter.

5.1 System's Objectives

The group's trading system was built upon a structured methodology. The initial step was to define the objectives we desired. Despite having varying ideas as to the individual strategies, we were able to successfully confer to effectively determine the ideal objectives for the group's automated trading system. The group anticipated crafting a trend-following system that traded frequently, in order to be in the market as often as possible to capitalize on large trends. Therefore, maintaining a high winning percentage wasn't one of the focal objectives for our group's system. Additionally, limiting the draw-down per trade was of minimal importance to the automated trading system. Limiting draw-down was not an area of focus for our system due to the inherent large draw-downs associated with a trend-following system, because the system traded frequently in the market in the hopes of exploiting a trend. Rather, the primary objective of our group's automated trading system was to generate a substantial profit per winning trade. Achieving this objective was crucial for this specific system to succeed. This objective is particularly vital because the nature of a trend-following system itself. Generating enough profit on each winning trade is vital to cancel out the losses of the numerous losing trades, and ultimately become profitable.

Although it would surely be a formidable challenge, our group aspires for an annual return to total about 10%, or approximately a 0.83% return rate each month from this automated trading system. Thus, with an investment capital of $100,000 per person, each individual had strived to generate a monthly profit exceeding at least $830 on average.

5.2 Entries

Once the primary objectives for our system to accomplish have been determined, the next step of the methodology behind creating our automated trading system is to conduct thorough research on an array of crucial factors. These elements include such aspects as; currency pair of focus, potential filters, and ideal indicator combinations. After utilizing a methodical approach, we ultimately determined Euro/US Dollar (EUR/USD) to be the optimal currency pair of focus for our automated system. The high-volume associated with this currency pair (EUR/USD) is one of the most crucial factors we took into account. Since EUR/USD is such a frequently traded currency pair, the likelihood of an abnormally extreme swing is reduced, making it less volatile than those currency pairs with a lower trade volume (i.e. NZD or AUD). This reduced volatility is a vital aspect for our automated trading to achieve its desired success due to the fact that reduced volatility complements our trend-following strategy.

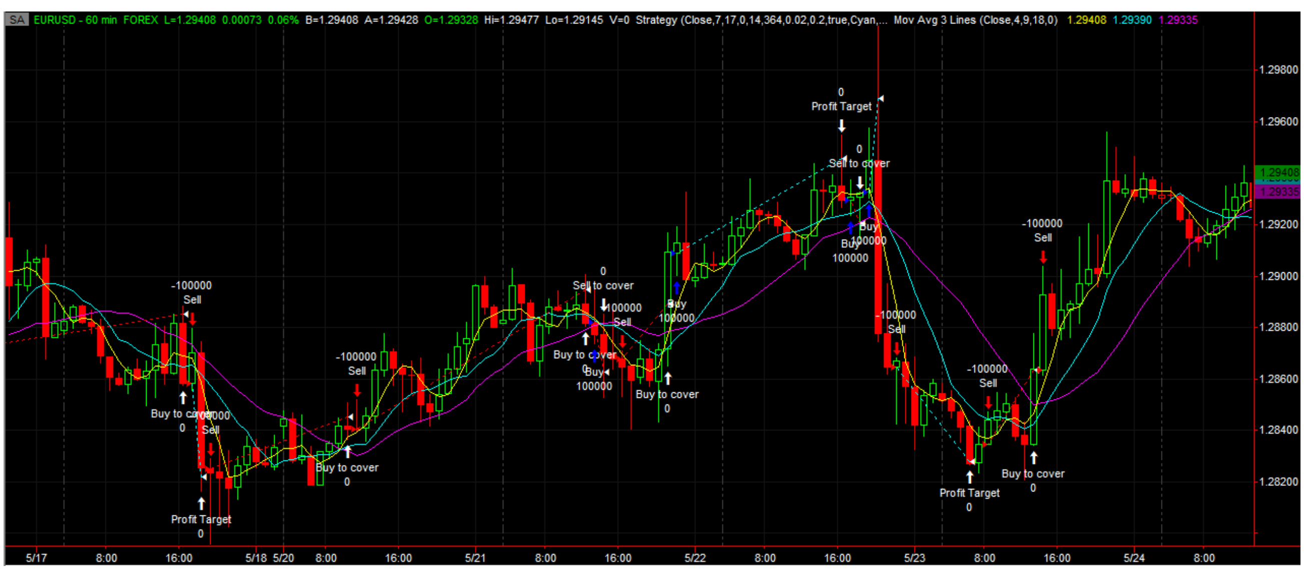

Figure 63: Bar Chart representing the Group Strategy Entry and Exit signals

Our group's automated trading system utilizes time-of-day and day-of-week filters. It will only initiate trades between 8:00 AM and 12:00 AM, Monday through Thursday, and 8:00

AM and 3:00 PM on Fridays. These filters were determined through utilization of extensive walk-forward analysis. The walk-forward analysis program on TradeStation, allowed us to define the time-of-day, and day-of-week, that will produce the optimal profit margin for our automated system.

In order to ascertain an ideal set up rule, a systematic search of various indicators that we believed would best complement our trend-following system was conducted. Our group eventually determined the Relative Strength Index (RSI) to be the quintessential set-up indicator for our group's automated trading system. The reason for choosing RSI as the set-up indicator of choice is because knowing whether the market is currently overbought, or oversold, can give a good indication as to whether the market is trending, about the trend, or stagnant. Once RSI was determined to be the ideal set-up indicator, we must then define the optimal parameters for this indicator. Through utilization of exhaustive testing, using TradeStation's optimizing function, the ideal parameters for the RSI indicator in this particular trading system were determined: Length (14), Overbought (70), and Oversold (30). Therefore, in order for our system to generate a potential long trade, the RSI must be greater than or equal to 50, while being less than 70. Conversely, in order for our system to produce a potential short trade, the RSI must be greater than or equal to 30, while also being less than 50.

Having ascertained both the prime filters and set-up rules for our system, the final aspect of entry rules we must define is the ideal trigger indicator and its parameters. The trigger indicator will be what actually generates the "Buy" or "Sell" signal to enter the market, as long as this position is verified by both the filter and set-up rules prior to entering the trade. Once again, we conducted thorough research and testing while utilizing a methodical, and scientific, approach to determining the best possible trigger indicator. Once we had systematically integrated each potential trigger into our current filter and set-up rules and back-tested them, we were able conclude that a two-line exponential moving average would be the trigger indicator best suited for our system. However, upon optimizing the parameters for this indicator in coordination with the rules currently in place, no trades were generated. Therefore, we resorted to the default settings for the two-line exponential moving average parameters, due to the initial trades generated and success seen when first incorporating it as the trigger under the rules we have already established.

5.3 Exits

Once the system's rules for initiating a trade are clearly defined, the exit rules that would maximize profit and minimize losses per trade for our group's automated trading system must be determined. The first step in doing so is determining the optimal rules for discretionary exiting of a trade. First and foremost, if the trade does not meet the required time and dates, dictated by the time-of-day and day-of-week filters discussed in the previous section, all positions will be closed immediately. If these requirements are fulfilled, meaning it is the proper time-of-day and day-of-week and a trade is currently open, the set-up rule, or RSI, is the next factor to look at when determining an appropriate exit point. For instance, if the RSI drops below 30 at any point during the outstanding trade, all short positions will be closed instantaneously. Conversely, all long positions will be closed immediately if the RSI exceeds 70 at any time during an open position. The reason for doing this is because once the RSI is outside these limits that currency pair is considered Overbought or Oversold. If the RSI enters into either of these zones we determined that the market is likely on the tail end of a trend, with a potential reversal in store. Therefore, we do not want to be in the market at this point because the fear of a potential reversal is too risky, and our automated system is predicated on capturing the beginning of a trend rather than the latter half of a trend. Additionally, this system utilizes a Parabolic SAR as an indication to exit the market. For instance; on a long open position, if both the market-position and oPosition (position of Parabolic SAR) equals one, then our system begins the "Sell to Cover" function at next bar of oParOp stop. Inversely for a an open short position, if both the market-position and oPosition (position of Parabolic SAR) equals negative one, then our system begins the "Buy to Cover" function at next bar of oParOp stop. Lastly, if all the criteria previously discussed have been met, meaning that the filters, exits, and set-ups both have not triggered an exit yet, the final factor we look at is the trigger indicator, two-line exponential moving average. If a position is in the process of being held and the two exponential moving average lines re-cross over one another, in the inverse direction that initiated the open trade, the pre-existing position will be promptly closed. However, if the filter and set-up rules justify this crossing as potential trend in the opposite direction, once the initial trade has been closed; our system will initiate a new trade in the opposite direction.

The next challenge in defining the ideal exit rules for our group's automated system was determining how to effectively exit the market after in-activity. However, our group did not deem this as a prevalent issue for our system to overcome. The reason that in-activity is not an area of major concern for our group is because of the rules we have already determined, and mentioned previously. Since we intend to generate a trend-following system, rules have been devised accordingly to virtually eliminate trades during a stagnant period. For instance, the filters we have created for entry rules dictate that our system will only trade at times of the day associated with large swings, or trends, in either direction. Granted, this does not completely eliminate instances where we are in the market periods of in-activity, but nevertheless substantially quells the problem of entering into a stagnant market. However, sometimes these period of inactivity are not necessarily a negative occurrence for our system, as they may allow us to capture the beginning of a trend in either direction before it begins, thus maximizing profits.

Now that the rules for discretionary exiting are clearly defined, as well as rules for exiting after a particular period of in-activity, the next step is to determine appropriate threshold for when to exit a trade with a profit or loss. The error that most inexperienced traders make is that they do not have strict rules for when to exit the market with a maximum profit or a minimum loss. This error typically results from greed, causing the trader to hold a winning position too long and reducing potential profits, or increasing losses by holding a losing trade far too long in the hopes it will reverse in the direction of their open trade. In order to rectify this potential problem, it is imperative to set a strict profit limit per lot of the instrument being traded which in our case was at at $582.30. This limit indicates to exit the current position when this level of profit is reached, despite what any of the previously discussed exit signals may suggest. This take-profit point was implemented in order to deter greed and emotions from holding a position too long, and potentially narrowing the current profit margin. Unfortunately, our group was unable to attain an appropriate stop-loss level that would benefit our system. After numerous back-tests for a plethora of potential stop-loss levels in our system, tested in an exhaustive fashion, not one proved to benefit our system's annual return, rather every stop-loss tested would lower our year-end profit margin. However, this is not an area of major concern for the group because, as mentioned earlier, limiting draw-down was not a focal point for our system because of the inherent draw-downs associated with a trend-following system. So, it was concluded that the reason every stop-loss would limit our profit intake is because it would not be able to withstand the draw-downs prior to capturing a large trend. Therefore, our group elected not to incorporate a stop-loss in our strategy, but rather set manual stop-losses in cases of extreme draw-downs.

5.4 Order Types

Once, both the entry and exit rules for our group's automated trading system have been clearly established, the next step is to determine the order type intended to be used for entering and exiting these trades. Several options were tested for an order type to enter the market; however we ultimately concluded that a market order would be most beneficial to our system to enter a trade. Although a market order at times may initiate a trade at a non-ideal level with an immediate loss, we determined that this initial loss was negligible compared to the advantage of entering the market instantly when our indicators dictate entering a trade. However, we did not elect to utilize a market order for the exit order type, in the fear that it will limit our profit margin too vastly to compensate for the minor benefit of a quick exit from the market. Rather, our group adopted the exit signal to be utilized as our exiting order type as well. Therefore, once an exit is signaled, our automated system will place a "Buy to Cover" or "Sell to Cover" order into the market to be filled at next bar of oParOp stop. This specific market order is utilized as an exit order in the hopes of maximizing profits by reducing the amount of money lost when exiting, compared to various other order types, for instance, a market order.

5.5 Position Sizing and Risk Management Rules

A vital aspect to any trading system's success is implementing rules and measures to reduce the risk when entering a trade to minimize losses and, in-turn, maximize profits. Likely the two most crucial components to consider when determining how to effectively manage the risks of your system is position sizing and leverage. Allocating a large position size, or increased leverage, can substantially increase the amount of profit generate per trade, when done properly. However, this increased position size, or leverage, can also greatly increase the risks when entering a trade because you can lose a greater sum of money in a shorter period of time.

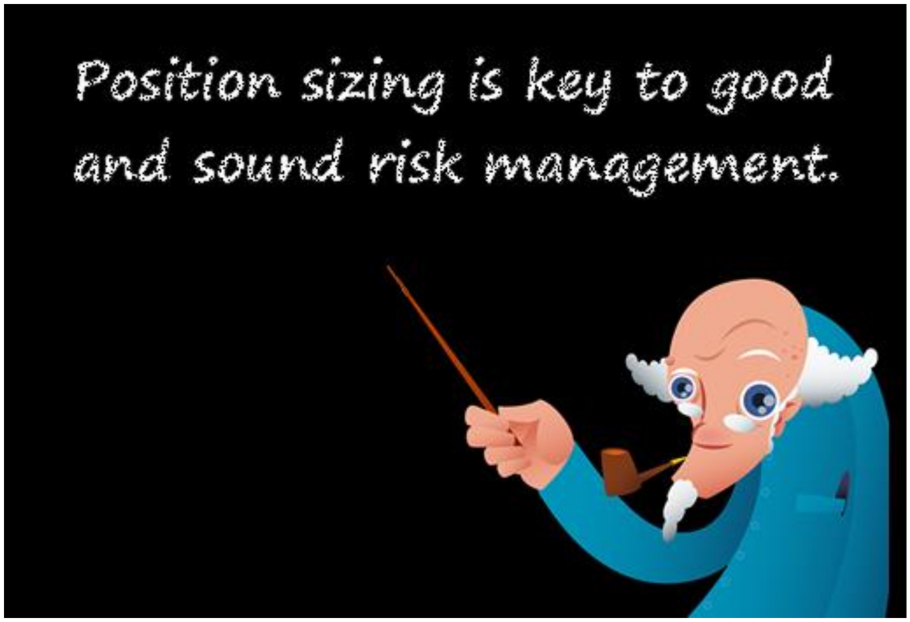

Figure 64: Position Sizing is Important

However, since our group's automated system is predicated on capturing trends over extended periods of time, it is inherently risky due to the draw-downs commonly linked to this method of trading. Therefore, the group elected to use one standard lot without any leverage, so as to not increase the risks taken by our system any further. Additionally, since our group opted not to utilize a stop-loss, because it would hinder our profit margin, we do not feel comfortable running the risk that an extreme draw-down could not only wipe out our profits, but our overall funds as well.

5.6 System Monitoring Rules

A crucial aspect a trader must consider, once he has fully developed an automated trading system, is to determine when it must be reviewed and changed in case it can no longer effectively achieve the predetermined goals that were desired from the system to accomplish. How to alter our automated system when it becomes inefficient is dependent on the circumstances causing the inefficiency, and, once the problem is identified, it is typically relatively simple to rectify. However, where the difficulty arises is in determining whether the system itself is indeed "broken" and requires alteration. A common error made by even the most experienced of traders is becoming blinded by the initial success generated by their system, and not realizing that it is no longer an efficient system for the current market conditions until the initial profits felt are negated.

Figure 65: Trade Platform Monitoring

In order to avoid making this treacherous gaffe, our group developed a set of rules to determine when our system needs to be temporarily shut-down and reviewed for potential alteration. Although no system will generate consistently profitable trades all the time, we determined that we must establish a threshold for the acceptable amount of losing trades in a row, or over a set duration or time. However, since the circumstances surrounding these losing trades can have a large impact on our perception of whether our system is indeed “broken” or not, we elected to develop tentative guidelines for when to halt our system. For instance; if our system generates substantial losses in roughly two consecutive months, or about 100 trades, we will deactivate our system and try to identify the problem, and decipher a possible solution prior to resuming our automated trading system. However, this rule is discretionary depending on what we deem to be substantial losses. For example; if the system begins generating 4-6% return per month for the first three months, two consecutive months of losing 1-2% likely will not warrant a total shutdown of our system. That said, the losses near the margin in which we are not comfortable allowing, derived from the prior success achieved by our system, we will closely monitor our system to make sure it does not cross this threshold of comfort.

5.7 Asset Allocation

Now that the automated trading system has been fully developed, with rules for system monitoring and deactivation in place, a critical aspect to then take into account when the system becomes incorporated in real-time is asset allocation. Through the research and experienced gained during this project about trading, we determined that we would allocate no more than 40% of our funds at any one time. However, our limit of 40% allocation of funds is spread over four varying currency pairs, meaning that we will not allocate more than 10% of our total capital to any one trade. Although 40% distribution of our assets is our maximum, the amount we have currently allocated at any point in time varies depending on the circumstances, and if they generate a trade from our automated system. Additionally, the currency pairs which these funds will be allocated across are also dependent on the situation at hand. Therefore, if one currency appears to be trending more heavily or predictably (much like the recent decline of the Japanese Yen) then we will likely focus on currency pairs involving that particular currency. However, the primary currency pair of focus for our system most often is the frequently traded EUR/USD pair, for reasons mentioned previously.

5.8 System Code

```
// Code - Nikhil Godani.

// Strategy – Nicholas Comeau, Nikhil Godani and Alex Presnal

// IQP - Trading, Investment and Portfolio Management
```

```
inputs:
	Price( Close ),
	FastLength( 7 ),
	SlowLength( 17 ),
	Displace( 0 ) ,
	Length( 14 ),
	Profittarget1 ( 364 ),
	double AfStep( 0.02 ),
	double AfLimit( 0.2 ),
	bool UsePlotColoring( true ), { set to true if it is desired to use different
	 colors to plot the parabolic based on whether prices are currently above the
	 parabolic or below it }
	int PriceAbvParabColor( Cyan ), { if UsePlotColoring is true, this input
	 specifies the color that will be used to plot the parabolic when prices are
	 above it;  if UsePlotColoring is false then this input has no effect }
	int PriceBlwParabColor( Magenta ), { if UsePlotColoring is true, this input
	 specifies the color that will be used to plot the parabolic when prices are
	 below it;  if UsePlotColoring is false then this input has no effect }
	bool ColorCellBGOnAlert( true ), { if true, cell background color will be
	 changed when alert criteria are met;  if false then cell background color will
	 not be changed when alert criteria are met }
	int BackgroundColorAlertCell( DarkGray ) ; { if ColorCellBGOnAlert is true, this input
	 specifies the color to which the cell background will be changed when the alert
	 criteria are met;  if ColorCellBGOnAlert is false then this input has no
	 effect }

variables:
	FastAvg( 0 ),
	SlowAvg( 0 ),
	EMA( 0 ),
	RS ( 0 ),
	intrabarpersist bool PlotCrossBarsAgo( false ),
	double oParCl( 0 ),
```

```
	double oParOp( 0 ),
	double oPosition( 0 ),
	double oTransition( 0 ),
	int CrossBarsAgo( 0 ),
	intrabarpersist bool Alerting( False ),
	bool TradeOn( False ),
	bool OverSold( False ),
	bool OverBought( False ),
	bool BuyingZone ( False ),
	bool SellingZone ( False ),
	MyRSI( 0 ),
	AlertStr( "" ) ;

once
	begin
	PlotCrossBarsAgo = GetAppInfo( aiApplicationType ) <> cChart ;
	end ;

// Computes the value of the following variables used in creating a strategy
FastAvg = XAverage( Price, FastLength ) ; // Value of Fast exponential moving average.
SlowAvg = XAverage( Price, SlowLength ) ; // Value of Slow exponential moving average.
Value1 = ParabolicSAR( AfStep, AfLimit, oParCl, oParOp, oPosition, oTransition ) ;
MyRSI = RSI( Price, Length ) ;
//Setstoploss(losstarget1); // Sets the stop loss on each trade to the value the function takes in.
Setprofittarget(Profittarget1); // Sets the profit target on each trade to the value the function takes in.

// Calculation of conditions for drafting the trigger, setup and filter rules.

// Checks if the RSI is in OverSold, OverBought, Buying or Selling Zone
If MyRSI >= 0 and MyRSI < 30 then
	OverSold = True
Else
	OverSold = False;
```

```
If MyRSI >= 30 and MyRSI <50 then
	SellingZone = True
Else
	SellingZone = False;

If MyRSI >= 50 and MyRSI < 70 then
	BuyingZone = True
Else
	BuyingZone = False;

If MyRSI >= 70 and MyRSI <100 then
	OverBought = True
Else
	OverBought = False;


// Suspends trading under the following condition
// Filter Rule
If Time >= 2400 and Time <= 800 or (dayofweek(date) > 4 and Time > 1500) or Percentprofit < -5 then
	TradeOn = False
else
	TradeOn = true;

// If trading is suspended, then all the open positions are covered so the net marketposition = 0
If TradeOn = False then begin
	Sell next bar at Market;
	BuyToCover next bar at Market;
end;

// Checks to see if the Exponential Moving Average is in a Bullish or Bearish Trend.
// Trigger Rule
if FastAvg crosses over SlowAvg then
Begin
	EMA = 1 ;
```

```
	end;
if FastAvg crosses under SlowAvg then
Begin
	EMA = -1 ;
end ;

// Checks to see if the Relative Strength Index (RSI) indicates a Bullish or Bearish Trend.
// Setup Rule
if Currentbar > 1 and (BuyingZone or OverSold) then
Begin
	RS = 1 ;
	end;
if Currentbar > 1 and (SellingZone or OverBought) then
Begin
	RS = -1 ;
	end;

{ track the number of bars since the last crossover;  if oTransition is non-zero
then there is a crossover on the current bar, so set CrossBarsAgo to 0 when this
occurs, otherwise, increment CrossBarsAgo by 1 on every bar }
if oTransition <> 0 then
	CrossBarsAgo = 0
else
	CrossBarsAgo += 1 ;

{ Position Control criteria }
If TradeOn = True then begin
	if Marketposition = 0 then begin
		// If the there is no existing position in the market then it
		// checks for RSI and EMA in order to get into a trade.
		if RS = 1 and EMA = 1 then begin
			Alerting = true ;
			Buy ("Buy") next bar at market ;
			Alert( "Bullish reversal" ) ;
```

```
            end

            else if RS = -1 and EMA = -1 and TradeOn then begin
                        Alerting = true ;
                        Sellshort ("Sell") next bar at market ;
                        Alert( "Bearish reversal" ) ;
            end;
      End
      // If current market position is long then it considers the Parabolic SAR to determine an exit.
      Else if Marketposition = 1 then begin
            if oPosition = 1 then begin           // Exit Rule - Parabolic SAR
                        Sell ("Sell to cover") next bar at oParOp stop;
            end;
      End
      // If current market position is short then it considers the Parabolic SAR to determine an exit.
      Else if Marketposition = -1 then begin
            if oPosition = -1 then begin          // Exit Rule - Parabolic SAR
                        Buytocover ("Buy to cover") next bar at oParOp stop;
            end;
      End
      else
            Alerting = false ;
End;
```

Chapter 6: Results of Group's Automated System

Once all aspects of our automated trading system were fully developed in a methodical and scientific fashion, to generate a system that was believed to have the optimal rules and parameters to accomplish the objectives discussed previously, the final step prior to implementing the trading system in real-time is to determine the projected results of our system. Utilizing historical data from the past year, we were able to generate a projected performance report for the now fully developed system. The results proved promising because not only was the initial goal of generating a profit of 10 percent annually met, but we were able to exceed that mark by a remarkable 5.55 percent. Over the course of this past year, our system was able to generate an astounding gross profit of $88,166.80, with a net profit totaling $15,553.40, or 15.55 percent of our total initial capital ($100,000). (See performance report below)

Utilizing the TradeStation function and the data gathered from the performance report, we were able to generate our projected equity curve had our system been running for the past year.

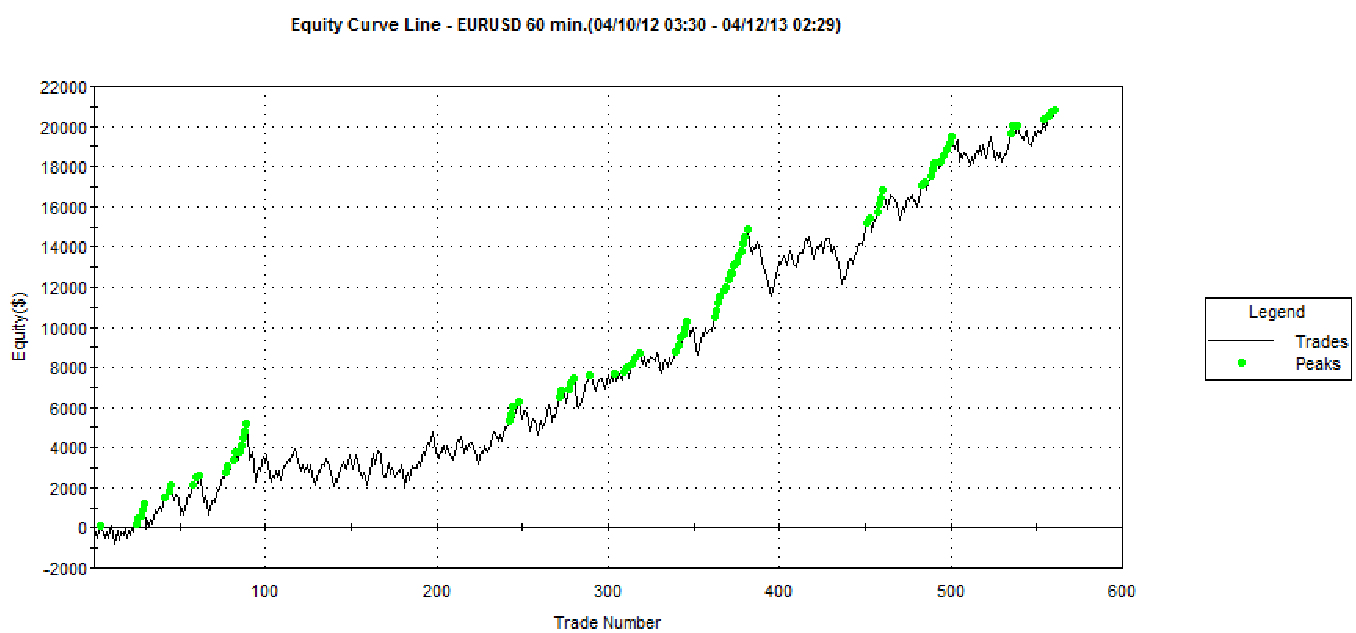

Figure 66: Equity Curve for Group Trading System

As you can clearly see, our system started off excellent throughout the first 50 trades made. However, our profit margin remained stagnant, and then slowly dwindled down throughout the course of the next hundred, or so, trades made. Although, our system made a quick turn around after this short down-period, steadily increasing profits till about trade 430 when our net profit hit its peak at well over $21,000, or 21 percent of our initial capital ($100,00). Unfortunately, our system hit rough patch following our maximum peak profit with a sharp decline, exceeding $6,000 in losses, over the course of the past few months. Despite this recent substantial decline in net profit, we remain confident in our system because it still was able to exceed our original expectations and goals for profit generated. With this data we have gathered verifying the success of our system over an extended duration of time, we have now generated enough confidence in our system to implement it in real-time.

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$15,553.40	$8,577.50	$6,975.90
Gross Profit	$88,166.80	$43,704.20	$44,462.60
Gross Loss	($72,613.40)	($35,126.70)	($37,486.70)
Profit Factor	1.21	1.24	1.19
Roll Over Credit	($127.60)	($225.50)	$97.90
Open Position P/L	($1,307.00)	($1,307.00)	$0.00
Select Total Net Profit	$20,845.10	$10,862.20	$9,982.90
Select Gross Profit	$88,166.80	$43,704.20	$44,462.60
Select Gross Loss	($67,321.70)	($32,842.00)	($34,479.70)
Select Profit Factor	1.31	1.33	1.29
Adjusted Total Net Profit	$4,943.12	$1,191.84	($643.21)
Adjusted Gross Profit	$82,139.84	$39,498.76	$40,144.01
Adjusted Gross Loss	($77,196.72)	($38,306.92)	($40,787.22)
Adjusted Profit Factor	1.06	1.03	0.98
Total Number of Trades	465	230	235
Percent Profitable	46.02%	46.96%	45.11%
Winning Trades	214	108	106
Losing Trades	251	122	129
Even Trades	0	0	0
Avg. Trade Net Profit	$33.45	$37.29	$29.68
Avg. Winning Trade	$411.99	$404.67	$419.46
Avg. Losing Trade	($289.30)	($287.92)	($290.59)
Ratio Avg. Win:Avg. Loss	1.42	1.41	1.44
Largest Winning Trade	$692.30	$692.30	$548.50
Largest Losing Trade	($1,282.00)	($1,282.00)	($1,027.00)
Largest Winner as % of Gross Profit	0.79%	1.58%	1.23%
Largest Loser as % of Gross Loss	1.77%	3.65%	2.74%

Figure 67: Performance Summary Report

Chapter 7: Conclusion

Throughout the duration of this project, each member of our group gained competency around a wide array of topics related to trading. The primary focus of our group pertained to how to trade in the Forex market. Due to the lack of background knowledge and experience in this marketplace, the initial focus of each individual group member was to grow accustomed to the Forex market through extensive research and understanding many of the terms and technical aspects associated with this marketplace. This thorough research into all aspects of the Forex market, coupled with the immense experience and knowledge of the trading possessed and shared to us by our advisors, allowed our group to develop a strong theoretical background into trading and the Forex market throughout the early portion of this project. Additionally, each student received a Wall Street Journal account in order to say up-to-date with all the news around the world relevant to various country's currencies we intend to trade. Each week we would read a plethora of relevant articles, and select two that we believe would impact our own method of trading most heavily (can be seen in the appendix). In doing so, we were able to not only retain a wealth of knowledge about current world news, but also how to effectively analyze and interpret an article's perceived impact on the market. Through utilization of this analysis, we were able to derive strategies and tactics to effectively exploit this information, and ultimately increase our profit margins.

Figure 68: Stay Updated with Wall Street Journal

Once we had gained the knowledge and insight necessary to attain a solid grasp on the majority of concepts associated with trading in the Forex market, the next aspect we learned was how to navigate our trading platform of choice, TradeStation. Utilizing a simulated account with funds of $100,000 per group member, we spent several months becoming acquainted with all the ins-and-outs of the TradeStation platform. Over this duration of time we became accustomed to a wide variety of TradeStation functions, and how to best exploit these functions and capabilities to our personal advantage when trading. Some of the TradeStation functions we gained expertise in include; optimization of indicators, analysis techniques, strategy implementation, back-testing of strategies, walk-forward analysis, coding in EasyLanguage, initiating trades, initiating trades with various order types, stop-losses, and many more.

Figure 69: Setting Stop loss is vital for System Performance

Mastering how to effectively utilize EasyLanguage to code and test various strategies was likely the most essential aspect to our group achieving future success. Gaining competency and becoming comfortable with coding in EasyLanguage on the TradeStation platform enabled our group to fully comprehend all of the built-in indicators, analysis techniques, and strategies that TradeStation has to offer. Once we retained this knowledge, we were then able to manipulate and combine these preset indicators and strategies to our preference, thus generating a system of our own that we could back-test to generate a performance report over a period of time. We were then able to analyze the data we had gathered from this performance report to determine the successful aspects of our system, as well as facets of our strategy that must be altered to achieve a heightened level of success. Retaining this knowledge enabled each individual within our group to further hone their newfound EasyLanguage skills, and ability to effectively utilize the abundance of functions TradeStation has to offer, throughout the duration of this project. Ultimately, we were able to refine our skills to the best of our abilities, and then proceed to code and tailor a final optimal automated trading system to accomplish the objectives previously put in place. Despite entering this project with collectively little prior knowledge about trading and the Forex market, each individual evolved a tremendous amount over the course of this project to become a competent trader with a strong theoretical background to trading. Although there is still much room for improvement in various aspects of our trading abilities, we believe that the profits generated by the automated trading system our group has developed speak greatly to the massive strives we have made, and amount each of us have grown, as traders throughout the duration of this project.

Chapter 8: Recommendations

As a whole, our group considers this project as a whole to be a great success, due to the wealth of knowledge and insight gained during the course of this project, which we intend to emulate in the future when we generate sufficient funds of our own. Additionally, although we are still in the beginning stages of becoming successful traders, the performance results generated by our group, and individual, trading systems are promising as we continue to evolve as traders. Despite considering this project a success as a whole, our group still believes that there is room for improvements to be made in this project to further the benefits offered and knowledge gained.

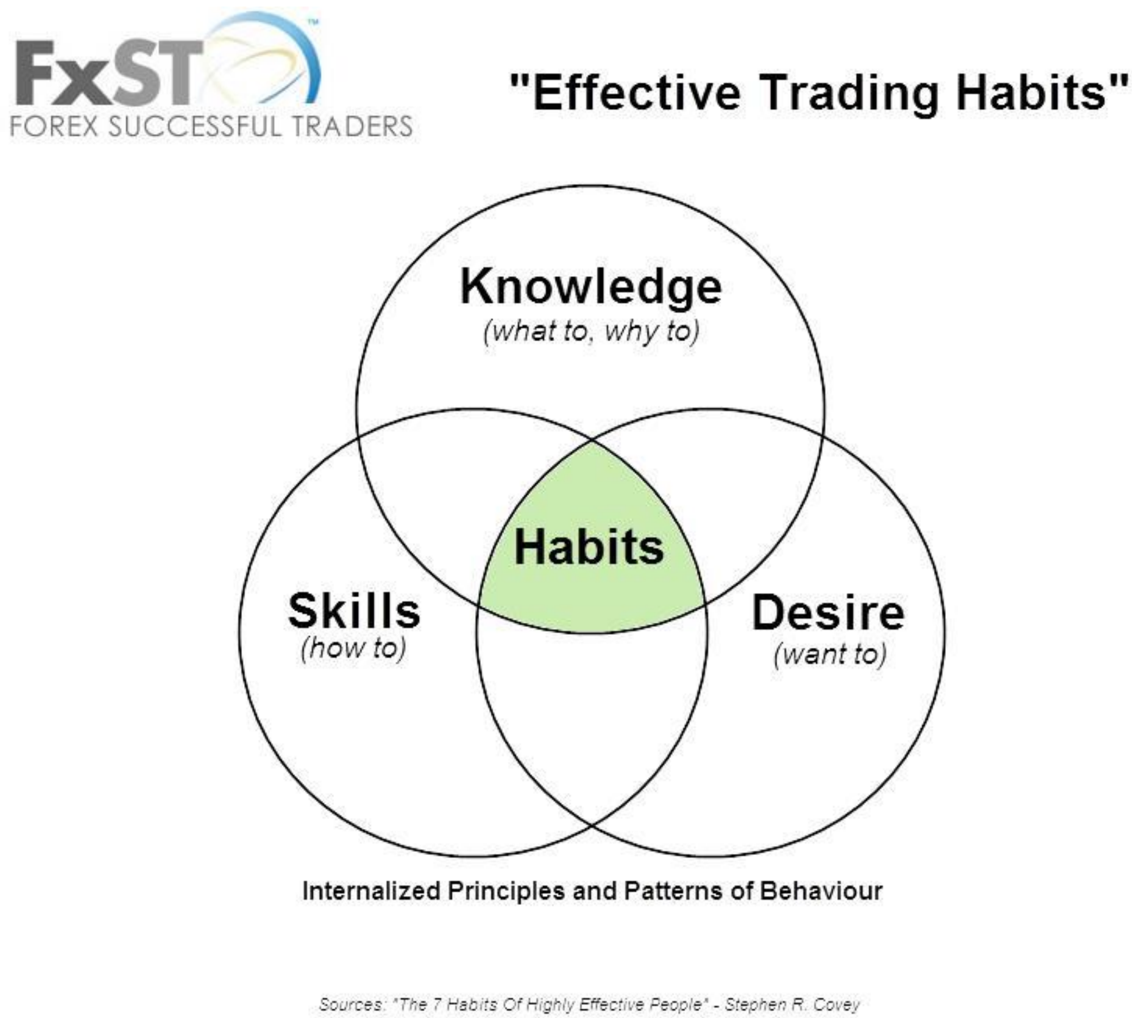

Figure 70: Secret of a Successful Trader

First and foremost, this project can be improved by offering alternative options for the trading platform being offered. Although TradeStation offers a wide array of tremendously useful functions, it may be difficult for most beginning traders to become accustomed with in the short period of time we have. This difficulty arises from the complexity of the TradeStation platform making it difficult to navigate initially, due to the multitude of functions it has to offer. However, potentially the most challenging aspect of TradeStation for new traders to overcome is the EasyLanguage coding apparatus. Although EasyLanguage is simple once an individual has taken the massive quantities of time required to master this form of coding, it is vastly different from the forms of coding many individuals have grown accustomed to, such as coding in “C”. Therefore, offering a wider variety of trading platforms to choose from, such as MetaTrader which codes in “C”, will help quell these initial difficulties felt by most individuals who are not familiar with this new language. Utilizing these alternative platforms will allow someone who is already proficient at coding in a different language to increase their productivity, due to the time saved not learning this new coding language. Additionally, offering an alternative trading platform, such as MetaTrader, may be more applicable to our personal trading endeavors in the future. This is due to the fact that the initial capital needed to open an account on TradeStation, at least $10,000, is far greater then MetaTrader for instance, which only requires initial funds exceeding $50 to open an account. Although someday we aspire to have several thousand dollars we are willing to trade with, attaining this egregious amount of start-up capital is not plausible for a new entrant into the workforce, particularly with the loans and bills most students must pay. Therefore, becoming acquainted with a trading platform that requires a minimal amount of initial capital, during this project will likely prove more beneficial in the future.

A second aspect our group believes could be improved further is the large-group meetings that were held every Thursday. Although we believe that in the early portion of this project these group meeting were extremely crucial to attaining sufficient knowledge of trading and developing a strong theoretical background, as we progressed towards the latter half of this project these meetings became increasingly less beneficial to all parties involved. Rather than being lectured about current world news that we had been reading on our own, we believe this time could be better spent collaborating. For instance; if a portion of this time was allocated to groups conversing with one another about their ideas, successes, and failures, we believe it would be more beneficial to all parties involved, and further enhance each group’s system.

However, we still consider the analytical, research, and presentation skills generated by the in-class weekly presentations a vital component to this project.

Additionally, we believe that these large-group sessions could be improved further if the amount of insight gained could come from a more diverse array of perspectives. Although that is not to say that the insight and experience shared by the advisors is not extraordinarily beneficial, because it has been incredibly useful. However, our group thinks that this valuable insight offered from years of experience could be heightened further if more guest speakers could be incorporated into these meetings. This idea was generated due to the tremendous benefit, and intriguing bits of insight, offered by the two guest speakers we've previously welcomed. Additionally, although it may not be feasible, a trip to an investment firm to witness and discuss with professional traders in their element would profoundly enhance our trading knowledge.

Another suggestion derived by our group, and was discussed early on in this project, would be to meet as a whole to trade during sessions we would not typically trade otherwise. For instance; it would be a fascinating experience for all groups to congregate in one classroom after midnight to trade during the London session. Not only would be a fun and exciting experience for all parties involved, but it would also be remarkably helpful as well. This activity will allow each member of the project to experience trading in a session that they are not accustomed to, and potentially exploit patterns that are not seen during standard US trading hours. Additionally, the opportunity to have the wealth of experience possessed by each advisor, coupled with the varying perspectives and ideas offered by each individual project member, would be a wonderful opportunity to cultivate and share trading knowledge that could be implemented in real-time.

The final suggestion our group has to offer to heighten the success of this project is to incorporate the simulated trading aspect earlier in the project. Experience is such a vital component to becoming a profitable trader, thus our group concluded that it would be most beneficial to capitalize on the time available by offering the simulated trading platform as early as possible. This increased amount of time will allow each individual to become familiar with the TradeStation platform early-on, and theoretically will limit the errors made in the latter half of this project when profits become monitored. Furthermore, the greatest strives our group has made have been in the last few months of the project when we had all become well acquainted with trading and the TradeStation platform. Consequently, we speculate that the final automated system we have developed could be further enhanced, and generate augmented profit, if we had retained our current know-how at an earlier point in this project.

Despite the numerous recommendations offered, our group still believes that this project as a whole can be considered a great success. Furthermore, each individual within our group has expressed a tremendous amount of enthusiasm towards trading with this newfound knowledge generated from this project, and intend to emulate the knowledge and insight gained in their future endeavors.

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Appendix A: News Discussions

Most of the articles presented here are discussions on news clips from famous business news and market analysis papers like The Wall Street Journal, Bloomberg, etc.

Nick's Weekly News Discussions

January 16, 2013

The first article I found much interest in was "Is the Fed Doing Enough -- or Too Much -- to Aid Recovery?" by Derby and Peterson. The reason I was so intrigued by this particular article is because of the immense amount of indecision surrounding the Fed's new unconventional monetary policy. However, after reading the arguments presented by several economists, I am concerned about the lasting effects of this policy. I read this article after reading "Draghi Needs New Bag of Tricks for 2013", and although I believe we are in a better position economically than most of the euro-zone, I think the fact that their primary focus is on inflation rates, and not additionally unemployment like the US, is more logical. Historically, unemployment and inflation rates tend to have an inverse relationship, that being said, I am concerned that these policies may have an initial minor positive impact on unemployment but that potential benefit far outweighs the potential future risks incurred. I may be incorrect, but if I recall one of the major reasons for the "Great Recession" was the incredibly low interest rates set by the Fed in a frail attempt to stimulate the economy. With that in mind, coupled with potential fear of future inflation and the greenback's questionable future status as the world reserve currency, I think the long-term risks of these moves far outweigh the potential short-term benefits it provides. However, I believe that I personally could utilize this information in my current and future trading strategies by longing the US dollar against another major currency pair, most likely the euro. Then as the goal of 6.5% unemployment creeps nearer, incorporate our "big hitter" trading strategy (using stop-losses and sell to cover until it shoots one direction and kick out the opposite leg of the trend) to try and capitalize on how the government plans to deal with the potential repercussions of this monetary policy.

The second article that stirred my interest was “Payroll Taxes Take a New Bite” by Serena NG. I was particularly interested in this article because I cited it in one of the many arguments my incredibly democratic friend and I had about the impact of taxes. The article discusses how in quarreling with the fiscal cliff the government has allowed social security taxes to rise to 6.2%, meaning each working American realizes 2% less money in his pocket each paycheck. This can’t happen and also hope to stimulate the economy at the same time, because this cutback in spending cash will reduce aggregate demand and cause the average working American to become more frugal. And, although not discussed in this article, the increase of taxes on American’s making 400k+, who tend to be the employers, also makes them become more frugal in hiring additional personal. Therefore, hurting reduce the rate of unemployment, and making those employed personal cut back on non-essential spending, ultimately creating more unemployment because those businesses will have less operating cash flow. Personally, I think the most efficient way to reduce unemployment while still generating government revenue and not hurting the economy, would be to incorporate some Rega-nomics and reduce the “entitlements” Obama deems necessary and cut taxes on all classes. Thus, allowing for those top one or two percent-ers to hire more employees who then would have to save less due to the tax cut, allowing them to purchase more, increasing aggregate demand and stimulate the economy. At the same time, these tax cuts would still generate substantial tax revenue because, although the rate is lower, the amount of people with taxable income and their average income would increase. Like a previous WSJ article I had read said; “it’s about creating more for those million or billionaires to tax, not just taxing the existing ones more.”

January 23, 2013

The first article that I took interest in was the WSJ article; “US Debt Ceiling Could Mean a Swiss Miss” by Bernard and Cignarella, January 18th. This article discusses how the euro has seen somewhat of a substantial rise vs. the Swiss Franc since the start of the 2013 year, rising from about 1.21 to nearly 1.25 by the 17th. However, this is potentially misleading as this sudden rise is not expected to continue in the near future. A major cause of this skepticism towards the Euro’s sudden rise is due to the clashes arising between the Speaker of the House and the President of the US over the debt. Historical data of a previous quarrel between the two, from 2011, pushed the euro to a record low. Economists also predict that this stalemate might lower the US GDP by as much as 6 percent, which in turn would continue to hurt Europe’s struggling economy. This information is pertinent to my trading because the Swiss Franc is one of my major currencies of trade. Therefore, this news is crucial to monitor as I have been longing the USD, occasionally the Euro, against the Franc, which several days ago proved to be very profitable for me. However, both those pairs have been far too volatile as of late for me to comfortably trade so I have stayed out of the market with that pair. I will continue to watch this closely as this current volatility could just be the down time before a big swing in the opposite direction, much like the article has predicted. The information presented in this article could also be useful for my “big-hitter” strategy, as I could hedge my bets both directions on the day that information about Obama meeting with the House comes out, to try and take advantage by longing the CHF if they still are arguing and shorting it if they have come to an agreement.

The next article that gained my interest was the WSJ article; “Investors Look for Carry in Emerging-Market Currencies” by Natarajan, January 18th. This article discusses how the depreciation of “safe-haven” currencies like the Franc and Yen, coupled with the monetary easing of the US and Japan, is leading investors to look for high-yield in emerging currencies, such as the Mexican peso and Russian ruble. I was first drawn to this article because of its mentioning of the Swiss Franc, however I become more enthused while reading the article about the potential new markets. I typically, in all aspects of life, try to find a different way to approach things that most people have not thought of yet. This quality has made me thoroughly interested in the potential of these new markets, and with the current problems facing several standard or “safe-haven” currencies I believe investors will begin to start flooding these new markets. This could potentially be exploited by our trend trading “big-hitter” scheme if more and more investors attempt to draw up the price of these currencies, which could possibly create a quick large swing, due to the little amount they’re currently traded. We might be able to take advantage of these swings, and then utilize the “safe-haven” currencies in our position sizing strategy for many small-margin winning trades.

January 27, 2013

The first article that I took interest in was a relatively short WSJ article entitled; “SNB Says Swiss Franc Still Too Strong Despite Easing Versus Euro”, January 24th. This article drew my interest, because as we have previously discussed, my currency of expertise is the Swiss

Franc. The reason I chose the Swiss Franc as my currency of choice is because of the easing against the Euro and other major currencies that the Swiss National Bank(SNB) has tried to implement to reduce the growing risks of recession and deflation. However, as the article discusses, so far they have not been as successful in easing as they had hoped, with the real estate market still being far too high for the SNB's liking. This is valuable information for me and my trading strategy because it could signal a drastic measure being taken by the SNB to ease the Swiss Franc further. I will continue to heavily monitor this situation, as this could be an opportunity to utilize our "big-hitter" strategy the next time Mr. Danthine makes an announcement. I will follow this closely as I believe, from Mr. Danthine's lack of comment, that the SNB intends to sell of its euro-denominated currency reserves once the France is sufficiently eased enough versus the euro. Which, if that occurs, I could utilize in a key reversal strategy against the Swiss Franc as they begin to sell those reserves.

The next article that stirred my interest dealt with the euro-zone debt crisis, and is entitled; "Europe's Banks Repay Debt Early" by Blackstone and Enrich, January 26th. This article caught my interest because, although it is not my currency of expertise, it pertains to my trading strategy heavily. The article goes in depth about how many banks are repaying the cheap loans they barrow from the ECB a year ago, giving the ECB back $182.2 billion on January 30th. Much like what happened to the US several years ago; this is a sign of confidence for the financial markets of that region returning to health. I could utilize this information for my trading strategy well in cooperation with what I have learned from the article I previously discussed. The previous article discussed gave me incentive to short the Swiss Franc against the Euro, and with this information about the growing strength of the Euro and its potential return to power, it only furthers my intent to continue to short the Franc against the Euro. Furthermore, since there is a set date in which the ECB will be receiving all this money, January 30th, I plan to enter the market on that day in the hopes to utilize my "big-hitter" strategy because it is likely that there will be a big swing in either direction, and as of now it appears that that direction will be in favor of the Euro.

February 3, 2013

The first article that captured my interest was the WSJ article entitled, "SNB's Swiss Euro, Dollar Reserves Steady" by Neil Maclucas, January 31st. I found this article when scrounging for recent news about my currency pair of choice, the Swiss Franc. Unfortunately, there has been little in terms of recent news for the Swiss Franc, as not much has changed since the earlier big announcement of their efforts to lower the value of the Franc against the Euro. The article discusses how the Swiss National Bank's(SNB) currency reserves have remained essentially unchanged for all currencies in 2013. This information might suggest that the SNB was not actively purchasing euros in an effort to defend their 1.20 floor against the euro. This information just justifies my reasons for not trading the Swiss Franc recently, as it has been somewhat volatile against the euro and stagnant against the Dollar since its big move several weeks ago, making me not comfortable trading it. However, I think there is something to watch closely here; as this lack of defense for the Franc, coupled with the growing strength of the Euro and the SNB's reserves being almost 50% in Euros, may lead me to believe the SNB might try and take drastic measures to quickly lower the Francs value when the Euro is at one of its strongest points in order to quickly unload some of those reserves. I do not know if I can mentally handle the drawdowns while waiting for this big swing to occur, however if news about the SNB looking to sell its Euro bonds comes out then I would likely long the Euro against the Franc, and then potentially use a key reversal strategy as it begins to even back out. I might also use this information in a break-out strategy, since the SNB isn't actively trying to defend its floor this could mean that once the EUR/CHF approaches its past highs it might break through that ceiling. This would be a good opportunity to utilize my position-sizing strategy, where I go in with about $50,000 when my indicators assure me it is moving in the positive direction, then take out $10,000 incrementally as I make X amount of pips. Then as I approach this ceiling I would have only $10,000 left, in order to limit my risk of a reversal, and see if it breaks through or not. If this break-through occurs for one or two, likely two, straight bars then I will add the additional $40,000 to my position and repeat the process.

The second article I read that drew my interest was another WSJ article, entitled; "Euro Hits Fresh 14-Month High Against Dollar" by Ira Iosebashvili, February 1st. This articles goes in depth about how although the signs show an expanding economy for the US, the rate at which it is expanding is not fast enough to dampen the Fed's quantitative easing policies, driving down the value of the Dollar. While on the other hand, the Euro has shown good signs and risen to its highest point in over a year against the Dollar. However, the dollar has still fared well against other currencies, at its highest point in years against the Yen, and some market watchers warn that a reversal of the EUR/USD is in store, in the Dollar's favor. I might be able to utilize this information by longing the dollar against both the Yen and the Euro, in order to take advantage of Japan's aggressive easing to generate some profit to stay afloat during the potential down draw while waiting for this perceived big swing to occur in the Dollar's favor against the Euro.

Unfortunately the only news I have seen so far on my currency of expertise, the Swiss Franc, has been about the success of one of their largest exports, the Swatch, and how the SNB has not yet done enough to drive down the value of the Swiss Franc, resulting in significantly less revenue then was possible. However this did not do much to affect the actual Swiss Fran itself other than potentially signal more extensive easing of their currencies value in the near future to benefit its largest businesses. That is why for this week I chose to focus on another currency I have been profitable trading; the Japanese Yen. The specific article that grasped my interest is entitled;

February 10, 2013

"Japanese Minister Brakes Yen's Decline"

This article discusses how the Yen has strengthened recently following a mixed statement by Japan's finance minister pertaining to how comfortable their government is with this rapid plunge of the value of the Yen, down 15+% since the start of November. This statement caused the Yen to move much higher recently than it has the past several weeks. However, with the newly elected prime minister's economic plan this sudden rise is likely only temporary, as they plan to increase pressure on the Bank of Japan to further expand its bond buying program, thus flooding with Yen in the hopes to stimulate growth. This information could be vitally useful to my trading strategy that is predicated on reversals. The Bank of Japan may be allowing this sudden rise in the Yen's value to then quickly stage a turn-around and greatly reduce the value of its currency. I could've utilized this information to long it initially and be cautious around the daily highs, or ceilings, in case of a breakthrough. However, when looking at the past few days' history, I believe that the Yen's peak has already been hit and it is now on the decline. So therefore I can utilize this information by looking back several days and seeing the low, or floor, prior to its positive last few days and try to use a short-heavy strategy as it approaches those lows. Then, I would stay in the market with limited position sizing, 10,000, in order to see if it gives support and increase my position and long it, or if it will break through and then reallocate more money to my position and hope to ride it down.

The second article that I read that had me thoroughly interested was about the big news reported by the ECB and Draghi, entitled; "Euro Sinks On Draghi Comments" by Nicole Hong, February 7th. This article discusses the concerns felt by the ECB that the Euro is appreciating too much and too fast for the liking of the euro-zone economy, however interest rates remained at 0.75%. This unchanged rate, some analysts say, could pose a potential problem and may have to be cut down if this sudden rise in value means a turn for the worse for the euro-zone economy. This is news that I will be monitoring closely as the year progresses, because a rate-cut could drive down the value of the Euro even more than they are currently trying to, which I could utilize short-heavy day-trading system against the currency of an import-heavy country such as the US dollar. Also, I believe that this potential easing of the Euro could have a large impact on my currency of expertise, the Swiss Franc, as 49% of their currency reserves are in the Euro. That being said, the goal of the SNB was to ease the Franc against the Euro to increase exports and strengthen their reserves, but with the Euro also being eased, the SNB might have to take drastic measures to achieve their goal. If this is the case, I will closely watch for any announcements the SNB makes, as well as potentially long another more-stable and import-heavy country's currency, potentially the USD, against the Swiss Franc. Depending on how quickly the SNB moves to fix the problem their facing, I will likely hold my long position for the USD for an extended period of time.

February 18, 2013

When researching new information about my currency of expertise, the Swiss Franc, I became interested in a WSJ article entitled; "SNB's Zero-Rate Wonderland" by Richard Barley, page C10, February 13th. This article discusses the dilemma facing the Swiss National Bank (SNB); how to deal with the growing issues posed by the housing market being at risk of a bubble, while not raising interest rates. The concern if the interest rate rises is that it may potentially derail the Swiss economy, and cause the Franc to appreciate further, which in-turn would also hurt the Swiss economy and require continued intervention from the SNB, which would not be ideal. The way the SNB is attempting to rectify this issue is through raising the capital requirements banks must hold against mortgages, in the hopes to rein in the housing market which has gotten progressively worse each year this past decade. Although this news might not generate any immediate shift in either direction for the Swiss Franc in the currency market, it is still a vital piece of information to monitor closely as we proceed. This information could become very helpful for my trading strategy in several weeks or so, once the SNB is able to see results from their efforts to quell the growing concern surrounding the housing market. Depending on whether these efforts work or not, it could signal a future move needing to be made by the SNB. For instance, if this intervention does not help the housing market like they had hoped, they might eventually be forced to raise interest rates. And if the SNB is forced to raise interest rates, it would result in an appreciation of the Franc, which would mean that I would hold a long position in favor of the Franc for likely several days at a time. I also anticipate the SNB trying to do everything in their power to ease the Franc over the next several months, as a precaution in case they are indeed forced to raise interest rates in the near future. I would utilize this information by possibly shorting the Franc in the near future, while closely monitoring information resources, such as ForexFactory.com, to see when any data comes out on the success or failure of this newly implemented system.

The second article I read that drew my interest was a WSJ about the recent news surrounding the Japanese Yen entitled; “Yen Weakens After Japan Avoids Direct Criticism at G-20 Meeting” by Alexander Martin, February 18th. This article discussed the recent big news surrounding the Yen, after the Japanese finance minister Taro Aso met with the G-20, a group of 20 industrial and developing nations, and seemingly successfully quelled the criticism directed at Japan for their excessive monetary policy causing a weaker Yen and talks of a currency war. However, Aso assured that this substantial weakening of the Yen was not the objective of their policy, and the Bank of Japan has set a new inflation target at 2%. After Japan “dodged a bullet”, so to speak, from this much anticipated meeting with the G-20, many experts anticipate the Yen to near its 33-month high of 94.46 against the Dollar in the short-term. This is excellent information for me to utilize in my trading strategy because it would make me inclined to long the USD against the Yen for the day or until it reaches near that past high of about 94.5, which I am currently doing, longing the USD with a current position size of 20,000 which may increase if I notice a significant trend begin to develop. I must monitor this closely as I approach this high as it likely could become a ceiling. At that point, I would reduce my position size as much as possible to limit my risk as I near that number, and then potentially utilize a key reversal strategy to long the Yen with a large position size against the Dollar for a relatively short duration.

February 24, 2013

Due to a lack of significant news surrounding my currency of expertise, the Swiss Franc, I searched for news relating to one of the other major currencies I tend to trade against the Franc. The first article that I read that drew my interest was a WSJ article entitled; "Dollar Surges On Fed Minutes" by Matthew Walter, February 20th. This article goes into depth about the positive impact towards the dollar due to the minutes from the recent Fed's meeting. These minutes suggested that the US Central Bank might ease up on their bond-buying program earlier than anticipated. This aggressive bond-buying was in an effort to stimulate the economy by keeping interest rates low by pumping dollars into the economy. The recent news about the slowing down of bond-buying by the USCB could suggest an appreciation of the value of the dollar, which was seen shortly after the meeting's minutes were released. This could be useful for my trading strategy in the short term, utilizing this information to long the dollar and take advantage of the anticipated, potentially only for the short-term, rise in the value of the dollar. However, due to the continued division of the Fed's policy makers over the costs and benefits of the bond-buying program, some analysts believe that this rise of the dollar will only be short-lived. This is another piece of useful information for me to utilize in my trading strategy, as I will monitor the anticipated early rise of the dollar closely, and create a manual ceiling based off past data's highs in order to limit my position size to see if this division does indeed cause the dollar's rise to be only temporary. The last useful bit of information that I discovered when reading this article is the rapid recent decline of the British Pound, which is likely a result of the recent Bank of England's meeting where three of policy-makers were in favor of expanding their bond-buying program. This information could potentially be useful for my strategy of longing the dollar in the short-run, as the struggling state of the pound will only increase my confidence to long to dollar and potentially raise my anticipated ceiling/floor.

The second article I took interest in was a WSJ article about the recent economic boom in Japan, entitled; "Japan Earnings Boosted by Yen, Stocks" by Hiroyuki Kachi, February 24th. This article discusses the positive economic impact felt by most Japanese companies, particularly export-heavy companies, as a result of the Bank of Japan's recent aggressive easing of the value of the Yen. Although this article is likely more useful in a stock-trading strategy, as oppose to a currency-trading strategy, I believe this information can be analyzed in order to gain helpful information about the upcoming performance of the Yen. This information could be interpreted several ways; however the way I interpreted this information was as a potential sign for the Yen to continue to lose value. I believe this because the Bank of Japan now has data proving the success of their easing, by an expected 17% growth in business revenues for a full business year at this continued rate. This information could be used in order to short the Yen against a strengthening and import-heavy countries currency, such as the USD, and hold that position for an extended period of time (several days possibly although I hate going to sleep with a trade open). However, I also need to be weary and make sure I monitor my initial thought closely, as the G-20 might not approve of continued easing at this rate due to the negative impact it has on other export-heavy markets, such as the South Korean or German markets.

January 16, 2013

"Euro Recovers on Nowotny Comments"

The Euro recovered against the Dollar on Wednesday after ECB governing council member, Ewald Nowotny, played down worries concerning the euro's strength, while European stocks were weaker on global growth concerns ahead of U.S. bank earnings announcements. Ewald Nowotny said he didn't expect to see a long-term upward trend in the euro's exchange rate, adding that the ECB doesn't have a target exchange rate for the euro. According to Ken Wattret, co-head of EMEA market economics at BNP Paribas, ECB council member Nowotny played down the rise in the exchange rate which ties in with the point made by ECB President, Mr. Draghi in last week's news conference, that the euro in trade-weighted terms is broadly in line with its long-run average. Eurogroup head Jean-Claude Juncker had earlier suggested the euro's foreign-exchange rate was "dangerously high." By midmorning, European stocks were lower after the World Bank warned Tuesday that continued wrangling over the U.S. budget was restraining global economic growth.

"EU Tightens Rules on Credit Rating Firms"

The European Parliament approved new rules that will restrict credit-rating firms' freedom to change sovereign-debt ratings and will make the organizations more vulnerable to lawsuits. The new rules on sovereign debt will help prevent credit rating agencies interfering in the political agenda of the EU. At the heart of the new legislation are five changes: a push to discourage the automatic use of ratings by financial firms and EU institutions; efforts to relax the grip of the dominant ratings firms on the industry; restrictions on when ratings firms can change sovereign-bond ratings; a move to make it easier to bring lawsuits against firms for negligence; and an effort to prevent firms from rating bonds issued by companies that are significant shareholders. This is the third set of European regulations for rating firms since the financial crisis erupted. The firms came under fire after credit markets seized up in 2007, as complex credit products that were given top-notch triple-A ratings later caused large losses for many U.S. and European banks.

January 23, 2013

“Euro Dilemma as Crisis Abates”

Euro-zone policymakers face a nasty dilemma: the more they succeed in convincing investors that the worst of the euro-zone crisis is over and in bringing down borrowing costs in southern Europe, the more the euro could strengthen. And the more exporters struggle with a strong euro, the harder it will be for the euro zone to pull out of recession, create jobs and leave its debt crisis truly behind. From its lows last year, the euro has appreciated by more than 10% against the dollar and by 25% against the Japanese yen. It has also gained about 8% against the Chinese Yuan and British pound as investors flock back to the once-teetering bond markets of Spain and Italy. And there’s more to come, say some big-hitting banks. Goldman Sachs predicts that one euro will equal $1.40 in three months from a little over $1.33 now, while Morgan Stanley sees the exchange rate overshooting and says fair value based solely on what the currency can buy in Germany would be nearer $1.53. This comes at a bad time for the euro-zone economy, which is mired in its second recession in less than three years. A stronger currency could deprive the euro zone of its one saving grace: its export performance.

Additionally, reports of European economy contracting into the recession as the as the GDP of the 17 nation bloc fell to 0.1 percent in the third quarter 2012 as compared to the previous quarter. With debt concerns in the Greece deepening, the key economies of the region namely Germany and France were also experiencing a slowdown. Industrial production in Germany fell by 1.8 percent in the month of September as 0.5 percent fall in the previous month. French flash manufacturing PMI contracted at a slower pace in November at 44.7 as compared to 43.7 in the previous month. The services PMI also displayed a decline at 46.1 in November. German ZEW Economic Sentiment fell to -15.7 levels in the month of November as the debt concerns of the Euro regions weighed on the investor’s sentiments.

US Dollar Index

US Dollar Index (DX) declined by 0.2 percent in yesterday’s trading session. The currency had depreciated on the back of rise in risk appetite in the global market sentiments which led to decline in demand for the low yielding currency. Further, US equities also traded on a positive note which also exerted downside pressure on the Dollar Index. The currency touched an intra-day low of 79.79 and closed at 79.97 on Tuesday. However, sharp downside in the currency was cushioned as a result of unfavorable US existing homes sales data.

January 27, 2013

“Europe's Banks to Repay Aid Early”

Amidst the attempt to strengthen Euro, hundreds of European banks are rushing to repay cheap loans they borrowed from the European Central Bank a year ago, in a show of confidence that financial markets are returning to health three years into the region's debt crisis. The ECB will get back €137 billion ($182.2 billion) from 278 banks on Jan. 30, the first day that the three-year loans can be repaid—and nearly two years before they are due. Europe's banks continue to face a number of problems, ranging from perceived capital deficiencies to ailing economies. But Italy's economy minister called repayment of the three-year loans, known as the long-term refinancing operations, or LTROs, a good sign. "The LTRO was an emergency measure. Now (the repayment) is a sign that financial markets are more confident of getting access to liquidity in a normal market way," Vittorio Grilli said in an interview Friday. The euro hit a 10-month high against the U.S. dollar after the ECB published the loan-repayment data, which exceeded analyst expectations of banks repaying between €50 billion and €100 billion. At the time that the ECB launched the loan program, many European banks were locked out of normal funding markets because of a crisis of confidence sweeping the euro zone.

“Bond Havens Lose Out as Euro Zone Heals”

The fresh signs that the euro zone is healing from its sovereign-debt crisis sparked a broad selloff in safe-haven assets from U.S. Treasury bonds to German and U.K. government debt. The price decline pushed the U.S. benchmark 10-year note's yield on Friday to within striking distance of a nine-month peak set a few weeks ago, capping a losing week for bonds as investors plowed money into U.S. stocks. Bond traders now feel that the bond markets will need to go down globally. The benchmark 10-year note's price fell 30/32, pushing up the yield to 1.947%. The 30-year bond lost 1 23/32 in price, yielding 3.131%. The 10-year Treasury yield rose 0.103 percentage points for the week and approached 1.974% reached on Jan. 4, the highest level since April 2012. The yield, a key interest rate the U.S. pays to finance its budget deficit, has climbed from 1.76% at the end of last year as sentiment over the global economy brightened.

Fears over a break-up of the euro zone have pulled back in recent months, worries over a sharp slowdown in China have eased and investors may not confront the U.S. debt-ceiling battle for a few months. Friday, the optimism was aided by a gauge of business confidence in Germany that hit a multi-month high and larger-than-expected repayments from euro-zone banks for emergency loans offered from the European Central Bank a year ago.

February 3, 2013

"Euro Hits 14-Month High vs. Dollar"

The euro hit its highest level in 14 months against the dollar on Thursday, bolstered by economic data showing signs of a recovery in the region's largest economy. Unemployment in Germany unexpectedly declined in January from the previous month, suggesting that the worst of the euro zone's economic problems may be behind, although the region remains mired in recession. The bar-chart below shows that EUR rose to the height of 1.3711 which was last seen in October 2011 justifying the 14-month high. Investors turned to the U.S. nonfarm payrolls report, which they expected would give them a broad picture of the country's economic recovery and an indication on whether the Federal Reserve should start considering a rollback of the easy money policies that have buoyed markets—and weakened the dollar—for the past several years but the latest U.S. data has painted a mixed picture. While Thursday's Chicago PMI reading indicated a better-than-expected pickup in manufacturing, data released the day before showed the U.S. economy unexpectedly contracting in the fourth quarter. There's also some volatility in the market that has helped to revive the currency markets with the surge in the volume of trading for a number of currency pairs and as a result, the euro has been rising against most currencies (about 2.3% this year against dollar) as fears about the euro zone's debt crisis have abated. One of the currency's sharpest moves was versus the Swiss franc.

"Investors Await ECB as Euro Surges"

The Euro's direction in the coming week will be decided by whether the European Central Bank decides to respond to the currency's recent strength. For now, the currency traders will pay close attention to the ECB's monthly policy statement on the coming Thursday for any mention of the euro, which has jumped against the dollar and is has risen 2.3% since the start of the year. Investors have become increasingly optimistic about credit conditions in the euro zone, especially as the likelihood of catastrophic events like a Greek exit get priced out. However, there are still concerns that the euro's recent strength may cripple the euro zone's economic recovery. A more expensive euro makes European exports less attractive to overseas buyers, hurting their competitiveness. Several companies, including Europe's largest semiconductor maker, STMicroelectronics NV, have already warned that the strong euro poses a risk to their future earnings. The U.S. data calendar is light in the coming week. A reading of economic activity in the nonmanufacturing sector in January comes out Tuesday, while the December trade balance is released Friday. So it would be a fair assumption that the news from the Eurozone would be a controlling factor in deciding the movement of Euro against the dollar in the coming week.

February 10, 2013

“Euro Sinks on Draghi Comments”

According to this news, analysts feel that Mario Draghi's hinting that the ECB will have to provide more stimulus to the economy if the euro gets too strong led to negative outcomes for the currency. The euro dropped below $1.34 after the European Central Bank cited the currency's recent strength as a risk for the euro-zone economy. This is because although the easing of financial tensions has had positive effect on the currency but a rapid rise would hinder with Eurozone’s fragile recovery by making its exports less competitive abroad. ECB President Mario Draghi said the euro's recent appreciation was one factor weighing on inflation, adding that the euro exchange rate, while not a policy target for the ECB, is important for both growth and price stability. He also repeated that the ECB's monetary policy remains "accommodative." Mr. Draghi's news conference followed the ECB's monthly rate-setting meeting, where the central bank kept interest rates unchanged at 0.75%. Analysts now feel that the ECB may have to cut rates later this year if the euro-zone's economy takes a turn for the worse.

“Euro's Recovery Not Without Pain for Some “

This article is about the movement of Euro and how the current price of Euro has been supporting for some economies while at the same time overpriced for others. France and Germany disagree about the euro. French President François Hollande said this week the common currency is overvalued, and argues that its valuation can't be allowed to hang "on the mood of the markets." Germany responded to this statement by announcing that the euro isn't overpriced because at this price Germany's exports have been doing pretty good. According to analysts at some of the major financial institutions, calculations indicate that the fair value of Euro for Germany would be around \$1.53 while for France the same would be \$1.23.

So in comparison, German industry is protected by being positioned at the premium end of most of its markets, where there is less price sensitivity, and by the country's success over the last decade in reducing costs. In short, BMWs and Mercedes are less sensitive to price increases than Peugeots and Renaults. While, from the other side, French exporters are being assailed by lower-cost competitor i.e. the emerging economies, but more increasingly by countries in Southern Europe such as Spain that are cutting production costs. French companies have, over the last decade, cut profit margins in an effort to stay in the game, but have lost ground in the productivity stakes. "French industry has not succeeded, with some exceptions (luxury goods, aeronautics, nuclear, pharmaceuticals, and some food products), to move upmarket," Mr. Gallois concluded. It's not only for France that the rising euro is painful. For other economies in Europe, particularly those on the struggling fringes such as Spain and Greece, euro strength threatens to negate their efforts to make their economies more competitive.

February 18, 2013

"Euro-Zone Exports, Imports Weaken"

According to this news coverage, the Euro-zone exports and imports fell in December, as indicated by the official data that was released on Friday, underscoring the vulnerability of the bloc's manufacturing base to a rising euro and the poor state of consumer demand. According to the statistics reports by the European Union's official statistics agency, exports of goods from the 17 nations that use the euro fell 1.8% in December from November, after growth of 0.6% the previous month. The figures, which are adjusted to account for seasonal distortions, illustrate the difficulty euro-zone companies have had in selling their goods in other markets at a time when the global economy is sputtering. But the fact that exports fell less rapidly than imports in December means a further improvement to the euro zone's trade position overall, despite the worsening state of its economy. A stronger euro has complicated matters for the region's companies by making their exports more expensive. The common currency has risen steadily against the dollar since July last year, helped by a pledge from European Central Bank President Mario Draghi to do everything possible to keep the bloc together during its fiscal crisis. Evidence of falling euro-zone exports comes as finance ministers and central bankers from the Group of 20 industrial and developing nations meet in Moscow, where they are likely to discuss recent currency movements, including the strengthening euro and the weakening Japanese yen. Eurostat's figures on Friday also showed imports of goods to the euro zone fell 3.0% in December, illustrating the fragile state of domestic demand in the currency bloc. Households in many euro-zone countries have suffered falls in disposable income due to rising food and energy prices, and have refrained from spending heavily on consumer goods due to concerns over the economy.

“Europe Woes Deepen as Economies Contract “

According to this news report, the euro zone's economy shrank last quarter at the fastest pace since the height of the world recession in early 2009, as a worsening slump in Italy and other southern European countries infected the bloc's core economies of Germany and France. The 2.3% drop in euro-zone gross domestic product in the fourth quarter, at an annualized pace, suggests that Europe's economic and financial crisis is far from over. The region's deepening malaise challenges European authorities' insistence that fiscal austerity will lead to growth by boosting business confidence, as predicted by most economists. But, hopes for an economic revival in Europe may also prove as fleeting as they were last year. One year ago, the European Central Bank expected the bloc to recover in the course of 2012, only to see prospects worsen amid financial-market panic. The worse-than-expected fourth-quarter contraction underscores a central problem for the euro bloc as it enters the fourth year of its debt crisis. In financial markets and at the ECB, there is a prevailing confidence that the euro zone is poised to stabilize and return to growth later this year. Financial-market conditions have improved markedly since last summer, due in large part to the ECB's pledge to do "whatever it takes" to preserve the euro and ECB chief Mario Draghi’s commitment to better the Eurozone in lieu of the ongoing crisis.

February 24, 2013

“Euro Touches Six-Week Low as ECB Bank Repayments Miss Forecast”

According to this news report, the euro touched the lowest level against the dollar since the last ` weeks after the European Central Bank said institutions will repay less of Long-Term Refinancing Operation borrowing next week than economists forecast. The Euro trimmed gains versus the yen as the European Commission forecast the region’s economy will shrink for a second year in 2013. Japan's currency weakened amid a White House meeting between Prime Minister Shinzo Abe and President Barack Obama, who made no mention of the yen during remarks after the discussion. Mass joblessness is expected to increase in the European countries hardest hit by the crisis, with the average unemployment rate expected to reach 27% in Greece, 26.9% in Spain and 17.3% in Portugal. As these countries try to fix the situation of unemployment the first big test is likely to come in France, which the European commission expects will miss a pledge to bring its deficit under 3% of gross domestic product by the end of this year. The forecast sees the French deficit this year at 3.7% of GDP. EU Economics Commissioner Olli Rehn suggested France wouldn't need to adopt more cuts this year because its missed target was the result of weaker-than-expected growth, not poor budgeting by the government. Therefore as per this article, the Euro seems to be in a bad situation at this point and the EU has to work hard to get a hold of its situation by make appropriate budget and unemployment related decisions and to avoid a further upcoming crisis.

"Germany Powers Ahead of Euro-Zone Neighbors "

According to this news article, Germany's economy appears to be powering away from its struggling euro-zone neighbors as a pickup in global trade and favorable financing conditions boost optimism among manufacturing and construction companies. Germany's LFO business climate index rose for the fourth straight month to 107.4 in February from 104.3 in January, beating economist forecasts of 104.7 and bringing the closely watched index back to levels not seen since last spring. Economists are optimistic about the fact that while most other euro-zone countries are moaning under the burdens of reforms, austerity and recession, the German economy continues playing in a league of its own. Fresh economic forecasts from the European Union highlight the growing divergence among euro-zone countries. The European Commission said Friday that a "robust" labor market and brighter economic conditions will help Germany—the region's largest economy—bounce back to a growth rate of 2% in 2014 after growing by only 0.5% this year. Although this marks a mild slowdown from 0.7% growth in 2012, Germany's economy will still be outpacing most of its peers. By comparison, the Commission expects the euro zone to contract 0.3% this year owing to falling output in Spain, Italy, the Netherlands, Portugal, Cyprus, Greece and Slovenia. There are expectations that the decoupling of German industry from the rest of the euro zone, in particular from Italy and Spain, will continue this year as we benefit greatly from the 'made-in-Germany' brand recognition. So, in conclusion the euro climbed back after an index of German business confidence jumped in February, as manufacturers became more optimistic about potential export growth. The rise in the index signaled improving business conditions in the euro-zone's largest economy.

January 16, 2013

"Ugly Choices Loom Over Debt Clash"

As the nation approaches the debt ceiling, the government must begin to consider some drastic steps to manage its limited supply of cash. This includes possibly delaying trillions of dollars worth of payments to federal employees, Social Security recipients, contractors and many others. The President's administration currently does not have an official backup plan to pay the government's bills if Congress is unwilling to raise the federal borrowing limit. The Treasury may have to consider selling national assets such as gold or mortgage backed securities, cutting spending by forty percent or prioritizing some payments over others. Currently, the most viable proposal is to pay the government's bills only when tax revenue becomes available. The U.S was originally scheduled to reach the debt ceiling on December 31st, but the Treasury implemented short term measures to prevent the government from defaulting on its obligations. By not having a plan installed for when the debt ceiling is reached, the Obama administration is forcing Congress to raise the ceiling, otherwise the government failing to make payments could wreck havoc in the economy and financial markets.

"ObamaCare's Health-Insurance Sticker Shock"

Recently, health insurance premiums have been rising, and it appears that they will continue to rise throughout the year. Some wish to solely blame ObamaCare for these circumstances. The main aspects of ObamaCare include that health insurers accept everyone who applies, cannot charge more based on serious medical conditions and include several coverage mandates that force insurance to pay for numerous medical conditions that are often uncovered. Due to guaranteed acceptance, many people will wait to purchase insurance until they absolutely need it and will then drop it when they no longer require it. This will result in insurance pools that are smaller and sicker, and ultimately more expensive. States will not experience equal premium increases. States that limited mandate over the years will receive more intense increases. According to predictions, the average increase for individual premiums will be fifty percent. Although ObamaCare will not tae full effect until 2014, premium are already rising as insurers are adjusting premiums in anticipation.

January 23, 2013

“Three Chances for a Second-Term Legacy”

As President Obama’s second term begins, the question arises of what sort of legacy he will leave as the President of the United States. Most of his first term energy was spend on dealing with major economic issues. He will have three opportunities in his second term to establish a broader legacy. First, he has the possibility of achieving something close to energy self-sufficiency. The future potentially holds higher American oil production, improved fuel efficiency and greater use of alternative energies. Obama also has to complete an immigration overhaul. This most recent election showed how the changing face of the nation has made it a political imperative to reform the American immigration system. Although most parties are more likely to agree that some changes are needed, a great debate will still exist on whether or not an immigration bill should provide illegal immigrants already in the nation an opportunity towards citizenship. Finally, President Obama wants to close the gap of income inequality. Possibly the best way to accomplish this is through a broad overhaul of the American tax code, making it more efficient, yet more progressive at the same time. Obama will have difficulty solving all of these problems if he is unable to settle the debt ceiling and spending debates relatively soon.

“The Debt Ceiling is Scarier than the Fiscal Cliff”

Although Congress averting the fiscal cliff crisis was an important accomplishment, a worse fiscal obstacle is quickly approaching. In the United States, there is a law that sometimes contradicts the budget law, which is a limit on how much the government may borrow. If the debt limit exceeds the numbers projected by the budget, there are no consequences. If that is not the case, Congress has passed two conflicting laws, and the debt limit must be raised. In some cases, Republicans refuse to raise the ceiling. The government has actually already passed the legal ceiling, but the Treasury Secretary Tim Geithner is using multiple tricks and gimmicks to avoid chaos. These tricks will only be able to last into mid February according to estimates. At the government’s current rate of spending and taxation, federal receipts cover less than 74% of federal outlays. If the government collides with the debt ceiling at full speed, then total outlays will be forced to be immediately cut by at least 26%. That accounts for more than 6% of GDP, which is significantly more than the danger that the fiscal cliff imposed. It is quite unknown how the government could possibly cut that much spending in such a short period of time.

January 27, 2013

"EUR/USD Forecast – Jan 28-Feb 1"

The EUR/USD recently hit new highs as signs of improvement are beginning to show in the euro-zone. The growth of domestic currency in circulation weakened slightly in the euro-zone. Loans to the private sector also dropped 0.8% from last year, which is worse than the predicted .5%. The German consumer sentiment reading for the month of December showed a slight decline from 5.8 in November to 5.6, meaning German consumer sentiment is most likely to remain subdued during 2013. The reduction of German economic activity has significantly decreased consumer spending. Spain's GDP declined by .3% in the third quarter, making it the fourth contraction in a row. Spain will most likely be forced to request for a bailout, given economic conditions do not improve. Retail sales in the euro-zone dropped significantly in December, causing retailers to reduce their purchases of new stock. This is the worst year for the euro-zone since the creation of the retail PMI in 2004. Inflation in Germany increased in December by 0.9%, after a 0.1% increase in November. German unemployment only increased by 3,000 in December after being projected to be raised by 11,000. The EUR/USD began last week with a drop towards the 1.3255 line, but jumped back to the 1.34 line. By the end of the week, it broke to a new recent high of 1.3476 before retreating slightly.

"U.S. New-Home Sales Drop Blemishes Best Year Since 2009"

In December, the amount of new homes purchased in the U.S unexpectedly dropped. Ultimately, the drop is only a small hiccup as the industry produced its best year since 2009 and became a bright spot for the U.S economy. In 2012, builders sold 367,000 homes, which is the most in three years and the first annual increase in seven. The combined sales of new and previously own homes increased by 9.9 percent, which is the biggest annual gain since 1998. For the whole year of 2012, new home sales improved by 19.9 percent, which is the biggest jump since 1983 and the first gain since 2005. The largest U.S homebuilder by market value, Lennar's revenue rose 42 percent during the months of September, October and November compared to last year during that time. At the end of 2012, the median price of a new home in the U.S increased by 13.9% compared to the end of 2011. New homes accounted for only a total of 7.3 percent of the entire residential market in 2012, which is a decrease from the high of 15 percent during the boom of the past decade.

February 3, 2013

"EUR/USD Forecast – February 4-8"

During the most recent week, EUR/USD experienced another stretch of new highs. There is a general consensus in Europe that the worst is over regarding the debt crisis. With this new feeling, money is flowing through the euro-zone, increasing the euro's value. Although there is a sense of optimism, retail sales in Germany decreased slightly and the euro-zone is remaining in a recession. At the beginning of the week, EUR/USD was stuck at the 1.3580 line. It eventually broke past that line and reached 1.3588. By the end of the week, the pair rose above 1.37, before lowering to 1.3639 at the week's closing. As of right now, 1.40 is the key resistance line for EUR/USD. With the great flow of money into the euro-zone and new recent highs for the EUR/USD, it seems another solid week for the euro is ahead. It seems that the recent improvements in European financial markets is outweighing the ongoing recession. By looking at the EUR/USD daily chart, it appears that any uptrend resistance has been broken and the currency pair will most likely continue to climb.

"Fed Policy is a Drag on the Economy"

The economic recovery in the United States has been weaker than originally hoped for. According to projections, 2012 was supposed to being an economic growth of four percent, but only achieved two percent. The Fed's recent policies have resulted in disappointment. It continues to look for external causes for the lack of success, and ignores the possibility that the problem is its own policies. "The Fed's excursion into fiscal policy and credit allocation raises questions about its institutional independence and accountability. This reduces public confidence in the central bank" (John Taylor). The Fed's policies result in inconsistent money growth which creates macroeconomic instability. The Federal Open Market Committee argue for the benefits of the Fed's policy with macroeconomic models, but these models are an unreliable source for measuring the efficiency of the Fed's unconventional ways. If the Fed does not reconsider their or alter their policies, trust and confidence in the Fed may fall. This could certainly lead to the weakening the U.S dollar.

February 10, 2013

“EUR/USD Forecast February 11-15”

The EUR/USD declined last week compared to the rises of the prior two weeks. With the Eurozone’s current monetary policy, economic growth is expected in the second half of 2013, but the EUR/USD may stay in lower ranges as focus remains on the risk and concern of the Euro’s low value. On Monday, a meeting will be held among the finance ministers of the Eurozone members. The important topics that will be discussed include the ongoing recession, the European budget and the debt crisis. On Tuesday, the Economic and Financial Affairs Council is expected to meet as well. They have the responsibility of coordinating economic policy in the Eurozone. The pair began last week with a significant plummet, falling below the 1.3588 line. For most of the week, this line worked as a ceiling for the EUR/USD, while 1.3486 was a floor. The writer of this article, Yohay Elam, is “bearish on EUR/USD” this week. GDP releases this week are expected to be disappointing. Political worries in Italy and Spain will probably hold back the Euro’s strength. The United States is still in a “slow and steady/ frustrating recovery,” so the focus should remain on Europe’s issues.

“Currency's Recovery Isn't Without Pain”

There has been recent disagreement within the Eurozone regarding the value of the Euro. France commented on the currency, stating it is overvalued. Germany responded to this statement by declaring the euro to be not overpriced. From their own vantage points, both nations are correct. According to recent calculations by analysts at Morgan Stanley, the value for the Euro for Germany, if it was alone in the Eurozone, is $1.53. For France, the value stands at $1.23. This means that the Euro is relatively undervalued for the German economy, and overvalued for the French. French industrial companies are currently just unable to compete with the Eurozone’s powerhouse, Germany. French exporters are failing because lower-cost competitors are dominating the market. Other struggling economies in the Eurozone are feeling the same effects that France is. According to Brussels Beat, “the euro's strength has followed what appears to be the receding threat of a euro-zone breakup, thanks to pledges from the European Central Bank to stop speculative runs on the region's banks and governments.” Due to the recent monetary policy by the central banks of the U.S, U.K and Japan, the euro is now the “least ugly” currency.

February 18, 2013

“EUR/USD Forecast February 18-22”

The EUR/USD started last week on the rise above the 1.3350 line. It continued to rise throughout the first half of the week, and broke above 1.3486 before reversing and dropping down. For the remainder of the week, the pair remained below 1.34, but closer to 1.33. Yohay Elam claims to be remaining bearish on the EUR/USD. Recent GDP figures from Germany, France, Italy and throughout the Eurozone decreased drastically and were significantly below worst case expectations. These GDP facts are a good indicator that the economy is still suffering. The upcoming Italian elections are likely to hurt the Euro, as fears of a Berlusconi return will haunt the currency. There have not been any major updates in the United States in the past week. The decrease in unemployment and the increase in retail sales indicates the U.S economy is continuing to grow at a steady pace.

“The Best Time to Trade for Trend Traders”

In January, dailyfx.com did a study to determine when the best time of the day to trade is. According to the article, most day traders are considered “range traders.” Range traders are counter-trend traders. This study came to the conclusion that range traders have the best probability of success during the Asian session and morning European session. Jay Norris found that his trend trading method is also very successful during this time period. However, his trades with the best risk/reward ratio took place during the London morning session and through the U.S session. He also found that there are certain times of the year in which all sessions are good times for trend traders. The two best periods are early spring and early winter, times when market correlations are the strongest. Norris’ conclusion is that short-term trading should be focused on the Asian and London morning session, and larger trades should occur during the London and U.S overlap when the major currencies are aligning.

February 24, 2013

“EUR/USD Forecast Feb 25 – Mar 1”

The EUR/USD had a fairly negative week. The pair continually fell in a “head and shoulders” pattern throughout the week. Promising news recently came out of Germany, with a couple of economic reports rising above expectations, but the other struggling nations throughout the Eurozone are weighing the Euro down. On Monday, Italy, the Eurozone’s third largest economy, will be holding its parliamentary elections. The Eurozone unemployment rate is scheduled to be released on Friday. It is projected that the labor market will continue to struggle over the upcoming months. EUR/USD started the week trading below 1.34. After an unexpected and false climb, the currency pair began a great fall. It was unable to recover for the remainder of the week and was barely able to close above the lows, at 1.3191. The Italian elections have the potential to create a massive effect on the market, and could easily send the pair to 1.30. The economic status in the United States still is not considerably great, but is still experiencing a slow growth, unlike the Eurozone.

"By Any Measure, the Jobs Disaster Continues"

The current number of unemployed Americans, 12.3 million, is uncomfortably close to the Great Depression era number of 12.8 million. Although the U.S population has grown exponentially since the 1930s, 12 million people out of work is something to worry about. The currently unemployed and the unemployed from the Great Depression are viewed quite differently, mainly from the visibility of the aid they received. During the 1930s, the unfortunately unemployed were forced to stand in long public lines waiting for soup and bread, while today's unemployed are receiving government checks, unemployment checks, Social Security disability checks and food stamps. There are currently 48 million Americans taking part in the food-stamp program, which is a record and almost double the percent of the total population that was on it from 1970-2000. There is also a record amount of Americans receiving Social Security checks to compensate for disabilities. The labor-force participation rate is at its lowest level since 1981.

Appendix B: Performance Summary for Group Project

TradeStation Performance Summary for Group System

Table 4: TradeStation Performance Summary for the Group System

Total Net Profit	All Trades	Long Trades	Short Trades
Gross Profit	$13,126.10	$7,351.70	$5,774.40
Gross Loss	$94,238.10	$47,070.60	$47,167.50
Profit Factor	($81,112.00)	($39,718.90)	($41,393.10)
	1.16	1.19	1.14
Roll Over Credit			
Open Position P/L	($156.90)	($237.30)	$80.40
	($1,251.00)	($1,251.00)	$0.00
Select Total Net Profit			
Select Gross Profit	$18,508.00	$9,696.60	$8,811.40
Select Gross Loss	$94,238.10	$47,070.60	$47,167.50
Select Profit Factor	($75,730.10)	($37,374.00)	($38,356.10)
	1.24	1.26	1.23
Adjusted Total Net Profit			
Adjusted Gross Profit	$2,557.01	($55.46)	($1,766.31)
Adjusted Gross Loss	$88,596.21	$43,120.52	$43,137.71
Adjusted Profit Factor	($86,039.20)	($43,175.99)	($44,904.02)
	1.03	1	0.96
Total Number of Trades			
Percent Profitable	550	274	276
Winning Trades	50.73%	51.82%	49.64%
Losing Trades	279	142	137
Even Trades	271	132	139
	0	0	0
Avg. Trade Net Profit			
Avg. Winning Trade	$23.87	$26.83	$20.92
Avg. Losing Trade	$337.77	$331.48	$344.29
Ratio Avg. Win:Avg. Loss	($299.31)	($300.90)	($297.79)
Largest Winning Trade	1.13	1.1	1.16
Largest Losing Trade	$538.00	$407.00	$538.00
Largest Winner as % of Gross Profit	($1,292.00)	($1,292.00)	($1,037.00)

Largest Loser as % of Gross Loss	0.57%	0.86%	1.14%
	1.59%	3.25%	2.51%
Net Profit as % of Largest Loss			
Select Net Profit as % of Largest Loss	1015.95%	569.02%	556.84%
Adjusted Net Profit as % of Largest Loss	1432.51%	750.51%	849.70%
	197.91%	-4.29%	-170.33%
Max. Consecutive Winning Trades			
Max. Consecutive Losing Trades	8	8	7
Avg. Bars in Total Trades	9	5	11
Avg. Bars in Winning Trades	9.98	10.17	9.8
Avg. Bars in Losing Trades	8.27	8.58	7.94
Avg. Bars in Even Trades	11.75	11.87	11.63
	0	0	0
Max. Shares/Contracts Held			
Total Shares/Contracts Held	100000	100000	100000
Account Size Required	55100000	27500000	27600000
Total Slippage	$6,030.50	$3,534.60	$4,862.40
Total Commission	$0.00	$0.00	$0.00
	$5,500.00	$2,740.00	$2,760.00
Return on Initial Capital			
Annual Rate of Return	13.13%		
Buy & Hold Return	12.47%		
Return on Account	1.23%		
Avg. Monthly Return	217.66%		
Std. Deviation of Monthly Return	$912.58		
	$2,312.39		
Return Retracement Ratio			
RINA Index	1.12		
Sharpe Ratio	64.17		
K-Ratio	n/a		
	n/a		
Trading Period			
Percent of Time in the Market	11 Mths, 26 Dys, 3 Hrs		
Time in the Market	80.05%		
Longest Flat Period	9 Mths, 15 Dys, 2 Hrs, 7 Mins		
	2 Dys, 15 Hrs		
Max. Equity Run-up			

Date of Max. Equity Run-up	$19,773.10		
Max. Equity Run-up as % of Initial Capital	4/18/2013 0:30		
	19.77%		
Max. Drawdown (Intra-day Peak to Valley)			
Value			
Date	($7,389.20)	($3,953.40)	($5,090.40)
as % of Initial Capital	5/10/2013 1:30		
Net Profit as % of Drawdown	7.39%	3.95%	5.09%
Select Net Profit as % of Drawdown	177.64%	185.96%	113.44%
Adjusted Net Profit as % of Drawdown	250.47%	245.27%	173.10%
	34.60%	-1.40%	-34.70%
Max. Drawdown (Trade Close to Trade Close)			
Value			
Date	($6,030.50)	($3,534.60)	($4,862.40)
as % of Initial Capital	5/8/2013 12:30		
Net Profit as % of Drawdown	6.03%	3.53%	4.86%
Select Net Profit as % of Drawdown	217.66%	207.99%	118.76%
Adjusted Net Profit as % of Drawdown	306.91%	274.33%	181.22%
	42.40%	-1.57%	-36.33%
Max. Trade Drawdown			
	($1,669.00)	($1,669.00)	($1,486.80)
All Trades			
Total Net Profit			
Gross Profit	$13,126.10	Profit Factor	1.16
	$94,238.10	Gross Loss	($81,112.00)
Roll Over Credit			
Open Position Profit/Loss	($156.90)		
	($1,251.00)		
Select Total Net Profit			
Select Gross Profit	$18,508.00	Select Profit Factor	1.24
	$94,238.10	Select Gross Loss	($75,730.10)
Adjusted Total Net Profit			
Adjusted Gross Profit	$2,557.01	Adjusted Profit Factor	1.03

	$88,596.21	Adjusted Gross Loss	($86,039.20)
Total Number of Trades			
Winning Trades	550	Percent Profitable	50.73%
Even Trades	279	Losing Trades	271
	0		
Avg. Trade Net Profit			
Avg. Winning Trade	$23.87	Ratio Avg. Win:Avg. Loss	1.13
Largest Winning Trade	$337.77	Avg. Losing Trade	($299.31)
Largest Winner as % of Gross Profit	$538.00	Largest Losing Trade	($1,292.00)
	0.57%	Largest Loser as % of Gross Loss	1.59%
Net Profit as % of Largest Loss			
Slct. Net Profit as % of Largest Loss	1015.95%		
	1432.51%	Adj. Net Profit as % of Largest Loss	197.91%
Max. Consecutive Winning Trades			
Avg. Bars in Winning Trades	8	Max. Consecutive Losing Trades	9
Avg. Bars in Total Trades	8.27	Avg. Bars in Losing Trades	11.75
	9.98		
Max. Shares/Contracts Held			
Total Commission	100000	Account Size Required	$6,030.50
	$5,500.00	Total Slippage	$0.00
Return on Initial Capital			
Buy and Hold Return	13.13%	Annual Rate of Return	12.47%
Avg. Monthly Return	1.23%	Return on Account	217.66%
	$912.58	Std. Deviation of Monthly Return	$2,312.39
Return Retracement Ratio			
Sharpe Ratio	1.12	RINA Index	64.17
	n/a	K-Ratio	n/a
Trading Period			
Time in the Market	11 Mths, 26 Dys, 3 Hrs	Percent of Time in the Market	80.05%
	9 Mths, 15 Dys, 2 Hrs, 7 Mins	Longest Flat Period	2 Dys, 15 Hrs
Max. Equity Run-up			
Date of Max. E. Run-up	$19,773.10		
	4/18/2013 0:30	Max. E. Run-up as % of Initial Capital	19.77%
Max. Drawdown (Intra-day Peak to Valley)			

Value	Max. Drawdown (Trade Close to Trade Close)		
Date	($7,389.20)	Value	($6,030.50)
as % of Initial Capital	5/10/2013 1:30	Date	5/8/2013 12:30
Net Profit as % of Drawdown	7.39%	as % of Initial Capital	6.03%
Slct. Net Profit as % of Drawdown	177.64%	Net Profit as % of Drawdown	217.66%
Adj. Net Prof as % of Drawdown	250.47%	Slct. Net Profit as % of Drawdown	306.91%
	34.60%	Adj. Net Profit as % of Drawdown	42.40%
Max. Trade Drawdown			
	($1,669.00)		
Long Trades			
Total Net Profit			
Gross Profit	$7,351.70	Profit Factor	1.19
	$47,070.60	Gross Loss	($39,718.90)
Roll Over Credit			
Open Position Profit/Loss	($237.30)		
	($1,251.00)		
Select Total Net Profit			
Select Gross Profit	$9,696.60	Select Profit Factor	1.26
	$47,070.60	Select Gross Loss	($37,374.00)
Adjusted Total Net Profit			
Adjusted Gross Profit	($55.46)	Adjusted Profit Factor	1
	$43,120.52	Adjusted Gross Loss	($43,175.99)
Total Number of Trades			
Winning Trades	274	Percent Profitable	51.82%
Even Trades	142	Losing Trades	132
	0		
Avg. Trade Net Profit			
Avg. Winning Trade	$26.83	Ratio Avg. Win:Avg. Loss	1.1
Largest Winning Trade	$331.48	Avg. Losing Trade	($300.90)
Largest Winner as % of Gross Profit	$407.00	Largest Losing Trade	($1,292.00)
	0.86%	Largest Loser as % of Gross Loss	3.25%
Max. Consecutive Winning Trades			
Avg. Bars in Winning Trades	8	Max. Consecutive Losing Trades	5
Avg. Bars in Total Trades	8.58	Avg. Bars in Losing Trades	11.87
	10.17		

Max. Shares/Contracts Held			
Total Commission	100000	Account Size Required	$3,534.60
	$2,740.00	Total Slippage	$0.00
Net Profit as % of Largest Loss			
Slct. Net Profit as % of Largest Loss	569.02%		
	750.51%	Adj. Net Profit as % of Largest Loss	-4.29%
Max. Drawdown (Intra-day Peak to Valley)			
Value	Max. Drawdown (Trade Close to Trade Close)		
as % of Initial Capital	($3,953.40)	Value	($3,534.60)
Net Profit as % of Drawdown	3.95%	as % of Initial Capital	3.53%
Slct. Net Profit as % of Drawdown	185.96%	Net Profit as % of Drawdown	207.99%
Adj. Net Prof as % of Drawdown	245.27%	Slct. Net Profit as % of Drawdown	274.33%
	-1.40%	Adj. Net Profit as % of Drawdown	274.33%
Max. Trade Drawdown			
	($1,669.00)		
Short Trades			
Total Net Profit			
Gross Profit	$5,774.40	Profit Factor	1.14
	$47,167.50	Gross Loss	($41,393.10)
Roll Over Credit			
Open Position Profit/Loss	$80.40		
	$0.00		
Select Total Net Profit			
Select Gross Profit	$8,811.40	Select Profit Factor	1.23
	$47,167.50	Select Gross Loss	($38,356.10)
Adjusted Total Net Profit			
Adjusted Gross Profit	($1,766.31)	Adjusted Profit Factor	0.96
	$43,137.71	Adjusted Gross Loss	($44,904.02)
Total Number of Trades			
Winning Trades	276	Percent Profitable	49.64%
Even Trades	137	Losing Trades	139
	0		
Avg. Trade Net Proft			
Avg. Winning Trade	$20.92	Ratio Avg. Win:Avg. Loss	1.16
Largest Winning Trade	$344.29	Avg. Losing Trade	($297.79)
Largest Winner as % of Gross	$538.00	Largest Losing Trade	($1,037.00)

Profit			
	1.14%	Largest Loser as % of Gross Loss	3.25%
Max. Consecutive Winning Trades			
Avg. Bars in Winning Trades	7	Max. Consecutive Losing Trades	11
Avg. Bars in Total Trades	7.94	Avg. Bars in Losing Trades	11.63
	9.8		
Max. Shares/Contracts Held			
Total Slippage	100000	Account Size Required	$4,862.40
	$0.00	Total Commission	$2,760.00
Net Profit as % of Largest Loss			
Slct. Net Profit as % of Largest Loss	556.84%		
	849.70%	Adj. Net Profit as % of Largest Loss	-170.33%
Max. Drawdown (Intra-day Peak to Valley)			
Value	Max. Drawdown (Trade Close to Trade Close)		
as % of Initial Capital	($5,090.40)	Value	($4,862.40)
Net Profit as % of Drawdown	5.09%	as % of Initial Capital	4.86%
Slct. Net Profit as % of Drawdown	113.44%	Net Profit as % of Drawdown	118.76%
Adj. Net Prof as % of Drawdown	173.10%	Slct. Net Profit as % of Drawdown	181.22%
	-34.70%	Adj. Net Prof as % of Drawdown	-36.33%
Max. Trade Drawdown			

Trade Analysis and Trades List

Table 5: Trade Analysis and Trades List for the Group System

	All Trades	Winners	Losers
Total Number of Trades	550	279	271
Avg. Trade Net Profit	$23.87	$337.77	($299.31)
1 Std. Deviation of Avg. Trade	$357.04	$74.39	$216.48
Avg. Trade + 1 Std. Deviation	$380.91	$412.16	($82.83)

Avg. Trade - 1 Std. Deviation	($333.18)	$263.38	($515.79)
Coefficient of Variation	1496.06%	22.02%	72.33%
Time Averages			
Avg. Time in Trades	12 Hrs, 34 Mins	9 Hrs, 51 Mins	15 Hrs, 21 Mins
Avg. Time Between Trades	3 Hrs, 8 Mins	21 Hrs, 7 Mins	16 Hrs, 28 Mins
Avg. Time Between Trade Profit Peaks	23 Dys, 3 Hrs		
Outliers	Total	Positive	Negative
Number of Outliers	5	0	5
Outlier Profit/Loss	($5,381.90)	$0.00	($5,381.90)
Run-up/Drawdown		Run-up	Drawdown
Max. Value		$548.70	($1,669.00)
Max. Value Date		7/23/2012	6/12/2012
Avg. Value		$259.46	($258.42)
1 Std. Deviation		$126.60	$253.77
Avg. + 1 Std. Deviation		$386.06	($4.65)
Avg. - 1 Std. Deviation		$132.87	($512.19)
Coefficient of Variation		48.79%	98.20%
Efficiency Analysis	Total	Entry	Exit
Avg. Efficiency	8.62%	55.27%	53.35%
1 Std. Deviation	68.18%	28.97%	46.13%
Avg. + 1 Std. Deviation	76.81%	84.25%	99.48%
Avg. - 1 Std. Deviation	-59.56%	26.30%	7.22%
Coefficient of Variation	790.66%	52.42%	86.46%
TradeStation Trade Series Analysis			
		Winners	Losers
Largest Profit/Loss		$538.00	($1,292.00)
Largest Profit/Loss as % of Gross		0.57%	1.59%
Largest Consec. Profit/Loss		$2,283.80	($4,847.10)
Largest Consec. Profit/Loss as % of Gross		2.42%	5.98%
Winning Series	Number of Series	Avg. Gain per Series	Avg. Loss Next Trade
1	75	$349.01	($258.71)
2	43	$344.88	($247.45)
3	25	$327.62	($260.80)
4	2	$377.01	($289.50)
5	4	$337.49	($187.47)

7	1	$254.43	($324.00)
8	1	$285.48	($385.00)
Losing Series	Number of Series	Avg. Loss per Series	Avg. Gain Next Trade
1	87	($245.00)	$349.67
2	31	($329.16)	$354.10
3	21	($308.18)	$339.39
4	8	($292.50)	$354.29
5	2	($285.34)	$354.00
8	1	($364.13)	$354.00
9	1	($538.57)	$354.00

#	Type	Date/Time	Signal	Price	Shares/Ctrts/Units - Profit/Loss	Net Profit - Cum Net Profit	% Profit	Run-up/Drawdown	Efficiency
1	Sell Short	5/14/2012 8:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	71.09%
	Buy to Cover	5/14/2012 18:30	Profit Target	$1.28	$364.00	$354.00		($148.00)	100.00%
2	Sell Short	5/15/2012 10:30	Sell	$1.28	100000	($32.00)	-0.02%	$139.00	86.34%
	Buy to Cover	5/15/2012 11:30	Buy to cover	$1.28	($22.00)	$322.00		($22.00)	0.00%
3	Sell Short	5/15/2012 12:30	Sell	$1.28	100000	$354.00	0.28%	$364.00	58.43%
	Buy to Cover	5/15/2012 18:30	Profit Target	$1.28	$364.00	$676.00		($259.00)	100.00%
4	Sell Short	5/15/2012 19:30	Sell	$1.28	100000	$354.00	0.28%	$364.00	84.26%
	Buy to Cover	5/15/2012 21:30	Profit Target	$1.28	$364.00	$1,030.00		($68.00)	100.00%
5	Sell Short	5/16/2012 14:30	Sell	$1.27	100000	($333.10)	-0.25%	$261.00	36.86%
	Buy to Cover	5/17/2012 7:30	Buy to cover	$1.27	($323.10)	$696.90		($447.00)	17.51%
6	Buy	5/17/2012 8:30	Buy	$1.27	100000	($432.00)	-0.33%	$86.00	16.93%
	Sell	5/17/2012 16:30	Sell to cover	$1.27	($422.00)	$264.90		($422.00)	0.00%
7	Sell Short	5/17/2012 17:30	Sell	$1.27	100000	$354.00	0.29%	$364.00	45.79%
	Buy to Cover	5/18/2012 11:30	Profit Target	$1.27	$364.00	$618.90		($431.00)	100.00%
8	Sell Short	5/18/2012 12:30	Sell	$1.27	100000	($178.00)	-0.13%	$267.00	61.38%
	Buy to Cover	5/18/2012 14:30	Buy to cover	$1.27	($168.00)	$440.90		($168.00)	0.00%
9	Sell Short	5/18/2012 15:30	Sell	$1.27	100000	($885.70)	-0.69%	$125.00	9.08%
	Buy to Cover	5/21/2012 21:30	Buy to cover	$1.28	($875.70)	($444.80)		($1,251.70)	27.31%
10	Buy	5/21/2012 23:30	Buy	$1.28	100000	$354.00	0.28%	$364.00	81.61%
	Sell	5/22/2012 1:30	Profit Target	$1.28	$364.00	($90.80)		($82.00)	100.00%
11	Buy	5/22/2012 2:29	Buy	$1.28	100000	($354.30)	-0.27%	$18.70	5.14%
	Sell	5/22/2012 14:30	Sell to cover	$1.28	($344.30)	($445.10)		($351.30)	1.89%
12	Sell Short	5/22/2012 16:30	Sell	$1.28	100000	$354.00	0.29%	$364.00	73.09%
	Buy to Cover	5/22/2012 22:30	Profit Target	$1.27	$364.00	($91.10)		($134.00)	100.00%
13	Sell Short	5/22/2012 23:30	Sell	$1.27	100000	$354.00	0.29%	$364.00	96.30%
	Buy to Cover	5/23/2012 1:30	Profit Target	$1.27	$364.00	$262.90		($14.00)	100.00%
14	Sell Short	5/23/2012 8:30	Sell	$1.27	100000	$354.00	0.29%	$364.00	77.61%
	Buy to Cover	5/23/2012 14:30	Profit Target	$1.26	$364.00	$616.90		($105.00)	100.00%
15	Sell Short	5/23/2012 17:30	Sell	$1.27	100000	($181.00)	-0.14%	$105.00	38.04%
	Buy to Cover	5/23/2012 19:30	Buy to cover	$1.27	($171.00)	$435.90		($171.00)	0.00%
16	Sell Short	5/23/2012 20:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	80.53%
	Buy to	5/23/2012 20:30	Profit	$1.26	$364.00	$789.90		($88.00)	100.00%

	Cover		Target						
17	Sell Short	5/24/2012 2:29	Sell	$1.26	100000	$354.00	0.29%	$364.00	98.91%
	Buy to Cover	5/24/2012 5:30	Profit Target	$1.26	$364.00	$1,143.90		($4.00)	100.00%
18	Sell Short	5/24/2012 6:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	51.49%
	Buy to Cover	5/24/2012 14:30	Profit Target	$1.25	$364.00	$1,497.90		($343.00)	100.00%
19	Sell Short	5/24/2012 15:30	Sell	$1.26	100000	($268.00)	-0.21%	$2.00	0.77%
	Buy to Cover	5/24/2012 16:30	Buy to cover	$1.26	($258.00)	$1,229.90		($258.00)	0.00%
20	Sell Short	5/24/2012 17:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	46.02%
	Buy to Cover	5/24/2012 23:30	Profit Target	$1.25	$364.00	$1,583.90		($427.00)	100.00%
21	Sell Short	5/25/2012 0:30	Sell	$1.25	100000	($243.10)	-0.19%	$114.90	33.05%
	Buy to Cover	5/25/2012 12:30	Buy to cover	$1.26	($233.10)	$1,340.80		($233.10)	0.00%
22	Buy	5/25/2012 14:30	Buy	$1.26	100000	($435.00)	-0.34%	$206.00	32.65%
	Sell	5/25/2012 18:30	Sell to cover	$1.25	($425.00)	$905.80		($425.00)	0.00%
23	Sell Short	5/25/2012 19:30	Sell	$1.25	100000	($645.00)	-0.51%	$119.00	15.78%
	Buy to Cover	5/28/2012 3:30	Buy to cover	$1.26	($635.00)	$260.80		($635.10)	0.00%
24	Buy	5/28/2012 5:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	70.00%
	Sell	5/28/2012 12:30	Profit Target	$1.26	$364.00	$614.80		($156.00)	100.00%
25	Buy	5/28/2012 13:30	Buy	$1.26	100000	($438.00)	-0.34%	$45.00	8.93%
	Sell	5/28/2012 18:30	Sell to cover	$1.26	($428.00)	$176.80		($459.00)	6.15%
26	Buy	5/28/2012 19:30	Buy	$1.26	100000	($518.30)	-0.40%	$20.70	3.24%
	Sell	5/29/2012 18:30	Sell to cover	$1.25	($508.30)	($341.50)		($628.30)	18.49%
27	Sell Short	5/29/2012 19:30	Sell	$1.25	100000	$354.00	0.29%	$364.00	65.00%
	Buy to Cover	5/29/2012 21:30	Profit Target	$1.25	$364.00	$12.50		($196.00)	100.00%
28	Sell Short	5/29/2012 22:30	Sell	$1.25	100000	$354.00	0.29%	$364.00	62.22%
	Buy to Cover	5/30/2012 13:30	Profit Target	$1.24	$364.00	$366.50		($221.00)	100.00%
29	Sell Short	5/30/2012 14:30	Sell	$1.25	100000	($91.00)	-0.07%	$283.00	77.75%
	Buy to Cover	5/30/2012 17:30	Buy to cover	$1.25	($81.00)	$275.50		($81.00)	0.00%
30	Sell Short	5/30/2012 18:30	Sell	$1.25	100000	$354.00	0.29%	$364.00	97.85%
	Buy to Cover	5/30/2012 19:30	Profit Target	$1.24	$364.00	$629.50		($8.00)	100.00%
31	Sell Short	5/30/2012 20:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	70.27%
	Buy to Cover	5/31/2012 0:30	Profit Target	$1.24	$364.00	$983.50		($154.00)	100.00%

32	Sell Short	5/31/2012 8:30	Sell	$1.24	100000	($69.00)	-0.05%	$89.00	60.14%
	Buy to Cover	5/31/2012 10:30	Buy to cover	$1.24	($59.00)	$914.50		($59.00)	0.00%
33	Sell Short	5/31/2012 11:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	47.03%
	Buy to Cover	5/31/2012 21:30	Profit Target	$1.24	$364.00	$1,268.50		($410.00)	100.00%
34	Sell Short	5/31/2012 22:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	51.93%
	Buy to Cover	6/1/2012 7:30	Profit Target	$1.23	$364.00	$1,622.50		($337.00)	100.00%
35	Sell Short	6/1/2012 8:30	Sell	$1.23	100000	($145.00)	-0.11%	$38.00	21.97%
	Buy to Cover	6/1/2012 11:30	Buy to cover	$1.24	($135.00)	$1,477.50		($135.00)	0.00%
36	Sell Short	6/1/2012 12:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	98.64%
	Buy to Cover	6/1/2012 13:30	Profit Target	$1.23	$364.00	$1,831.50		($5.00)	100.00%
37	Sell Short	6/1/2012 14:30	Sell	$1.23	100000	$354.00	0.29%	$364.00	91.00%
	Buy to Cover	6/1/2012 15:30	Profit Target	$1.23	$364.00	$2,185.50		($36.00)	100.00%
38	Sell Short	6/1/2012 16:30	Sell	$1.23	100000	($382.00)	-0.30%	$348.00	48.33%
	Buy to Cover	6/1/2012 19:30	Buy to cover	$1.24	($372.00)	$1,803.50		($372.00)	0.00%
39	Buy	6/1/2012 21:30	Buy	$1.24	100000	$354.00	0.29%	$364.00	98.64%
	Sell	6/1/2012 21:30	Profit Target	$1.24	$364.00	$2,157.50		($5.00)	100.00%
40	Buy	6/1/2012 22:30	Buy	$1.24	100000	$354.40	0.29%	$364.40	49.73%
	Sell	6/4/2012 19:30	Profit Target	$1.25	$364.40	$2,511.90		($369.00)	100.00%
41	Buy	6/4/2012 23:30	Buy	$1.25	100000	$354.40	0.29%	$364.40	94.07%
	Sell	6/5/2012 5:30	Profit Target	$1.25	$364.40	$2,866.30		($23.00)	100.00%
42	Buy	6/5/2012 10:30	Buy	$1.25	100000	($264.00)	-0.20%	$110.00	30.22%
	Sell	6/5/2012 12:30	Sell to cover	$1.25	($254.00)	$2,602.30		($254.00)	0.00%
43	Buy	6/5/2012 13:30	Buy	$1.25	100000	($60.80)	-0.04%	$327.20	27.93%
	Sell	6/6/2012 16:30	Sell to cover	$1.25	($50.80)	$2,541.50		($849.00)	67.91%
44	Buy	6/6/2012 17:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	40.00%
	Sell	6/6/2012 21:30	Profit Target	$1.25	$364.00	$2,895.50		($546.00)	100.00%
45	Buy	6/6/2012 22:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	98.11%
	Sell	6/6/2012 22:30	Profit Target	$1.26	$364.00	$3,249.50		($7.00)	100.00%
46	Buy	6/6/2012 23:30	Buy	$1.26	100000	$354.40	0.29%	$364.40	66.00%
	Sell	6/7/2012 17:30	Profit Target	$1.26	$364.40	$3,603.90		($188.60)	100.00%
47	Buy	6/7/2012 18:30	Buy	$1.26	100000	($140.00)	-0.10%	$359.00	73.42%

	Sell	6/7/2012 20:30	Sell to cover	$1.26	($130.00)	$3,463.90		($130.00)	0.00%
48	Buy	6/7/2012 21:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	67.66%
	Sell	6/7/2012 23:30	Profit Target	$1.26	$364.00	$3,817.90		($174.00)	100.00%
49	Buy	6/8/2012 0:30	Buy	$1.26	100000	$407.00	0.33%	$416.00	21.27%
	Sell	6/11/2012 3:30	Profit Target	$1.26	$417.00	$4,224.90		($1,548.00)	100.00%
50	Buy	6/11/2012 7:30	Buy	$1.26	100000	($436.00)	-0.34%	$132.00	23.66%
	Sell	6/11/2012 13:30	Sell to cover	$1.26	($426.00)	$3,788.90		($426.00)	0.00%
51	Buy	6/11/2012 14:30	Buy	$1.26	100000	($1,292.00)	-1.02%	$109.00	6.13%
	Sell	6/12/2012 18:30	Sell to cover	$1.25	#########	$2,496.90		($1,669.00)	21.78%
52	Sell Short	6/12/2012 19:30	Sell	$1.25	100000	$354.00	0.29%	$364.00	58.05%
	Buy to Cover	6/12/2012 20:30	Profit Target	$1.25	$364.00	$2,850.90		($263.00)	100.00%
53	Sell Short	6/12/2012 21:30	Sell	$1.25	100000	($565.00)	-0.45%	$5.00	0.89%
	Buy to Cover	6/12/2012 23:30	Buy to cover	$1.25	($555.00)	$2,285.90		($555.00)	0.00%
54	Sell Short	6/13/2012 0:30	Sell	$1.25	100000	($883.70)	-0.70%	$246.50	18.02%
	Buy to Cover	6/14/2012 18:30	Buy to cover	$1.26	($873.70)	$1,402.20		($1,118.50)	17.95%
55	Buy	6/14/2012 19:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	70.00%
	Sell	6/14/2012 21:30	Profit Target	$1.26	$364.00	$1,756.20		($156.00)	100.00%
56	Buy	6/14/2012 22:30	Buy	$1.26	100000	$354.30	0.29%	$364.30	63.10%
	Sell	6/15/2012 10:30	Profit Target	$1.26	$364.30	$2,110.50		($214.00)	100.00%
57	Buy	6/15/2012 11:30	Buy	$1.26	100000	($149.00)	-0.11%	$47.00	25.27%
	Sell	6/15/2012 12:30	Sell to cover	$1.26	($139.00)	$1,961.50		($139.00)	0.00%
58	Buy	6/15/2012 13:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	52.91%
	Sell	6/16/2012 2:29	Profit Target	$1.27	$364.00	$2,315.50		($324.00)	100.00%
59	Buy	6/18/2012 3:30	Buy	$1.27	100000	$354.00	0.29%	$364.00	100.00%
	Sell	6/18/2012 3:30	Profit Target	$1.27	$364.00	$2,669.50		$0.00	100.00%
60	Buy	6/18/2012 6:30	Buy	$1.27	100000	($256.00)	-0.19%	$231.00	48.43%
	Sell	6/18/2012 7:30	Sell to cover	$1.27	($246.00)	$2,413.50		($246.00)	0.00%
61	Buy	6/18/2012 8:30	Buy	$1.27	100000	$354.00	0.29%	$364.00	85.85%
	Sell	6/18/2012 12:30	Profit Target	$1.27	$364.00	$2,767.50		($60.00)	100.00%
62	Buy	6/18/2012 13:30	Buy	$1.27	100000	($1,052.90)	-0.82%	$188.00	12.52%
	Sell	6/19/2012 14:30	Sell to	$1.26	#########	$1,714.60		($1,313.00)	18.05%

			cover						
63	Sell Short	6/19/2012 15:30	Sell	$1.26	100000	($279.00)	-0.21%	$183.00	40.49%
	Buy to Cover	6/19/2012 16:30	Buy to cover	$1.26	($269.00)	$1,435.60		($269.00)	0.00%
64	Buy	6/19/2012 17:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	90.10%
	Sell	6/19/2012 19:30	Profit Target	$1.26	$364.00	$1,789.60		($40.00)	100.00%
65	Buy	6/19/2012 20:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	96.81%
	Sell	6/19/2012 21:30	Profit Target	$1.27	$364.00	$2,143.60		($12.00)	100.00%
66	Buy	6/20/2012 1:30	Buy	$1.27	100000	($156.00)	-0.11%	$68.00	32.08%
	Sell	6/20/2012 6:30	Sell to cover	$1.27	($146.00)	$1,987.60		($146.00)	0.00%
67	Buy	6/20/2012 7:30	Buy	$1.27	100000	$354.00	0.29%	$364.00	90.32%
	Sell	6/20/2012 14:30	Profit Target	$1.27	$364.00	$2,341.60		($39.00)	100.00%
68	Buy	6/20/2012 15:30	Buy	$1.27	100000	($311.00)	-0.24%	$239.00	44.26%
	Sell	6/20/2012 22:30	Sell to cover	$1.27	($301.00)	$2,030.60		($301.00)	0.00%
69	Buy	6/20/2012 23:30	Buy	$1.27	100000	$354.00	0.29%	$364.00	98.11%
	Sell	6/20/2012 23:30	Profit Target	$1.27	$364.00	$2,384.60		($7.00)	100.00%
70	Buy	6/21/2012 0:30	Buy	$1.27	100000	($467.00)	-0.36%	$84.00	12.96%
	Sell	6/21/2012 13:30	Sell to cover	$1.27	($457.00)	$1,917.60		($564.00)	16.67%
71	Sell Short	6/21/2012 14:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	42.47%
	Buy to Cover	6/21/2012 20:30	Profit Target	$1.26	$364.00	$2,271.60		($493.00)	100.00%
72	Sell Short	6/21/2012 21:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	94.79%
	Buy to Cover	6/21/2012 21:30	Profit Target	$1.26	$364.00	$2,625.60		($20.00)	100.00%
73	Sell Short	6/22/2012 8:30	Sell	$1.26	100000	($43.00)	-0.03%	$49.00	53.85%
	Buy to Cover	6/22/2012 11:30	Buy to cover	$1.26	($33.00)	$2,582.60		($42.00)	9.89%
74	Sell Short	6/22/2012 12:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	96.30%
	Buy to Cover	6/22/2012 13:30	Profit Target	$1.25	$364.00	$2,936.60		($14.00)	100.00%
75	Sell Short	6/22/2012 15:30	Sell	$1.25	100000	($94.00)	-0.07%	$86.00	50.59%
	Buy to Cover	6/22/2012 16:30	Buy to cover	$1.26	($84.00)	$2,842.60		($84.00)	0.00%
76	Sell Short	6/22/2012 17:30	Sell	$1.25	100000	$354.20	0.29%	$364.20	52.45%
	Buy to Cover	6/25/2012 12:30	Profit Target	$1.25	$364.20	$3,196.80		($330.00)	100.00%
77	Sell Short	6/25/2012 13:30	Sell	$1.25	100000	($5.00)	0.00%	$344.00	82.69%
	Buy to Cover	6/25/2012 23:30	Buy to cover	$1.25	$5.00	$3,191.80		($72.00)	18.51%

78	Sell Short	6/26/2012 0:30	Sell	$1.25	100000	$354.10	0.29%	$364.10	54.17%
	Buy to Cover	6/26/2012 18:30	Profit Target	$1.25	$364.10	$3,545.90		($307.90)	100.00%
79	Sell Short	6/26/2012 19:30	Sell	$1.25	100000	($284.60)	-0.22%	$288.00	45.43%
	Buy to Cover	6/27/2012 8:30	Buy to cover	$1.25	($274.60)	$3,261.30		($346.00)	11.04%
80	Buy	6/27/2012 9:30	Buy	$1.25	100000	($394.00)	-0.31%	$51.00	11.72%
	Sell	6/27/2012 19:30	Sell to cover	$1.25	($384.00)	$2,867.30		($384.00)	0.00%
81	Sell Short	6/27/2012 20:30	Sell	$1.25	100000	($177.80)	-0.13%	$174.00	50.88%
	Buy to Cover	6/28/2012 6:30	Buy to cover	$1.25	($167.80)	$2,689.50		($167.80)	0.00%
82	Buy	6/28/2012 8:30	Buy	$1.25	100000	($327.00)	-0.25%	$328.00	50.85%
	Sell	6/28/2012 13:30	Sell to cover	$1.25	($317.00)	$2,362.50		($317.00)	0.00%
83	Sell Short	6/28/2012 15:30	Sell	$1.24	100000	($367.20)	-0.29%	$131.00	26.79%
	Buy to Cover	6/29/2012 8:30	Buy to cover	$1.25	($357.20)	$1,995.30		($357.20)	0.00%
84	Buy	6/29/2012 14:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	68.04%
	Sell	6/29/2012 18:30	Profit Target	$1.26	$364.00	$2,349.30		($171.00)	100.00%
85	Buy	6/29/2012 23:30	Buy	$1.27	100000	($352.80)	-0.27%	$263.20	42.13%
	Sell	7/2/2012 11:30	Sell to cover	$1.26	($342.80)	$1,996.50		($365.80)	3.66%
86	Buy	7/2/2012 12:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	77.78%
	Sell	7/2/2012 15:30	Profit Target	$1.27	$364.00	$2,350.50		($104.00)	100.00%
87	Buy	7/2/2012 16:30	Buy	$1.26	100000	($564.80)	-0.44%	$22.00	3.33%
	Sell	7/3/2012 14:30	Sell to cover	$1.26	($554.80)	$1,785.70		($638.00)	12.88%
88	Sell Short	7/3/2012 16:30	Sell	$1.26	100000	($173.00)	-0.13%	$285.00	63.62%
	Buy to Cover	7/3/2012 20:30	Buy to cover	$1.26	($163.00)	$1,612.70		($163.00)	0.00%
89	Buy	7/3/2012 22:30	Buy	$1.26	100000	($392.90)	-0.30%	$19.00	4.76%
	Sell	7/4/2012 7:30	Sell to cover	$1.26	($382.90)	$1,219.80		($382.90)	0.00%
90	Sell Short	7/4/2012 8:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	76.47%
	Buy to Cover	7/4/2012 19:30	Profit Target	$1.26	$364.00	$1,573.80		($112.00)	100.00%
91	Sell Short	7/4/2012 20:30	Sell	$1.26	100000	$354.00	0.29%	$364.00	84.85%
	Buy to Cover	7/4/2012 20:30	Profit Target	$1.25	$364.00	$1,927.80		($65.00)	100.00%
92	Sell Short	7/4/2012 22:30	Sell	$1.25	100000	($44.00)	-0.03%	$131.00	40.81%
	Buy to Cover	7/5/2012 6:30	Buy to cover	$1.25	($34.00)	$1,883.80		($190.00)	48.60%
93	Sell Short	7/5/2012 7:30	Sell	$1.25	100000	$354.00	0.29%	$364.00	83.11%

	Buy to Cover	7/5/2012 17:30	Profit Target	$1.25	$364.00	$2,237.80		($74.00)	100.00%
94	Sell Short	7/6/2012 12:30	Sell	$1.24	100000	($30.00)	-0.02%	$181.00	90.05%
	Buy to Cover	7/6/2012 14:30	Buy to cover	$1.24	($20.00)	$2,207.80		($20.00)	0.00%
95	Sell Short	7/6/2012 15:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	88.56%
	Buy to Cover	7/6/2012 18:30	Profit Target	$1.23	$364.00	$2,561.80		($47.00)	100.00%
96	Sell Short	7/9/2012 7:30	Sell	$1.23	100000	($138.00)	-0.10%	$24.00	15.79%
	Buy to Cover	7/9/2012 8:30	Buy to cover	$1.23	($128.00)	$2,423.80		($128.00)	0.00%
97	Sell Short	7/9/2012 9:30	Sell	$1.23	100000	($221.00)	-0.17%	$229.00	50.33%
	Buy to Cover	7/9/2012 22:30	Buy to cover	$1.23	($211.00)	$2,202.80		($226.00)	3.30%
98	Buy	7/9/2012 23:30	Buy	$1.23	100000	($227.80)	-0.18%	$137.20	39.15%
	Sell	7/10/2012 9:30	Sell to cover	$1.23	($217.80)	$1,975.00		($217.80)	0.00%
99	Sell Short	7/10/2012 10:30	Sell	$1.23	100000	($366.00)	-0.29%	$26.00	6.81%
	Buy to Cover	7/10/2012 14:30	Buy to cover	$1.23	($356.00)	$1,609.00		($356.00)	0.00%
100	Buy	7/10/2012 16:30	Buy	$1.23	100000	($350.00)	-0.28%	$29.00	7.86%
	Sell	7/10/2012 18:30	Sell to cover	$1.23	($340.00)	$1,259.00		($340.00)	0.00%
101	Sell Short	7/10/2012 19:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	67.78%
	Buy to Cover	7/10/2012 20:30	Profit Target	$1.22	$364.00	$1,613.00		($173.00)	100.00%
102	Sell Short	7/10/2012 21:30	Sell	$1.23	100000	($151.30)	-0.12%	$200.00	58.31%
	Buy to Cover	7/11/2012 13:30	Buy to cover	$1.23	($141.30)	$1,461.70		($141.30)	0.00%
103	Sell Short	7/11/2012 14:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	56.26%
	Buy to Cover	7/11/2012 21:30	Profit Target	$1.22	$364.00	$1,815.70		($283.00)	100.00%
104	Sell Short	7/11/2012 22:30	Sell	$1.22	100000	$354.40	0.30%	$364.40	54.09%
	Buy to Cover	7/12/2012 16:30	Profit Target	$1.22	$364.40	$2,170.10		($309.00)	100.00%
105	Sell Short	7/12/2012 20:30	Sell	$1.22	100000	($204.00)	-0.16%	$111.00	36.39%
	Buy to Cover	7/12/2012 21:30	Buy to cover	$1.22	($194.00)	$1,966.10		($194.00)	0.00%
106	Sell Short	7/12/2012 22:30	Sell	$1.22	100000	($176.30)	-0.14%	$173.70	49.01%
	Buy to Cover	7/13/2012 15:30	Buy to cover	$1.22	($166.30)	$1,789.80		($179.30)	3.68%
107	Sell Short	7/13/2012 16:30	Sell	$1.22	100000	$354.00	0.30%	$364.00	81.25%
	Buy to Cover	7/13/2012 19:30	Profit Target	$1.22	$364.00	$2,143.80		($84.00)	100.00%
108	Buy	7/13/2012 20:30	Buy	$1.22	100000	$356.00	0.30%	$364.20	82.99%
	Sell	7/16/2012 3:30	Profit	$1.23	$366.00	$2,499.80		($75.00)	100.00%

			Target						
109	Buy	7/16/2012 4:30	Buy	$1.22	100000	($280.00)	-0.22%	$98.00	26.63%
	Sell	7/16/2012 13:30	Sell to cover	$1.22	($270.00)	$2,219.80		($270.00)	0.00%
110	Sell Short	7/16/2012 15:30	Sell	$1.22	100000	($405.00)	-0.32%	$320.00	44.76%
	Buy to Cover	7/16/2012 19:30	Buy to cover	$1.22	($395.00)	$1,814.80		($395.00)	0.00%
111	Buy	7/16/2012 22:30	Buy	$1.23	100000	$354.50	0.30%	$364.50	73.94%
	Sell	7/17/2012 7:30	Profit Target	$1.23	$364.50	$2,169.30		($129.00)	100.00%
112	Buy	7/17/2012 9:30	Buy	$1.23	100000	($180.00)	-0.14%	$210.00	51.60%
	Sell	7/17/2012 18:30	Sell to cover	$1.23	($170.00)	$1,989.30		($197.00)	6.63%
113	Buy	7/17/2012 19:30	Buy	$1.23	100000	($521.60)	-0.41%	$241.40	20.92%
	Sell	7/18/2012 16:30	Sell to cover	$1.22	($511.60)	$1,467.70		($930.00)	35.97%
114	Sell Short	7/18/2012 17:30	Sell	$1.22	100000	($480.00)	-0.38%	$165.00	25.98%
	Buy to Cover	7/19/2012 1:30	Buy to cover	$1.23	($470.00)	$987.70		($470.00)	0.00%
115	Buy	7/19/2012 2:29	Buy	$1.23	100000	$354.60	0.30%	$364.60	82.99%
	Sell	7/19/2012 13:30	Profit Target	$1.23	$364.60	$1,342.30		($76.40)	100.00%
116	Buy	7/19/2012 14:30	Buy	$1.23	100000	($269.00)	-0.21%	$255.00	44.89%
	Sell	7/19/2012 18:30	Sell to cover	$1.23	($259.00)	$1,073.30		($313.00)	9.51%
117	Sell Short	7/19/2012 20:30	Sell	$1.22	100000	($400.50)	-0.32%	$131.00	22.17%
	Buy to Cover	7/20/2012 9:30	Buy to cover	$1.23	($390.50)	$672.80		($460.00)	11.68%
118	Sell Short	7/20/2012 10:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	71.94%
	Buy to Cover	7/20/2012 16:30	Profit Target	$1.22	$364.00	$1,026.80		($142.00)	100.00%
119	Sell Short	7/20/2012 17:30	Sell	$1.22	100000	$354.00	0.30%	$364.00	79.13%
	Buy to Cover	7/20/2012 17:30	Profit Target	$1.22	$364.00	$1,380.80		($96.00)	100.00%
120	Sell Short	7/20/2012 22:30	Sell	$1.22	100000	$538.00	0.45%	$548.70	98.03%
	Buy to Cover	7/23/2012 3:30	Profit Target	$1.21	$548.00	$1,918.80		($11.00)	100.00%
121	Sell Short	7/23/2012 16:30	Sell	$1.21	100000	$354.00	0.30%	$364.00	53.77%
	Buy to Cover	7/23/2012 18:30	Profit Target	$1.21	$364.00	$2,272.80		($313.00)	100.00%
122	Sell Short	7/23/2012 19:30	Sell	$1.21	100000	($522.00)	-0.42%	$110.00	17.68%
	Buy to Cover	7/23/2012 22:30	Buy to cover	$1.21	($512.00)	$1,750.80		($512.00)	0.00%
123	Sell Short	7/23/2012 23:30	Sell	$1.21	100000	$354.70	0.30%	$364.70	84.26%
	Buy to Cover	7/24/2012 13:30	Profit Target	$1.21	$364.70	$2,105.50		($68.00)	100.00%

124	Sell Short	7/24/2012 14:30	Sell	$1.21	100000	$354.00	0.30%	$364.00	68.29%
	Buy to Cover	7/24/2012 21:30	Profit Target	$1.21	$364.00	$2,459.50		($169.00)	100.00%
125	Sell Short	7/24/2012 22:30	Sell	$1.21	100000	($173.80)	-0.14%	$185.00	52.71%
	Buy to Cover	7/25/2012 9:30	Buy to cover	$1.21	($163.80)	$2,285.70		($163.80)	0.00%
126	Sell Short	7/25/2012 10:30	Sell	$1.21	100000	($875.30)	-0.72%	$202.00	17.31%
	Buy to Cover	7/26/2012 12:30	Buy to cover	$1.22	($865.30)	$1,410.40		($965.00)	8.48%
127	Buy	7/26/2012 13:30	Buy	$1.22	100000	($272.00)	-0.22%	$1.00	0.38%
	Sell	7/26/2012 14:30	Sell to cover	$1.21	($262.00)	$1,138.40		($262.00)	0.00%
128	Buy	7/27/2012 4:30	Buy	$1.23	100000	$44.00	0.04%	$352.00	80.37%
	Sell	7/27/2012 13:30	Sell to cover	$1.23	$54.00	$1,182.40		($86.00)	31.96%
129	Buy	7/27/2012 14:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	51.78%
	Sell	7/27/2012 17:30	Profit Target	$1.23	$364.00	$1,536.40		($339.00)	100.00%
130	Buy	7/27/2012 18:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	54.90%
	Sell	7/27/2012 19:30	Profit Target	$1.23	$364.00	$1,890.40		($299.00)	100.00%
131	Buy	7/27/2012 20:30	Buy	$1.24	100000	($592.50)	-0.47%	$352.00	32.15%
	Sell	7/30/2012 6:30	Sell to cover	$1.23	($582.50)	$1,297.90		($743.00)	14.79%
132	Sell Short	7/30/2012 7:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	95.29%
	Buy to Cover	7/30/2012 14:30	Profit Target	$1.23	$364.00	$1,651.90		($18.00)	100.00%
133	Sell Short	7/30/2012 15:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	59.57%
	Buy to Cover	7/30/2012 18:30	Profit Target	$1.22	$364.00	$2,005.90		($247.00)	100.00%
134	Sell Short	7/30/2012 19:30	Sell	$1.22	100000	($185.00)	-0.14%	$153.00	43.97%
	Buy to Cover	7/31/2012 1:30	Buy to cover	$1.23	($175.00)	$1,820.90		($195.00)	5.75%
135	Sell Short	7/31/2012 2:29	Sell	$1.23	100000	($302.30)	-0.24%	$98.70	24.08%
	Buy to Cover	7/31/2012 16:30	Buy to cover	$1.23	($292.30)	$1,518.60		($308.30)	3.93%
136	Buy	7/31/2012 17:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	81.07%
	Sell	7/31/2012 18:30	Profit Target	$1.23	$364.00	$1,872.60		($85.00)	100.00%
137	Buy	7/31/2012 19:30	Buy	$1.23	100000	($88.20)	-0.06%	$335.00	55.65%
	Sell	8/1/2012 6:30	Sell to cover	$1.23	($78.20)	$1,784.40		($267.00)	32.06%
138	Buy	8/1/2012 7:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	78.79%
	Sell	8/1/2012 13:30	Profit Target	$1.23	$364.00	$2,138.40		($98.00)	100.00%
139	Buy	8/1/2012 14:30	Buy	$1.23	100000	($324.00)	-0.25%	$105.00	25.06%

	Sell	8/1/2012 18:30	Sell to cover	$1.23	($314.00)	$1,814.40		($314.00)	0.00%
140	Buy	8/1/2012 19:30	Buy	$1.23	100000	($697.50)	-0.56%	$210.00	19.48%
	Sell	8/2/2012 18:30	Sell to cover	$1.22	($687.50)	$1,116.90		($869.50)	16.88%
141	Sell Short	8/2/2012 19:30	Sell	$1.22	100000	$354.00	0.30%	$364.00	78.96%
	Buy to Cover	8/2/2012 19:30	Profit Target	$1.22	$364.00	$1,470.90		($97.00)	100.00%
142	Sell Short	8/2/2012 20:30	Sell	$1.22	100000	$354.00	0.30%	$364.00	86.26%
	Buy to Cover	8/2/2012 20:30	Profit Target	$1.22	$364.00	$1,824.90		($58.00)	100.00%
143	Sell Short	8/2/2012 23:30	Sell	$1.22	100000	($386.50)	-0.31%	$87.00	18.75%
	Buy to Cover	8/3/2012 13:30	Buy to cover	$1.22	($376.50)	$1,438.40		($376.50)	0.00%
144	Buy	8/3/2012 15:30	Buy	$1.22	100000	$354.00	0.30%	$364.00	97.07%
	Sell	8/3/2012 16:30	Profit Target	$1.22	$364.00	$1,792.40		($11.00)	100.00%
145	Buy	8/3/2012 18:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	47.27%
	Sell	8/3/2012 19:30	Profit Target	$1.23	$364.00	$2,146.40		($406.00)	100.00%
146	Buy	8/6/2012 8:30	Buy	$1.24	100000	($87.00)	-0.06%	$79.00	50.64%
	Sell	8/6/2012 10:30	Sell to cover	$1.24	($77.00)	$2,059.40		($77.00)	0.00%
147	Buy	8/6/2012 11:30	Buy	$1.24	100000	($39.30)	-0.02%	$348.00	39.64%
	Sell	8/7/2012 10:30	Sell to cover	$1.24	($29.30)	$2,020.10		($530.00)	57.18%
148	Buy	8/7/2012 11:30	Buy	$1.24	100000	$354.00	0.29%	$364.00	69.07%
	Sell	8/7/2012 13:30	Profit Target	$1.24	$364.00	$2,374.10		($163.00)	100.00%
149	Buy	8/7/2012 14:30	Buy	$1.24	100000	($216.00)	-0.17%	$186.00	39.83%
	Sell	8/8/2012 1:30	Sell to cover	$1.24	($206.00)	$2,158.10		($281.00)	16.06%
150	Sell Short	8/8/2012 3:30	Sell	$1.24	100000	$354.00	0.29%	$364.00	88.35%
	Buy to Cover	8/8/2012 15:30	Profit Target	$1.24	$364.00	$2,512.10		($48.00)	100.00%
151	Sell Short	8/8/2012 16:30	Sell	$1.24	100000	($9.00)	0.00%	$338.00	78.97%
	Buy to Cover	8/8/2012 21:30	Buy to cover	$1.24	$1.00	$2,503.10		($90.00)	21.26%
152	Sell Short	8/8/2012 22:30	Sell	$1.24	100000	$354.50	0.29%	$364.50	61.18%
	Buy to Cover	8/9/2012 16:30	Profit Target	$1.23	$364.50	$2,857.60		($230.50)	100.00%
153	Sell Short	8/9/2012 21:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	86.87%
	Buy to Cover	8/9/2012 21:30	Profit Target	$1.23	$364.00	$3,211.60		($55.00)	100.00%
154	Sell Short	8/10/2012 0:30	Sell	$1.23	100000	($189.00)	-0.15%	$28.00	13.53%
	Buy to	8/10/2012 2:29	Buy to	$1.23	($179.00)	$3,022.60		($178.50)	0.00%

	Cover		cover						
155	Sell Short	8/10/2012 3:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	91.69%
	Buy to Cover	8/10/2012 13:30	Profit Target	$1.23	$364.00	$3,376.60		($33.00)	100.00%
156	Sell Short	8/10/2012 15:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	95.79%
	Buy to Cover	8/10/2012 19:30	Profit Target	$1.22	$364.00	$3,730.60		($16.00)	100.00%
157	Sell Short	8/10/2012 20:30	Sell	$1.23	100000	($973.00)	-0.79%	$23.00	2.01%
	Buy to Cover	8/14/2012 11:30	Buy to cover	$1.24	($963.00)	$2,757.60		($1,118.50)	13.57%
158	Buy	8/14/2012 12:30	Buy	$1.24	100000	($181.00)	-0.14%	$256.00	59.95%
	Sell	8/14/2012 18:30	Sell to cover	$1.23	($171.00)	$2,576.60		($171.00)	0.00%
159	Sell Short	8/14/2012 21:30	Sell	$1.23	100000	($157.90)	-0.12%	$59.10	22.62%
	Buy to Cover	8/15/2012 12:30	Buy to cover	$1.23	($147.90)	$2,418.70		($195.00)	17.86%
160	Sell Short	8/15/2012 14:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	68.81%
	Buy to Cover	8/15/2012 16:30	Profit Target	$1.23	$364.00	$2,772.70		($165.00)	100.00%
161	Sell Short	8/15/2012 17:30	Sell	$1.23	100000	($44.50)	-0.03%	$220.00	73.83%
	Buy to Cover	8/16/2012 6:30	Buy to cover	$1.23	($34.50)	$2,728.20		($78.00)	14.43%
162	Sell Short	8/16/2012 8:30	Sell	$1.23	100000	$354.00	0.30%	$364.00	93.81%
	Buy to Cover	8/16/2012 12:30	Profit Target	$1.23	$364.00	$3,082.20		($24.00)	100.00%
163	Sell Short	8/16/2012 13:30	Sell	$1.23	100000	($371.00)	-0.29%	$31.00	7.91%
	Buy to Cover	8/16/2012 18:30	Buy to cover	$1.23	($361.00)	$2,711.20		($361.00)	0.00%
164	Buy	8/16/2012 19:30	Buy	$1.23	100000	$354.00	0.30%	$364.00	81.98%
	Sell	8/16/2012 20:30	Profit Target	$1.24	$364.00	$3,065.20		($80.00)	100.00%
165	Buy	8/17/2012 1:30	Buy	$1.24	100000	($128.70)	-0.09%	$204.30	47.36%
	Sell	8/17/2012 17:30	Sell to cover	$1.23	($118.70)	$2,936.50		($230.70)	25.75%
166	Buy	8/17/2012 19:30	Buy	$1.24	100000	($292.40)	-0.23%	$157.60	19.90%
	Sell	8/20/2012 16:30	Sell to cover	$1.23	($282.40)	$2,644.10		($640.00)	44.93%
167	Sell Short	8/20/2012 18:30	Sell	$1.23	100000	($430.00)	-0.34%	$108.00	20.19%
	Buy to Cover	8/21/2012 0:30	Buy to cover	$1.23	($420.00)	$2,214.10		($427.00)	1.31%
168	Buy	8/21/2012 1:30	Buy	$1.23	100000	$354.50	0.30%	$364.50	89.05%
	Sell	8/21/2012 13:30	Profit Target	$1.24	$364.50	$2,568.60		($46.50)	100.00%
169	Buy	8/22/2012 9:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	52.37%
	Sell	8/23/2012 0:30	Profit Target	$1.25	$364.00	$2,922.60		($331.00)	100.00%

170	Buy	8/23/2012 2:29	Buy	$1.25	100000	$354.60	0.29%	$364.60	82.81%
	Sell	8/23/2012 12:30	Profit Target	$1.26	$364.60	$3,277.20		($77.40)	100.00%
171	Buy	8/23/2012 14:30	Buy	$1.26	100000	($181.00)	-0.14%	$71.00	26.69%
	Sell	8/23/2012 17:30	Sell to cover	$1.25	($171.00)	$3,096.20		($195.00)	9.02%
172	Buy	8/23/2012 18:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	80.35%
	Sell	8/23/2012 20:30	Profit Target	$1.26	$364.00	$3,450.20		($89.00)	100.00%
173	Buy	8/23/2012 21:30	Buy	$1.26	100000	($298.50)	-0.23%	$60.00	16.53%
	Sell	8/24/2012 10:30	Sell to cover	$1.26	($288.50)	$3,151.70		($304.50)	4.41%
174	Buy	8/24/2012 11:30	Buy	$1.26	100000	($566.40)	-0.44%	$78.00	9.43%
	Sell	8/27/2012 11:30	Sell to cover	$1.25	($556.40)	$2,585.30		($749.00)	23.46%
175	Sell Short	8/27/2012 12:30	Sell	$1.25	100000	$354.60	0.29%	$364.60	53.14%
	Buy to Cover	8/28/2012 7:30	Profit Target	$1.25	$364.60	$2,939.90		($321.00)	100.00%
176	Sell Short	8/28/2012 8:30	Sell	$1.25	100000	($208.00)	-0.16%	$13.00	6.16%
	Buy to Cover	8/28/2012 13:30	Buy to cover	$1.25	($198.00)	$2,731.90		($198.00)	0.00%
177	Buy	8/28/2012 15:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	99.73%
	Sell	8/28/2012 19:30	Profit Target	$1.26	$364.00	$3,085.90		($1.00)	100.00%
178	Buy	8/28/2012 20:30	Buy	$1.25	100000	$36.20	0.04%	$275.00	97.52%
	Sell	8/29/2012 10:30	Sell to cover	$1.26	$46.20	$3,122.10		($7.00)	20.57%
179	Buy	8/29/2012 11:30	Buy	$1.26	100000	($222.00)	-0.17%	$169.00	40.92%
	Sell	8/29/2012 19:30	Sell to cover	$1.25	($212.00)	$2,900.10		($244.00)	7.75%
180	Sell Short	8/29/2012 20:30	Sell	$1.25	100000	($207.40)	-0.16%	$95.00	31.25%
	Buy to Cover	8/30/2012 11:30	Buy to cover	$1.25	($197.40)	$2,692.70		($209.00)	3.62%
181	Buy	8/30/2012 12:30	Buy	$1.26	100000	($245.00)	-0.19%	$108.00	31.49%
	Sell	8/30/2012 20:30	Sell to cover	$1.25	($235.00)	$2,447.70		($235.00)	0.00%
182	Sell Short	8/30/2012 21:30	Sell	$1.25	100000	($436.40)	-0.34%	$56.00	11.59%
	Buy to Cover	8/31/2012 14:30	Buy to cover	$1.25	($426.40)	$2,011.30		($426.40)	0.00%
183	Buy	8/31/2012 15:30	Buy	$1.25	100000	$354.00	0.29%	$364.00	99.73%
	Sell	8/31/2012 16:30	Profit Target	$1.26	$364.00	$2,365.30		($1.00)	100.00%
184	Buy	8/31/2012 22:30	Buy	$1.26	100000	($91.00)	-0.06%	$61.00	23.37%
	Sell	9/3/2012 3:30	Sell to cover	$1.26	($81.00)	$2,274.30		($200.00)	45.59%
185	Buy	9/3/2012 4:30	Buy	$1.26	100000	$354.70	0.29%	$364.70	64.66%

	Sell	9/4/2012 8:30	Profit Target	$1.26	$364.70	$2,629.00		($200.00)	100.00%
186	Buy	9/4/2012 11:30	Buy	$1.26	100000	($113.00)	-0.08%	$174.00	62.82%
	Sell	9/4/2012 15:30	Sell to cover	$1.26	($103.00)	$2,516.00		($103.00)	0.00%
187	Buy	9/4/2012 16:30	Buy	$1.26	100000	($128.30)	-0.09%	$178.10	14.85%
	Sell	9/6/2012 7:30	Sell to cover	$1.26	($118.30)	$2,387.70		($1,047.90)	75.94%
188	Buy	9/6/2012 8:30	Buy	$1.26	100000	$354.00	0.29%	$364.00	74.74%
	Sell	9/6/2012 17:30	Profit Target	$1.26	$364.00	$2,741.70		($123.00)	100.00%
189	Buy	9/6/2012 18:30	Buy	$1.26	100000	$354.70	0.29%	$364.70	32.53%
	Sell	9/7/2012 13:30	Profit Target	$1.27	$364.70	$3,096.40		($759.00)	100.00%
190	Buy	9/7/2012 15:30	Buy	$1.27	100000	$354.00	0.29%	$364.00	90.32%
	Sell	9/7/2012 17:30	Profit Target	$1.27	$364.00	$3,450.40		($39.00)	100.00%
191	Buy	9/10/2012 7:30	Buy	$1.28	100000	($129.00)	-0.09%	$156.00	56.73%
	Sell	9/10/2012 14:30	Sell to cover	$1.28	($119.00)	$3,321.40		($119.00)	0.00%
192	Buy	9/10/2012 15:30	Buy	$1.28	100000	($123.00)	-0.09%	$204.00	60.71%
	Sell	9/11/2012 0:30	Sell to cover	$1.28	($113.00)	$3,198.40		($132.00)	5.65%
193	Sell Short	9/11/2012 2:29	Sell	$1.28	100000	($260.30)	-0.20%	$36.70	12.54%
	Buy to Cover	9/11/2012 8:30	Buy to cover	$1.28	($250.30)	$2,938.10		($250.30)	0.00%
194	Sell Short	9/11/2012 12:30	Sell	$1.28	100000	($519.00)	-0.40%	$71.00	11.83%
	Buy to Cover	9/11/2012 19:30	Buy to cover	$1.28	($509.00)	$2,419.10		($529.00)	3.33%
195	Buy	9/11/2012 20:30	Buy	$1.28	100000	$354.30	0.29%	$364.30	75.26%
	Sell	9/12/2012 10:30	Profit Target	$1.29	$364.30	$2,773.40		($121.00)	100.00%
196	Buy	9/12/2012 12:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	75.36%
	Sell	9/12/2012 14:30	Profit Target	$1.29	$364.00	$3,127.40		($119.00)	100.00%
197	Buy	9/12/2012 18:30	Buy	$1.29	100000	($34.30)	-0.02%	$341.70	62.71%
	Sell	9/13/2012 18:30	Sell to cover	$1.29	($24.30)	$3,093.10		($204.00)	33.09%
198	Buy	9/13/2012 19:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	67.41%
	Sell	9/13/2012 22:30	Profit Target	$1.29	$364.00	$3,447.10		($176.00)	100.00%
199	Buy	9/13/2012 23:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	97.07%
	Sell	9/13/2012 23:30	Profit Target	$1.29	$364.00	$3,801.10		($11.00)	100.00%
200	Buy	9/15/2012 0:30	Buy	$1.31	100000	$354.70	0.28%	$364.70	55.71%
	Sell	9/17/2012 19:30	Profit	$1.31	$364.70	$4,155.80		($292.30)	100.00%

			Target						
201	Buy	9/17/2012 20:30	Buy	$1.31	100000	($529.80)	-0.39%	$84.00	12.94%
	Sell	9/18/2012 6:30	Sell to cover	$1.31	($519.80)	$3,626.00		($565.00)	7.24%
202	Sell Short	9/18/2012 7:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	63.41%
	Buy to Cover	9/18/2012 15:30	Profit Target	$1.31	$364.00	$3,980.00		($210.00)	100.00%
203	Sell Short	9/18/2012 16:30	Sell	$1.31	100000	$116.80	0.09%	$310.00	68.43%
	Buy to Cover	9/19/2012 5:30	Buy to cover	$1.30	$126.80	$4,096.80		($143.00)	58.94%
204	Sell Short	9/19/2012 6:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	48.47%
	Buy to Cover	9/19/2012 15:30	Profit Target	$1.30	$364.00	$4,450.80		($387.00)	100.00%
205	Sell Short	9/19/2012 16:30	Sell	$1.30	100000	($426.00)	-0.32%	$207.00	33.23%
	Buy to Cover	9/19/2012 20:30	Buy to cover	$1.31	($416.00)	$4,024.80		($416.00)	0.00%
206	Buy	9/19/2012 23:30	Buy	$1.31	100000	($389.50)	-0.29%	$7.00	1.82%
	Sell	9/20/2012 8:30	Sell to cover	$1.30	($379.50)	$3,635.30		($379.50)	0.00%
207	Sell Short	9/20/2012 9:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	82.54%
	Buy to Cover	9/20/2012 12:30	Profit Target	$1.30	$364.00	$3,989.30		($77.00)	100.00%
208	Sell Short	9/20/2012 21:30	Sell	$1.29	100000	($101.00)	-0.07%	$131.00	59.01%
	Buy to Cover	9/21/2012 0:30	Buy to cover	$1.30	($91.00)	$3,888.30		($91.00)	0.00%
209	Sell Short	9/21/2012 1:30	Sell	$1.30	100000	($350.20)	-0.26%	$140.80	29.11%
	Buy to Cover	9/21/2012 14:30	Buy to cover	$1.30	($340.20)	$3,538.10		($340.20)	0.00%
210	Buy	9/21/2012 15:30	Buy	$1.30	100000	($588.00)	-0.44%	$70.00	8.50%
	Sell	9/22/2012 2:29	Sell to cover	$1.30	($578.00)	$2,950.10		($754.00)	21.36%
211	Sell Short	9/24/2012 3:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	71.94%
	Buy to Cover	9/24/2012 7:30	Profit Target	$1.29	$364.00	$3,304.10		($142.00)	100.00%
212	Sell Short	9/24/2012 8:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	49.46%
	Buy to Cover	9/24/2012 14:30	Profit Target	$1.29	$364.00	$3,658.10		($372.00)	100.00%
213	Sell Short	9/24/2012 15:30	Sell	$1.29	100000	($132.00)	-0.09%	$132.00	29.73%
	Buy to Cover	9/24/2012 23:30	Buy to cover	$1.29	($122.00)	$3,526.10		($312.00)	42.79%
214	Sell Short	9/25/2012 0:30	Sell	$1.29	100000	($183.20)	-0.13%	$339.80	50.90%
	Buy to Cover	9/25/2012 18:30	Buy to cover	$1.29	($173.20)	$3,342.90		($326.20)	22.97%
215	Buy	9/25/2012 19:30	Buy	$1.30	100000	($465.00)	-0.35%	$155.00	25.41%
	Sell	9/26/2012 1:30	Sell to cover	$1.29	($455.00)	$2,877.90		($455.00)	0.00%

216	Sell Short	9/26/2012 2:29	Sell	$1.29	100000	$354.00	0.28%	$364.00	79.07%
	Buy to Cover	9/26/2012 10:30	Profit Target	$1.29	$364.00	$3,231.90		($90.00)	100.00%
217	Sell Short	9/26/2012 11:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	68.94%
	Buy to Cover	9/26/2012 21:30	Profit Target	$1.28	$364.00	$3,585.90		($164.00)	100.00%
218	Sell Short	9/26/2012 22:30	Sell	$1.29	100000	($366.10)	-0.28%	$75.90	13.67%
	Buy to Cover	9/27/2012 18:30	Buy to cover	$1.29	($356.10)	$3,219.80		($480.10)	22.30%
219	Sell Short	9/27/2012 20:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	91.69%
	Buy to Cover	9/27/2012 21:30	Profit Target	$1.28	$364.00	$3,573.80		($33.00)	100.00%
220	Sell Short	9/27/2012 22:30	Sell	$1.29	100000	$430.80	0.34%	$441.50	33.77%
	Buy to Cover	10/1/2012 3:30	Profit Target	$1.28	$440.80	$4,004.60		($862.20)	100.00%
221	Sell Short	10/1/2012 4:30	Sell	$1.28	100000	$354.00	0.28%	$364.00	96.55%
	Buy to Cover	10/1/2012 5:30	Profit Target	$1.28	$364.00	$4,358.60		($13.00)	100.00%
222	Sell Short	10/1/2012 7:30	Sell	$1.28	100000	($128.00)	-0.09%	$136.00	53.54%
	Buy to Cover	10/1/2012 12:30	Buy to cover	$1.28	($118.00)	$4,230.60		($118.00)	0.00%
223	Sell Short	10/1/2012 13:30	Sell	$1.28	100000	($747.20)	-0.57%	$49.00	4.90%
	Buy to Cover	10/2/2012 11:30	Buy to cover	$1.29	($737.20)	$3,483.40		($952.00)	21.38%
224	Buy	10/2/2012 12:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	53.29%
	Sell	10/2/2012 21:30	Profit Target	$1.29	$364.00	$3,837.40		($319.00)	100.00%
225	Buy	10/2/2012 23:30	Buy	$1.29	100000	($149.00)	-0.11%	$59.00	29.80%
	Sell	10/3/2012 0:30	Sell to cover	$1.29	($139.00)	$3,688.40		($139.00)	0.00%
226	Buy	10/3/2012 1:30	Buy	$1.29	100000	$354.10	0.29%	$364.10	49.87%
	Sell	10/4/2012 13:30	Profit Target	$1.30	$364.10	$4,042.50		($378.20)	100.00%
227	Buy	10/4/2012 14:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	62.98%
	Sell	10/4/2012 18:30	Profit Target	$1.30	$364.00	$4,396.50		($214.00)	100.00%
228	Buy	10/4/2012 20:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	95.79%
	Sell	10/4/2012 21:30	Profit Target	$1.30	$364.00	$4,750.50		($16.00)	100.00%
229	Buy	10/5/2012 6:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	66.18%
	Sell	10/5/2012 19:30	Profit Target	$1.30	$364.00	$5,104.50		($186.00)	100.00%
230	Buy	10/6/2012 0:30	Buy	$1.30	100000	($57.00)	-0.04%	$62.00	56.88%
	Sell	10/6/2012 1:30	Sell to cover	$1.30	($47.00)	$5,047.50		($47.00)	0.00%
231	Buy	10/6/2012 2:29	Buy	$1.30	100000	($624.20)	-0.47%	$63.00	6.50%

	Sell	10/9/2012 13:30	Sell to cover	$1.30	($614.20)	$4,423.30		($907.50)	30.44%
232	Sell Short	10/9/2012 16:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	59.00%
	Buy to Cover	10/9/2012 20:30	Profit Target	$1.29	$364.00	$4,777.30		($253.00)	100.00%
233	Sell Short	10/9/2012 21:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	95.54%
	Buy to Cover	10/9/2012 23:30	Profit Target	$1.29	$364.00	$5,131.30		($17.00)	100.00%
234	Sell Short	10/10/2012 1:30	Sell	$1.29	100000	$354.60	0.28%	$364.60	97.31%
	Buy to Cover	10/10/2012 8:30	Profit Target	$1.28	$364.60	$5,485.90		($7.40)	100.00%
235	Sell Short	10/10/2012 10:30	Sell	$1.29	100000	($102.00)	-0.07%	$87.00	48.60%
	Buy to Cover	10/10/2012 12:30	Buy to cover	$1.29	($92.00)	$5,383.90		($92.00)	0.00%
236	Sell Short	10/10/2012 13:30	Sell	$1.29	100000	$354.60	0.28%	$364.60	43.59%
	Buy to Cover	10/11/2012 7:30	Profit Target	$1.28	$364.60	$5,738.50		($471.00)	100.00%
237	Sell Short	10/11/2012 8:30	Sell	$1.28	100000	($389.00)	-0.30%	$23.00	5.72%
	Buy to Cover	10/11/2012 11:30	Buy to cover	$1.29	($379.00)	$5,349.50		($379.00)	0.00%
238	Sell Short	10/11/2012 12:30	Sell	$1.29	100000	($918.50)	-0.71%	$143.00	13.31%
	Buy to Cover	10/12/2012 13:30	Buy to cover	$1.29	($908.50)	$4,431.00		($931.00)	2.05%
239	Buy	10/12/2012 15:30	Buy	$1.30	100000	($210.40)	-0.15%	$237.00	44.38%
	Sell	10/15/2012 4:30	Sell to cover	$1.29	($200.40)	$4,220.60		($297.00)	18.35%
240	Buy	10/15/2012 5:30	Buy	$1.29	100000	$354.50	0.28%	$364.50	38.41%
	Sell	10/16/2012 12:30	Profit Target	$1.30	$364.50	$4,575.10		($587.00)	100.00%
241	Buy	10/16/2012 13:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	87.71%
	Sell	10/16/2012 17:30	Profit Target	$1.30	$364.00	$4,929.10		($51.00)	100.00%
242	Buy	10/16/2012 21:30	Buy	$1.30	100000	$354.30	0.28%	$364.30	95.34%
	Sell	10/17/2012 3:30	Profit Target	$1.31	$364.30	$5,283.40		($18.00)	100.00%
243	Buy	10/17/2012 9:30	Buy	$1.31	100000	($15.00)	0.00%	$94.00	94.95%
	Sell	10/17/2012 10:30	Sell to cover	$1.31	($5.00)	$5,268.40		($5.00)	0.00%
244	Buy	10/17/2012 11:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	90.32%
	Sell	10/17/2012 16:30	Profit Target	$1.31	$364.00	$5,622.40		($39.00)	100.00%

245	Buy	10/17/2012 21:30	Buy	$1.31	100000	($80.40)	-0.05%	$183.00	71.48%
	Sell	10/18/2012 4:30	Sell to cover	$1.31	($70.40)	$5,542.00		($73.00)	1.56%
246	Buy	10/18/2012 5:30	Buy	$1.31	100000	($250.00)	-0.18%	$70.00	22.15%
	Sell	10/18/2012 13:30	Sell to cover	$1.31	($240.00)	$5,292.00		($246.00)	1.90%
247	Sell Short	10/18/2012 14:30	Sell	$1.31	100000	($293.00)	-0.22%	$54.00	16.02%
	Buy to Cover	10/18/2012 15:30	Buy to cover	$1.31	($283.00)	$4,999.00		($283.00)	0.00%
248	Sell Short	10/18/2012 19:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	67.91%
	Buy to Cover	10/19/2012 0:30	Profit Target	$1.31	$364.00	$5,353.00		($172.00)	100.00%
249	Sell Short	10/19/2012 1:30	Sell	$1.31	100000	$354.50	0.28%	$364.50	75.83%
	Buy to Cover	10/19/2012 20:30	Profit Target	$1.30	$364.50	$5,707.50		($115.50)	100.00%
250	Sell Short	10/19/2012 21:30	Sell	$1.30	100000	$7.60	0.01%	$174.00	84.06%
	Buy to Cover	10/22/2012 4:30	Buy to cover	$1.30	$17.60	$5,715.10		($33.00)	24.15%
251	Sell Short	10/22/2012 5:30	Sell	$1.30	100000	($357.00)	-0.27%	$117.00	23.31%
	Buy to Cover	10/22/2012 16:30	Buy to cover	$1.31	($347.00)	$5,358.10		($385.00)	7.57%
252	Buy	10/22/2012 17:30	Buy	$1.31	100000	($209.30)	-0.15%	$124.00	29.74%
	Sell	10/23/2012 11:30	Sell to cover	$1.31	($199.30)	$5,148.80		($293.00)	22.78%
253	Sell Short	10/23/2012 12:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	99.45%
	Buy to Cover	10/23/2012 16:30	Profit Target	$1.30	$364.00	$5,502.80		($2.00)	100.00%
254	Sell Short	10/24/2012 2:29	Sell	$1.30	100000	$354.00	0.28%	$364.00	68.69%
	Buy to Cover	10/24/2012 14:30	Profit Target	$1.29	$364.00	$5,856.80		($163.00)	100.00%
255	Sell Short	10/24/2012 18:30	Sell	$1.29	100000	($380.00)	-0.29%	$56.00	13.15%
	Buy to Cover	10/24/2012 19:30	Buy to cover	$1.30	($370.00)	$5,476.80		($370.00)	0.00%
256	Sell Short	10/24/2012 20:30	Sell	$1.30	100000	$354.60	0.28%	$365.20	41.74%
	Buy to Cover	10/26/2012 2:29	Profit Target	$1.29	$364.60	$5,831.40		($507.40)	100.00%
257	Sell Short	10/26/2012 3:30	Sell	$1.29	100000	($237.00)	-0.18%	$28.00	10.98%
	Buy to Cover	10/26/2012 8:30	Buy to cover	$1.30	($227.00)	$5,594.40		($227.00)	0.00%
258	Sell Short	10/26/2012 9:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	96.04%

	Buy to Cover	10/26/2012 16:30	Profit Target	$1.29	$364.00	$5,948.40		($15.00)	100.00%
259	Sell Short	10/26/2012 19:30	Sell	$1.29	100000	($350.00)	-0.26%	$35.00	9.33%
	Buy to Cover	10/26/2012 20:30	Buy to cover	$1.29	($340.00)	$5,598.40		($340.00)	0.00%
260	Sell Short	10/26/2012 21:30	Sell	$1.29	100000	$354.70	0.28%	$364.70	73.09%
	Buy to Cover	10/29/2012 14:30	Profit Target	$1.29	$364.70	$5,953.10		($133.30)	100.00%
261	Sell Short	10/29/2012 15:30	Sell	$1.29	100000	($197.30)	-0.15%	$120.00	31.25%
	Buy to Cover	10/30/2012 6:30	Buy to cover	$1.29	($187.30)	$5,755.80		($264.00)	19.79%
262	Sell Short	10/30/2012 8:30	Sell	$1.29	100000	($86.00)	-0.06%	$244.00	76.25%
	Buy to Cover	10/30/2012 12:30	Buy to cover	$1.29	($76.00)	$5,669.80		($76.00)	0.00%
263	Buy	10/30/2012 13:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	99.73%
	Sell	10/30/2012 16:30	Profit Target	$1.30	$364.00	$6,023.80		($1.00)	100.00%
264	Buy	10/30/2012 17:30	Buy	$1.30	100000	$16.00	0.02%	$305.00	75.50%
	Sell	10/31/2012 2:29	Sell to cover	$1.30	$26.00	$6,039.80		($99.00)	30.94%
265	Buy	10/31/2012 3:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	82.35%
	Sell	10/31/2012 14:30	Profit Target	$1.30	$364.00	$6,393.80		($78.00)	100.00%
266	Buy	10/31/2012 20:30	Buy	$1.30	100000	($559.80)	-0.42%	$53.00	7.54%
	Sell	11/1/2012 23:30	Sell to cover	$1.29	($549.80)	$5,834.00		($651.80)	14.51%
267	Sell Short	11/2/2012 0:30	Sell	$1.29	100000	$354.80	0.28%	$364.80	67.78%
	Buy to Cover	11/2/2012 11:30	Profit Target	$1.29	$364.80	$6,188.80		($172.20)	100.00%
268	Sell Short	11/2/2012 13:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	98.11%
	Buy to Cover	11/2/2012 15:30	Profit Target	$1.29	$364.00	$6,542.80		($7.00)	100.00%
269	Sell Short	11/5/2012 6:30	Sell	$1.28	100000	($49.00)	-0.03%	$182.00	77.78%
	Buy to Cover	11/5/2012 11:30	Buy to cover	$1.28	($39.00)	$6,493.80		($52.00)	5.56%
270	Sell Short	11/5/2012 12:30	Sell	$1.28	100000	$354.00	0.28%	$364.00	90.55%
	Buy to Cover	11/5/2012 12:30	Profit Target	$1.28	$364.00	$6,847.80		($38.00)	100.00%
271	Sell Short	11/5/2012 16:30	Sell	$1.28	100000	($44.30)	-0.03%	$308.00	86.03%
	Buy to Cover	11/6/2012 4:30	Buy to cover	$1.28	($34.30)	$6,803.50		($50.00)	4.19%
272	Sell Short	11/6/2012 5:30	Sell	$1.28	100000	($11.00)	0.00%	$360.00	91.37%

	Buy to Cover	11/6/2012 15:30	Buy to cover	$1.28	($1.00)	$6,792.50		($34.00)	8.38%
273	Sell Short	11/6/2012 16:30	Sell	$1.28	100000	($274.70)	-0.21%	$212.00	40.69%
	Buy to Cover	11/7/2012 8:30	Buy to cover	$1.28	($264.70)	$6,517.80		($309.00)	7.87%
274	Buy	11/7/2012 9:30	Buy	$1.28	100000	$354.00	0.28%	$364.00	100.00%
	Sell	11/7/2012 9:30	Profit Target	$1.29	$364.00	$6,871.80		$0.00	100.00%
275	Buy	11/7/2012 10:30	Buy	$1.29	100000	($465.00)	-0.35%	$181.00	28.46%
	Sell	11/7/2012 16:30	Sell to cover	$1.28	($455.00)	$6,406.80		($455.00)	0.00%
276	Sell Short	11/7/2012 18:30	Sell	$1.28	100000	$354.60	0.29%	$364.60	65.70%
	Buy to Cover	11/8/2012 14:30	Profit Target	$1.27	$364.60	$6,761.40		($189.40)	100.00%
277	Sell Short	11/8/2012 15:30	Sell	$1.27	100000	($181.00)	-0.13%	$168.00	40.29%
	Buy to Cover	11/8/2012 23:30	Buy to cover	$1.28	($171.00)	$6,580.40		($249.00)	18.71%
278	Sell Short	11/9/2012 0:30	Sell	$1.28	100000	$354.60	0.29%	$364.60	48.86%
	Buy to Cover	11/9/2012 15:30	Profit Target	$1.27	$364.60	$6,935.00		($380.40)	100.00%
279	Sell Short	11/9/2012 16:30	Sell	$1.27	100000	($57.00)	-0.04%	$239.00	64.42%
	Buy to Cover	11/12/2012 3:30	Buy to cover	$1.27	($47.00)	$6,878.00		($132.00)	22.91%
280	Sell Short	11/12/2012 4:30	Sell	$1.27	100000	($162.00)	-0.12%	$186.00	44.93%
	Buy to Cover	11/12/2012 18:30	Buy to cover	$1.27	($152.00)	$6,716.00		($228.00)	18.36%
281	Sell Short	11/12/2012 20:30	Sell	$1.27	100000	$354.50	0.29%	$364.50	91.69%
	Buy to Cover	11/13/2012 6:30	Profit Target	$1.27	$364.50	$7,070.50		($33.00)	100.00%
282	Sell Short	11/13/2012 12:30	Sell	$1.27	100000	($97.00)	-0.07%	$273.00	75.83%
	Buy to Cover	11/13/2012 16:30	Buy to cover	$1.27	($87.00)	$6,973.50		($87.00)	0.00%
283	Sell Short	11/13/2012 19:30	Sell	$1.27	100000	($687.70)	-0.54%	$133.00	15.76%
	Buy to Cover	11/14/2012 23:30	Buy to cover	$1.28	($677.70)	$6,285.80		($708.70)	3.67%
284	Buy	11/15/2012 0:30	Buy	$1.28	100000	($207.30)	-0.15%	$291.00	59.75%
	Sell	11/15/2012 4:30	Sell to cover	$1.27	($197.30)	$6,078.50		($197.30)	0.00%
285	Sell Short	11/15/2012 6:30	Sell	$1.27	100000	($365.00)	-0.28%	$10.00	2.74%
	Buy to Cover	11/15/2012 14:30	Buy to cover	$1.28	($355.00)	$5,713.50		($355.00)	0.00%
286	Buy	11/15/2012 15:30	Buy	$1.28	100000	$354.00	0.29%	$364.00	74.44%
	Sell	11/15/2012	Profit	$1.28	$364.00	$6,067.50		($125.00)	100.00%

		20:30	Target						
287	Buy	11/15/2012 22:30	Buy	$1.28	100000	($174.30)	-0.13%	$28.70	12.24%
	Sell	11/16/2012 8:30	Sell to cover	$1.28	($164.30)	$5,893.20		($215.00)	21.22%
288	Buy	11/16/2012 9:30	Buy	$1.28	100000	($112.30)	-0.08%	$145.70	15.24%
	Sell	11/19/2012 17:30	Sell to cover	$1.28	($102.30)	$5,780.90		($823.00)	74.46%
289	Buy	11/19/2012 18:30	Buy	$1.28	100000	$354.00	0.29%	$364.00	88.78%
	Sell	11/19/2012 20:30	Profit Target	$1.28	$364.00	$6,134.90		($46.00)	100.00%
290	Buy	11/19/2012 22:30	Buy	$1.28	100000	($324.50)	-0.24%	$113.50	27.34%
	Sell	11/20/2012 3:30	Sell to cover	$1.28	($314.50)	$5,810.40		($314.50)	0.00%
291	Buy	11/20/2012 4:30	Buy	$1.28	100000	$354.00	0.28%	$364.00	69.60%
	Sell	11/20/2012 13:30	Profit Target	$1.28	$364.00	$6,164.40		($159.00)	100.00%
292	Buy	11/20/2012 14:30	Buy	$1.28	100000	$354.00	0.28%	$364.00	97.85%
	Sell	11/20/2012 15:30	Profit Target	$1.28	$364.00	$6,518.40		($8.00)	100.00%
293	Buy	11/20/2012 16:30	Buy	$1.28	100000	($45.30)	-0.02%	$190.00	43.78%
	Sell	11/21/2012 6:30	Sell to cover	$1.28	($35.30)	$6,473.10		($244.00)	48.85%
294	Buy	11/21/2012 7:30	Buy	$1.28	100000	$354.60	0.29%	$364.60	33.70%
	Sell	11/22/2012 4:30	Profit Target	$1.28	$364.60	$6,827.70		($720.00)	100.00%
295	Buy	11/22/2012 6:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	62.98%
	Sell	11/22/2012 17:30	Profit Target	$1.29	$364.00	$7,181.70		($214.00)	100.00%
296	Buy	11/22/2012 19:30	Buy	$1.29	100000	($181.00)	-0.13%	$72.00	29.63%
	Sell	11/22/2012 21:30	Sell to cover	$1.29	($171.00)	$7,000.70		($171.00)	0.00%
297	Buy	11/22/2012 22:30	Buy	$1.29	100000	$354.50	0.28%	$364.50	69.85%
	Sell	11/23/2012 12:30	Profit Target	$1.29	$364.50	$7,355.20		($158.00)	100.00%
298	Buy	11/23/2012 13:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	53.77%
	Sell	11/23/2012 19:30	Profit Target	$1.29	$364.00	$7,709.20		($313.00)	100.00%
299	Buy	11/26/2012 5:30	Buy	$1.30	100000	$40.60	0.04%	$360.60	55.86%
	Sell	11/27/2012 13:30	Sell to cover	$1.30	$50.60	$7,749.80		($286.00)	52.16%

300	Buy	11/27/2012 14:30	Buy	$1.30	100000	($589.20)	-0.44%	$31.00	4.76%
	Sell	11/28/2012 11:30	Sell to cover	$1.29	($579.20)	$7,160.60		($620.00)	6.91%
301	Sell Short	11/28/2012 12:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	65.23%
	Buy to Cover	11/28/2012 20:30	Profit Target	$1.29	$364.00	$7,514.60		($194.00)	100.00%
302	Sell Short	11/28/2012 21:30	Sell	$1.29	100000	($851.50)	-0.65%	$26.00	2.43%
	Buy to Cover	11/30/2012 7:30	Buy to cover	$1.30	($841.50)	$6,663.10		($1,045.00)	18.95%
303	Buy	11/30/2012 8:30	Buy	$1.30	100000	($214.00)	-0.16%	$319.00	60.99%
	Sell	11/30/2012 18:30	Sell to cover	$1.30	($204.00)	$6,449.10		($204.00)	0.00%
304	Buy	11/30/2012 20:30	Buy	$1.30	100000	$354.60	0.28%	$364.60	72.76%
	Sell	12/3/2012 6:30	Profit Target	$1.30	$364.60	$6,803.70		($137.00)	100.00%
305	Buy	12/3/2012 7:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	67.28%
	Sell	12/3/2012 17:30	Profit Target	$1.31	$364.00	$7,157.70		($177.00)	100.00%
306	Buy	12/3/2012 18:30	Buy	$1.31	100000	$354.50	0.28%	$364.50	59.61%
	Sell	12/4/2012 17:30	Profit Target	$1.31	$364.50	$7,512.20		($248.00)	100.00%
307	Buy	12/4/2012 18:30	Buy	$1.31	100000	($157.00)	-0.11%	$138.00	48.42%
	Sell	12/4/2012 20:30	Sell to cover	$1.31	($147.00)	$7,355.20		($147.00)	0.00%
308	Buy	12/4/2012 21:30	Buy	$1.31	100000	$354.80	0.28%	$364.80	74.65%
	Sell	12/5/2012 9:30	Profit Target	$1.31	$364.80	$7,710.00		($125.00)	100.00%
309	Buy	12/5/2012 11:30	Buy	$1.31	100000	($145.00)	-0.10%	$189.00	58.33%
	Sell	12/5/2012 14:30	Sell to cover	$1.31	($135.00)	$7,565.00		($135.00)	0.00%
310	Sell Short	12/5/2012 17:30	Sell	$1.31	100000	$150.50	0.12%	$332.50	73.61%
	Buy to Cover	12/6/2012 11:30	Buy to cover	$1.31	$160.50	$7,715.50		($119.00)	61.86%
311	Sell Short	12/6/2012 12:30	Sell	$1.31	100000	($68.00)	-0.04%	$155.00	72.77%
	Buy to Cover	12/6/2012 13:30	Buy to cover	$1.31	($58.00)	$7,647.50		($58.00)	0.00%
312	Sell Short	12/6/2012 14:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	63.97%
	Buy to Cover	12/6/2012 18:30	Profit Target	$1.30	$364.00	$8,001.50		($205.00)	100.00%
313	Sell Short	12/6/2012 19:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	88.14%
	Buy to Cover	12/6/2012 20:30	Profit Target	$1.30	$364.00	$8,355.50		($49.00)	100.00%
314	Sell Short	12/7/2012 6:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	84.45%

	Buy to Cover	12/7/2012 12:30	Profit Target	$1.29	$364.00	$8,709.50		($67.00)	100.00%
315	Sell Short	12/7/2012 15:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	96.04%
	Buy to Cover	12/7/2012 17:30	Profit Target	$1.29	$364.00	$9,063.50		($15.00)	100.00%
316	Sell Short	12/7/2012 21:30	Sell	$1.29	100000	$361.00	0.29%	$371.50	60.33%
	Buy to Cover	12/10/2012 3:30	Profit Target	$1.29	$371.00	$9,424.50		($244.00)	100.00%
317	Sell Short	12/10/2012 4:30	Sell	$1.29	100000	($378.00)	-0.29%	$64.00	14.81%
	Buy to Cover	12/10/2012 18:30	Buy to cover	$1.29	($368.00)	$9,046.50		($368.00)	0.00%
318	Buy	12/10/2012 19:30	Buy	$1.29	100000	$354.80	0.28%	$364.80	72.33%
	Sell	12/11/2012 15:30	Profit Target	$1.30	$364.80	$9,401.30		($140.00)	100.00%
319	Buy	12/11/2012 16:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	100.00%
	Sell	12/11/2012 16:30	Profit Target	$1.30	$364.00	$9,755.30		$0.00	100.00%
320	Buy	12/11/2012 18:30	Buy	$1.30	100000	$155.70	0.13%	$308.00	94.48%
	Sell	12/12/2012 6:30	Sell to cover	$1.30	$165.70	$9,911.00		($18.00)	57.36%
321	Buy	12/12/2012 7:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	71.37%
	Sell	12/12/2012 17:30	Profit Target	$1.30	$364.00	$10,265.00		($146.00)	100.00%
322	Buy	12/12/2012 20:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	95.04%
	Sell	12/12/2012 22:30	Profit Target	$1.31	$364.00	$10,619.00		($19.00)	100.00%
323	Buy	12/13/2012 2:29	Buy	$1.31	100000	$2.70	0.01%	$131.70	100.00%
	Sell	12/13/2012 6:30	Sell to cover	$1.31	$12.70	$10,621.70		($1.30)	10.53%
324	Buy	12/13/2012 7:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	92.15%
	Sell	12/13/2012 13:30	Profit Target	$1.31	$364.00	$10,975.70		($31.00)	100.00%
325	Buy	12/13/2012 14:30	Buy	$1.31	100000	$354.60	0.28%	$364.60	60.40%
	Sell	12/14/2012 11:30	Profit Target	$1.31	$364.60	$11,330.30		($240.00)	100.00%
326	Buy	12/14/2012 12:30	Buy	$1.31	100000	($385.00)	-0.29%	$96.00	18.68%
	Sell	12/14/2012 18:30	Sell to cover	$1.31	($375.00)	$10,945.30		($418.00)	8.37%
327	Buy	12/14/2012 20:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	91.46%
	Sell	12/14/2012 21:30	Profit Target	$1.31	$364.00	$11,299.30		($34.00)	100.00%

328	Buy	12/14/2012 22:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	98.64%
	Sell	12/14/2012 22:30	Profit Target	$1.32	$364.00	$11,653.30		($5.00)	100.00%
329	Buy	12/17/2012 5:30	Buy	$1.32	100000	($111.00)	-0.08%	$130.00	37.36%
	Sell	12/18/2012 0:30	Sell to cover	$1.32	($101.00)	$11,542.30		($218.00)	33.62%
330	Buy	12/18/2012 1:30	Buy	$1.32	100000	$354.50	0.28%	$364.50	88.62%
	Sell	12/18/2012 20:30	Profit Target	$1.32	$364.50	$11,896.80		($48.50)	100.00%
331	Buy	12/19/2012 1:30	Buy	$1.32	100000	$168.50	0.14%	$358.50	97.06%
	Sell	12/19/2012 12:30	Sell to cover	$1.32	$178.50	$12,065.30		($11.00)	51.87%
332	Buy	12/19/2012 13:30	Buy	$1.32	100000	$354.00	0.27%	$364.00	75.99%
	Sell	12/19/2012 15:30	Profit Target	$1.33	$364.00	$12,419.30		($115.00)	100.00%
333	Buy	12/19/2012 21:30	Buy	$1.33	100000	($376.20)	-0.27%	$361.80	34.55%
	Sell	12/20/2012 21:30	Sell to cover	$1.32	($366.20)	$12,043.10		($703.20)	31.64%
334	Buy	12/20/2012 23:30	Buy	$1.32	100000	($363.60)	-0.25%	$126.50	13.77%
	Sell	12/24/2012 20:30	Sell to cover	$1.32	($353.60)	$11,679.50		($810.50)	50.37%
335	Sell Short	12/24/2012 23:30	Sell	$1.32	100000	($101.70)	-0.07%	$173.30	65.28%
	Buy to Cover	12/26/2012 12:30	Buy to cover	$1.32	($91.70)	$11,577.80		($91.70)	0.00%
336	Buy	12/26/2012 14:30	Buy	$1.32	100000	$354.00	0.28%	$364.00	79.13%
	Sell	12/26/2012 19:30	Profit Target	$1.32	$364.00	$11,931.80		($96.00)	100.00%
337	Buy	12/26/2012 21:30	Buy	$1.32	100000	($67.70)	-0.03%	$107.00	62.94%
	Sell	12/27/2012 3:30	Sell to cover	$1.32	($57.70)	$11,864.10		($63.00)	17.06%
338	Buy	12/27/2012 4:30	Buy	$1.32	100000	$354.00	0.28%	$364.00	95.54%
	Sell	12/27/2012 13:30	Profit Target	$1.33	$364.00	$12,218.10		($17.00)	100.00%
339	Buy	12/27/2012 16:30	Buy	$1.33	100000	($250.00)	-0.18%	$177.00	42.45%
	Sell	12/27/2012 20:30	Sell to cover	$1.32	($240.00)	$11,968.10		($240.00)	0.00%
340	Sell Short	12/27/2012 23:30	Sell	$1.32	100000	($389.10)	-0.29%	$18.00	4.01%
	Buy to Cover	12/28/2012 11:30	Buy to cover	$1.32	($379.10)	$11,579.00		($430.10)	11.36%

341	Buy	12/28/2012 12:30	Buy	$1.32	100000	($429.00)	-0.32%	$80.00	16.03%
	Sell	12/28/2012 14:30	Sell to cover	$1.32	($419.00)	$11,150.00		($419.00)	0.00%
342	Sell Short	12/28/2012 15:30	Sell	$1.32	100000	($372.60)	-0.28%	$215.00	29.78%
	Buy to Cover	12/31/2012 4:30	Buy to cover	$1.32	($362.60)	$10,777.40		($507.00)	19.94%
343	Buy	12/31/2012 6:30	Buy	$1.32	100000	($462.00)	-0.34%	$34.00	7.00%
	Sell	12/31/2012 12:30	Sell to cover	$1.32	($452.00)	$10,315.40		($452.00)	0.00%
344	Sell Short	12/31/2012 13:30	Sell	$1.32	100000	($308.00)	-0.23%	$188.00	38.68%
	Buy to Cover	12/31/2012 18:30	Buy to cover	$1.32	($298.00)	$10,007.40		($298.00)	0.00%
345	Sell Short	12/31/2012 21:30	Sell	$1.32	100000	($387.30)	-0.29%	$77.00	16.63%
	Buy to Cover	1/2/2013 6:30	Buy to cover	$1.32	($377.30)	$9,620.10		($383.30)	1.30%
346	Buy	1/2/2013 10:30	Buy	$1.33	100000	($315.00)	-0.23%	$339.00	52.64%
	Sell	1/2/2013 21:30	Sell to cover	$1.32	($305.00)	$9,305.10		($305.00)	0.00%
347	Sell Short	1/2/2013 22:30	Sell	$1.32	100000	$354.00	0.28%	$364.00	100.00%
	Buy to Cover	1/2/2013 22:30	Profit Target	$1.32	$364.00	$9,659.10		$0.00	100.00%
348	Sell Short	1/2/2013 23:30	Sell	$1.32	100000	$354.80	0.28%	$364.80	61.80%
	Buy to Cover	1/3/2013 7:30	Profit Target	$1.31	$364.80	$10,013.90		($224.20)	100.00%
349	Sell Short	1/3/2013 9:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	53.85%
	Buy to Cover	1/3/2013 15:30	Profit Target	$1.31	$364.00	$10,367.90		($312.00)	100.00%
350	Sell Short	1/3/2013 16:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	59.77%
	Buy to Cover	1/4/2013 0:30	Profit Target	$1.31	$364.00	$10,721.90		($245.00)	100.00%
351	Sell Short	1/4/2013 1:30	Sell	$1.31	100000	$354.80	0.28%	$364.80	91.46%
	Buy to Cover	1/4/2013 3:30	Profit Target	$1.30	$364.80	$11,076.70		($34.00)	100.00%
352	Sell Short	1/4/2013 7:30	Sell	$1.30	100000	($31.00)	-0.02%	$155.00	88.07%
	Buy to Cover	1/4/2013 10:30	Buy to cover	$1.30	($21.00)	$11,045.70		($21.00)	0.00%
353	Sell Short	1/4/2013 11:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	83.11%
	Buy to Cover	1/4/2013 13:30	Profit Target	$1.30	$364.00	$11,399.70		($74.00)	100.00%
354	Sell Short	1/4/2013 14:30	Sell	$1.30	100000	($228.00)	-0.17%	$169.00	43.67%
	Buy to Cover	1/4/2013 18:30	Buy to cover	$1.30	($218.00)	$11,171.70		($218.00)	0.00%
355	Sell Short	1/4/2013 19:30	Sell	$1.30	100000	($200.20)	-0.15%	$245.80	33.75%

	Buy to Cover	1/7/2013 18:30	Buy to cover	$1.31	($190.20)	$10,971.50		($481.00)	39.94%
356	Buy	1/7/2013 20:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	92.86%
	Sell	1/7/2013 20:30	Profit Target	$1.31	$364.00	$11,325.50		($28.00)	100.00%
357	Buy	1/7/2013 21:30	Buy	$1.31	100000	$354.70	0.28%	$364.70	92.89%
	Sell	1/8/2013 7:30	Profit Target	$1.31	$364.70	$11,680.20		($28.00)	100.00%
358	Buy	1/8/2013 8:30	Buy	$1.31	100000	($165.00)	-0.12%	$45.00	22.50%
	Sell	1/8/2013 11:30	Sell to cover	$1.31	($155.00)	$11,515.20		($155.00)	0.00%
359	Buy	1/8/2013 12:30	Buy	$1.31	100000	($486.50)	-0.36%	$165.00	21.77%
	Sell	1/9/2013 13:30	Sell to cover	$1.31	($476.50)	$11,028.70		($593.00)	15.83%
360	Sell Short	1/9/2013 15:30	Sell	$1.31	100000	($105.00)	-0.07%	$317.00	76.94%
	Buy to Cover	1/9/2013 21:30	Buy to cover	$1.31	($95.00)	$10,923.70		($95.00)	0.00%
361	Sell Short	1/9/2013 23:30	Sell	$1.31	100000	($25.30)	-0.01%	$301.70	94.95%
	Buy to Cover	1/10/2013 12:30	Buy to cover	$1.31	($15.30)	$10,898.40		($15.30)	0.00%
362	Buy	1/10/2013 14:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	97.85%
	Sell	1/10/2013 14:30	Profit Target	$1.31	$364.00	$11,252.40		($8.00)	100.00%
363	Buy	1/10/2013 15:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	79.13%
	Sell	1/10/2013 18:30	Profit Target	$1.31	$364.00	$11,606.40		($96.00)	100.00%
364	Buy	1/11/2013 12:30	Buy	$1.33	100000	$14.00	0.02%	$321.00	100.00%
	Sell	1/11/2013 16:30	Sell to cover	$1.33	$24.00	$11,620.40		$0.00	7.48%
365	Buy	1/11/2013 17:30	Buy	$1.33	100000	$354.00	0.27%	$364.00	90.77%
	Sell	1/11/2013 18:30	Profit Target	$1.33	$364.00	$11,974.40		($37.00)	100.00%
366	Buy	1/12/2013 1:30	Buy	$1.33	100000	$354.70	0.27%	$364.70	81.70%
	Sell	1/14/2013 6:30	Profit Target	$1.34	$364.70	$12,329.10		($82.00)	100.00%
367	Buy	1/14/2013 12:30	Buy	$1.34	100000	($233.00)	-0.17%	$55.00	19.78%
	Sell	1/14/2013 13:30	Sell to cover	$1.34	($223.00)	$12,096.10		($223.00)	0.00%
368	Buy	1/14/2013 14:30	Buy	$1.34	100000	$354.00	0.27%	$364.00	62.76%
	Sell	1/15/2013 1:30	Profit Target	$1.34	$364.00	$12,450.10		($216.00)	100.00%
369	Buy	1/15/2013 2:29	Buy	$1.34	100000	($325.30)	-0.23%	$91.70	22.85%
	Sell	1/15/2013 9:30	Sell to cover	$1.34	($315.30)	$12,124.80		($315.30)	0.00%
370	Sell Short	1/15/2013 10:30	Sell	$1.34	100000	($286.00)	-0.21%	$227.00	45.13%
	Buy to	1/15/2013 14:30	Buy to	$1.34	($276.00)	$11,838.80		($276.00)	0.00%

	Cover		cover						
371	Buy	1/15/2013 15:30	Buy	$1.34	100000	($464.00)	-0.34%	$58.00	11.33%
	Sell	1/15/2013 16:30	Sell to cover	$1.33	($454.00)	$11,374.80		($454.00)	0.00%
372	Sell Short	1/15/2013 17:30	Sell	$1.33	100000	$354.00	0.27%	$364.00	98.11%
	Buy to Cover	1/15/2013 17:30	Profit Target	$1.33	$364.00	$11,728.80		($7.00)	100.00%
373	Sell Short	1/15/2013 18:30	Sell	$1.33	100000	$354.00	0.27%	$364.00	50.21%
	Buy to Cover	1/15/2013 23:30	Profit Target	$1.33	$364.00	$12,082.80		($361.00)	100.00%
374	Sell Short	1/16/2013 0:30	Sell	$1.33	100000	($154.90)	-0.11%	$255.10	44.29%
	Buy to Cover	1/16/2013 15:30	Buy to cover	$1.33	($144.90)	$11,927.90		($317.00)	29.70%
375	Sell Short	1/16/2013 17:30	Sell	$1.33	100000	$354.00	0.27%	$364.00	82.73%
	Buy to Cover	1/16/2013 17:30	Profit Target	$1.33	$364.00	$12,281.90		($76.00)	100.00%
376	Sell Short	1/16/2013 18:30	Sell	$1.33	100000	($499.40)	-0.37%	$43.00	7.90%
	Buy to Cover	1/17/2013 6:30	Buy to cover	$1.33	($489.40)	$11,782.50		($501.00)	2.02%
377	Buy	1/17/2013 7:30	Buy	$1.33	100000	$354.00	0.27%	$364.00	47.27%
	Sell	1/17/2013 13:30	Profit Target	$1.33	$364.00	$12,136.50		($406.00)	100.00%
378	Buy	1/17/2013 14:30	Buy	$1.33	100000	$354.00	0.27%	$364.00	79.30%
	Sell	1/17/2013 17:30	Profit Target	$1.34	$364.00	$12,490.50		($95.00)	100.00%
379	Buy	1/17/2013 18:30	Buy	$1.34	100000	($2.40)	0.01%	$199.00	37.06%
	Sell	1/18/2013 6:30	Sell to cover	$1.34	$7.60	$12,488.10		($338.00)	64.62%
380	Buy	1/18/2013 7:30	Buy	$1.34	100000	($25.00)	-0.01%	$268.00	73.42%
	Sell	1/18/2013 13:30	Sell to cover	$1.34	($15.00)	$12,463.10		($97.00)	22.47%
381	Buy	1/18/2013 14:30	Buy	$1.34	100000	($543.20)	-0.40%	$73.00	8.08%
	Sell	1/22/2013 2:29	Sell to cover	$1.33	($533.20)	$11,919.90		($831.00)	33.19%
382	Sell Short	1/22/2013 3:30	Sell	$1.33	100000	($142.00)	-0.10%	$138.00	51.11%
	Buy to Cover	1/22/2013 8:30	Buy to cover	$1.33	($132.00)	$11,777.90		($132.00)	0.00%
383	Buy	1/22/2013 9:30	Buy	$1.33	100000	$354.00	0.27%	$364.00	100.00%
	Sell	1/22/2013 11:30	Profit Target	$1.34	$364.00	$12,131.90		$0.00	100.00%
384	Buy	1/22/2013 14:30	Buy	$1.33	100000	($423.20)	-0.31%	$278.00	27.63%
	Sell	1/23/2013 11:30	Sell to cover	$1.33	($413.20)	$11,708.70		($728.00)	31.61%
385	Sell Short	1/23/2013 12:30	Sell	$1.33	100000	($462.00)	-0.34%	$153.00	25.29%
	Buy to Cover	1/23/2013 17:30	Buy to cover	$1.33	($452.00)	$11,246.70		($452.00)	0.00%

386	Buy	1/23/2013 18:30	Buy	$1.33	100000	($491.00)	-0.36%	$99.00	17.07%
	Sell	1/23/2013 20:30	Sell to cover	$1.33	($481.00)	$10,755.70		($481.00)	0.00%
387	Sell Short	1/23/2013 21:30	Sell	$1.33	100000	($502.50)	-0.37%	$52.00	9.54%
	Buy to Cover	1/24/2013 11:30	Buy to cover	$1.33	($492.50)	$10,253.20		($492.50)	0.00%
388	Buy	1/24/2013 12:30	Buy	$1.33	100000	$354.00	0.27%	$364.00	39.06%
	Sell	1/24/2013 21:30	Profit Target	$1.34	$364.00	$10,607.20		($568.00)	100.00%
389	Buy	1/24/2013 22:30	Buy	$1.34	100000	($150.20)	-0.10%	$42.80	24.04%
	Sell	1/25/2013 6:30	Sell to cover	$1.34	($140.20)	$10,457.00		($140.20)	0.00%
390	Buy	1/25/2013 7:30	Buy	$1.34	100000	$354.00	0.27%	$364.00	80.89%
	Sell	1/25/2013 12:30	Profit Target	$1.34	$364.00	$10,811.00		($86.00)	100.00%
391	Buy	1/25/2013 16:30	Buy	$1.34	100000	$354.00	0.27%	$364.00	84.45%
	Sell	1/25/2013 16:30	Profit Target	$1.35	$364.00	$11,165.00		($67.00)	100.00%
392	Buy	1/25/2013 17:30	Buy	$1.34	100000	$354.00	0.27%	$364.00	100.00%
	Sell	1/25/2013 18:30	Profit Target	$1.35	$364.00	$11,519.00		$0.00	100.00%
393	Buy	1/25/2013 22:30	Buy	$1.35	100000	($13.00)	0.00%	$156.00	77.23%
	Sell	1/26/2013 2:29	Sell to cover	$1.35	($3.00)	$11,506.00		($46.00)	21.29%
394	Buy	1/28/2013 3:30	Buy	$1.35	100000	($225.00)	-0.16%	$120.00	22.90%
	Sell	1/29/2013 6:30	Sell to cover	$1.34	($215.00)	$11,281.00		($404.00)	36.07%
395	Sell Short	1/29/2013 7:30	Sell	$1.34	100000	($46.00)	-0.03%	$327.00	70.63%
	Buy to Cover	1/29/2013 19:30	Buy to cover	$1.34	($36.00)	$11,235.00		($136.00)	21.60%
396	Buy	1/29/2013 20:30	Buy	$1.35	100000	$354.80	0.27%	$364.80	63.23%
	Sell	1/30/2013 14:30	Profit Target	$1.35	$364.80	$11,589.80		($214.00)	100.00%
397	Buy	1/30/2013 19:30	Buy	$1.35	100000	$354.00	0.27%	$364.00	91.92%
	Sell	1/30/2013 20:30	Profit Target	$1.36	$364.00	$11,943.80		($32.00)	100.00%
398	Buy	1/31/2013 2:29	Buy	$1.36	100000	($38.10)	-0.02%	$39.90	60.29%
	Sell	1/31/2013 3:30	Sell to cover	$1.36	($28.10)	$11,905.70		($28.10)	0.00%
399	Buy	1/31/2013 7:30	Buy	$1.36	100000	($34.00)	-0.02%	$199.00	89.24%
	Sell	1/31/2013 11:30	Sell to cover	$1.36	($24.00)	$11,871.70		($24.00)	0.00%
400	Buy	1/31/2013 12:30	Buy	$1.36	100000	$354.00	0.27%	$364.00	69.87%
	Sell	1/31/2013 20:30	Profit Target	$1.36	$364.00	$12,225.70		($157.00)	100.00%
401	Buy	1/31/2013 21:30	Buy	$1.36	100000	$354.80	0.27%	$364.80	84.92%

	Sell	2/1/2013 4:30	Profit Target	$1.36	$364.80	$12,580.50		($65.00)	100.00%
402	Buy	2/1/2013 8:30	Buy	$1.36	100000	$354.00	0.27%	$364.00	93.33%
	Sell	2/1/2013 13:30	Profit Target	$1.36	$364.00	$12,934.50		($26.00)	100.00%
403	Buy	2/1/2013 17:30	Buy	$1.36	100000	($45.00)	-0.03%	$334.00	90.51%
	Sell	2/1/2013 18:30	Sell to cover	$1.36	($35.00)	$12,889.50		($35.00)	0.00%
404	Buy	2/1/2013 19:30	Buy	$1.37	100000	$354.00	0.27%	$364.00	33.80%
	Sell	2/1/2013 20:30	Profit Target	$1.37	$364.00	$13,243.50		($713.00)	100.00%
405	Buy	2/1/2013 21:30	Buy	$1.37	100000	($715.30)	-0.51%	$157.00	18.23%
	Sell	2/4/2013 7:30	Sell to cover	$1.36	($705.30)	$12,528.20		($705.30)	0.00%
406	Sell Short	2/4/2013 8:30	Sell	$1.36	100000	$354.00	0.27%	$364.00	73.68%
	Buy to Cover	2/4/2013 14:30	Profit Target	$1.36	$364.00	$12,882.20		($130.00)	100.00%
407	Sell Short	2/4/2013 15:30	Sell	$1.36	100000	$354.00	0.27%	$364.00	85.05%
	Buy to Cover	2/4/2013 18:30	Profit Target	$1.35	$364.00	$13,236.20		($64.00)	100.00%
408	Sell Short	2/4/2013 19:30	Sell	$1.36	100000	$354.00	0.27%	$364.00	78.62%
	Buy to Cover	2/4/2013 21:30	Profit Target	$1.35	$364.00	$13,590.20		($99.00)	100.00%
409	Sell Short	2/4/2013 23:30	Sell	$1.35	100000	$354.60	0.27%	$364.60	95.29%
	Buy to Cover	2/5/2013 5:30	Profit Target	$1.35	$364.60	$13,944.80		($18.00)	100.00%
410	Sell Short	2/5/2013 7:30	Sell	$1.35	100000	$354.00	0.27%	$364.00	96.55%
	Buy to Cover	2/5/2013 11:30	Profit Target	$1.35	$364.00	$14,298.80		($13.00)	100.00%
411	Sell Short	2/5/2013 14:30	Sell	$1.35	100000	($107.90)	-0.07%	$359.10	34.36%
	Buy to Cover	2/6/2013 20:30	Buy to cover	$1.35	($97.90)	$14,190.90		($682.00)	56.02%
412	Sell Short	2/6/2013 21:30	Sell	$1.35	100000	($41.50)	-0.02%	$341.50	89.27%
	Buy to Cover	2/7/2013 12:30	Buy to cover	$1.35	($31.50)	$14,149.40		($41.00)	2.36%
413	Buy	2/7/2013 14:30	Buy	$1.36	100000	($468.00)	-0.34%	$120.00	20.76%
	Sell	2/7/2013 18:30	Sell to cover	$1.35	($458.00)	$13,681.40		($458.00)	0.00%
414	Sell Short	2/7/2013 19:30	Sell	$1.35	100000	$354.00	0.27%	$364.00	73.83%
	Buy to Cover	2/7/2013 19:30	Profit Target	$1.34	$364.00	$14,035.40		($129.00)	100.00%
415	Sell Short	2/8/2013 6:30	Sell	$1.34	100000	$354.00	0.27%	$364.00	52.22%
	Buy to Cover	2/8/2013 22:30	Profit Target	$1.34	$364.00	$14,389.40		($333.00)	100.00%
416	Sell Short	2/9/2013 0:30	Sell	$1.34	100000	($192.50)	-0.14%	$25.00	12.02%
	Buy to	2/11/2013 6:30	Buy to	$1.34	($182.50)	$14,196.90		($182.50)	0.00%

	Cover		cover						
417	Sell Short	2/11/2013 7:30	Sell	$1.34	100000	($196.00)	-0.14%	$147.00	43.36%
	Buy to Cover	2/11/2013 14:30	Buy to cover	$1.34	($186.00)	$14,000.90		($192.00)	1.77%
418	Buy	2/11/2013 15:30	Buy	$1.34	100000	($316.00)	-0.23%	$149.00	32.75%
	Sell	2/11/2013 19:30	Sell to cover	$1.34	($306.00)	$13,684.90		($306.00)	0.00%
419	Sell Short	2/11/2013 21:30	Sell	$1.34	100000	($436.50)	-0.32%	$147.50	23.19%
	Buy to Cover	2/12/2013 15:30	Buy to cover	$1.34	($426.50)	$13,248.40		($487.00)	9.46%
420	Buy	2/12/2013 16:30	Buy	$1.34	100000	$354.00	0.27%	$364.00	58.24%
	Sell	2/12/2013 20:30	Profit Target	$1.35	$364.00	$13,602.40		($261.00)	100.00%
421	Buy	2/12/2013 21:30	Buy	$1.35	100000	$354.90	0.27%	$364.90	58.66%
	Sell	2/13/2013 17:30	Profit Target	$1.35	$364.90	$13,957.30		($264.10)	100.00%
422	Buy	2/13/2013 18:30	Buy	$1.35	100000	($244.00)	-0.17%	$85.00	26.65%
	Sell	2/13/2013 20:30	Sell to cover	$1.35	($234.00)	$13,713.30		($234.00)	0.00%
423	Sell Short	2/14/2013 0:30	Sell	$1.34	100000	$354.50	0.27%	$364.50	83.68%
	Buy to Cover	2/14/2013 12:30	Profit Target	$1.34	$364.50	$14,067.80		($70.50)	100.00%
424	Sell Short	2/14/2013 14:30	Sell	$1.34	100000	$354.00	0.27%	$364.00	97.85%
	Buy to Cover	2/14/2013 14:30	Profit Target	$1.34	$364.00	$14,421.80		($8.00)	100.00%
425	Sell Short	2/14/2013 20:30	Sell	$1.33	100000	($177.00)	-0.13%	$227.00	57.61%
	Buy to Cover	2/15/2013 1:30	Buy to cover	$1.34	($167.00)	$14,244.80		($167.00)	0.00%
426	Sell Short	2/15/2013 2:29	Sell	$1.34	100000	$354.50	0.27%	$364.50	50.98%
	Buy to Cover	2/15/2013 13:30	Profit Target	$1.33	$364.50	$14,599.30		($349.50)	100.00%
427	Sell Short	2/15/2013 14:30	Sell	$1.33	100000	($327.00)	-0.24%	$273.00	39.34%
	Buy to Cover	2/16/2013 2:29	Buy to cover	$1.34	($317.00)	$14,272.30		($421.00)	14.99%
428	Buy	2/18/2013 3:30	Buy	$1.33	100000	($39.20)	-0.02%	$309.00	53.46%
	Sell	2/19/2013 5:30	Sell to cover	$1.33	($29.20)	$14,233.10		($269.00)	41.70%
429	Sell Short	2/19/2013 7:30	Sell	$1.33	100000	($231.00)	-0.17%	$185.00	45.57%
	Buy to Cover	2/19/2013 15:30	Buy to cover	$1.34	($221.00)	$14,002.10		($221.00)	0.00%
430	Sell Short	2/19/2013 16:30	Sell	$1.33	100000	$354.10	0.27%	$364.10	27.04%
	Buy to Cover	2/21/2013 0:30	Profit Target	$1.33	$364.10	$14,356.20		($974.90)	100.00%
431	Sell Short	2/21/2013 12:30	Sell	$1.33	100000	$354.00	0.27%	$364.00	74.44%
	Buy to Cover	2/21/2013 13:30	Profit Target	$1.32	$364.00	$14,710.20		($125.00)	100.00%

432	Sell Short	2/21/2013 21:30	Sell	$1.32	100000	$354.00	0.28%	$364.00	78.62%
	Buy to Cover	2/21/2013 23:30	Profit Target	$1.32	$364.00	$15,064.20		($99.00)	100.00%
433	Sell Short	2/22/2013 2:29	Sell	$1.32	100000	($139.50)	-0.10%	$23.50	15.03%
	Buy to Cover	2/22/2013 7:30	Buy to cover	$1.32	($129.50)	$14,924.70		($129.50)	0.00%
434	Sell Short	2/22/2013 8:30	Sell	$1.32	100000	$354.00	0.28%	$364.00	42.82%
	Buy to Cover	2/22/2013 16:30	Profit Target	$1.32	$364.00	$15,278.70		($486.00)	100.00%
435	Sell Short	2/22/2013 17:30	Sell	$1.32	100000	($418.00)	-0.31%	$239.00	36.94%
	Buy to Cover	2/25/2013 3:30	Buy to cover	$1.32	($408.00)	$14,860.70		($407.50)	0.00%
436	Sell Short	2/25/2013 4:30	Sell	$1.32	100000	$354.00	0.28%	$364.00	22.67%
	Buy to Cover	2/25/2013 23:30	Profit Target	$1.32	$364.00	$15,214.70		($1,242.00)	100.00%
437	Sell Short	2/26/2013 1:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	94.06%
	Buy to Cover	2/26/2013 1:30	Profit Target	$1.31	$364.00	$15,568.70		($23.00)	100.00%
438	Sell Short	2/26/2013 2:29	Sell	$1.31	100000	$354.50	0.28%	$364.50	54.01%
	Buy to Cover	2/26/2013 12:30	Profit Target	$1.30	$364.50	$15,923.20		($309.50)	100.00%
439	Sell Short	2/26/2013 13:30	Sell	$1.30	100000	($369.60)	-0.28%	$123.00	14.35%
	Buy to Cover	2/27/2013 12:30	Buy to cover	$1.31	($359.60)	$15,553.60		($734.00)	43.52%
440	Buy	2/27/2013 13:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	57.41%
	Sell	2/27/2013 20:30	Profit Target	$1.31	$364.00	$15,907.60		($270.00)	100.00%
441	Buy	2/27/2013 21:30	Buy	$1.31	100000	($266.00)	-0.20%	$11.00	4.12%
	Sell	2/27/2013 23:30	Sell to cover	$1.31	($256.00)	$15,641.60		($256.00)	0.00%
442	Buy	2/28/2013 0:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	100.00%
	Sell	2/28/2013 0:30	Profit Target	$1.31	$364.00	$15,995.60		$0.00	100.00%
443	Buy	2/28/2013 1:30	Buy	$1.31	100000	($46.30)	-0.03%	$352.70	90.54%
	Sell	2/28/2013 14:30	Sell to cover	$1.31	($36.30)	$15,949.30		($37.00)	0.51%
444	Sell Short	2/28/2013 17:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	64.88%
	Buy to Cover	2/28/2013 20:30	Profit Target	$1.31	$364.00	$16,303.30		($197.00)	100.00%
445	Sell Short	2/28/2013 21:30	Sell	$1.31	100000	($56.80)	-0.04%	$201.00	49.75%
	Buy to Cover	3/1/2013 10:30	Buy to cover	$1.31	($46.80)	$16,246.50		($203.00)	38.61%
446	Sell Short	3/1/2013 11:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	65.47%
	Buy to Cover	3/1/2013 14:30	Profit Target	$1.30	$364.00	$16,600.50		($192.00)	100.00%
447	Sell Short	3/1/2013 15:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	78.45%

	Buy to Cover	3/1/2013 17:30	Profit Target	$1.30	$364.00	$16,954.50		($100.00)	100.00%
448	Sell Short	3/1/2013 23:30	Sell	$1.30	100000	$354.00	0.28%	$364.20	99.18%
	Buy to Cover	3/4/2013 3:30	Profit Target	$1.30	$364.00	$17,308.50		($3.00)	100.00%
449	Sell Short	3/4/2013 4:30	Sell	$1.30	100000	($409.40)	-0.31%	$318.00	34.16%
	Buy to Cover	3/6/2013 5:30	Buy to cover	$1.31	($399.40)	$16,899.10		($612.80)	22.77%
450	Buy	3/6/2013 6:30	Buy	$1.31	100000	($234.00)	-0.17%	$84.00	27.27%
	Sell	3/6/2013 14:30	Sell to cover	$1.30	($224.00)	$16,665.10		($224.00)	0.00%
451	Sell Short	3/6/2013 16:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	69.33%
	Buy to Cover	3/6/2013 20:30	Profit Target	$1.30	$364.00	$17,019.10		($161.00)	100.00%
452	Sell Short	3/6/2013 21:30	Sell	$1.30	100000	$76.20	0.07%	$343.20	78.13%
	Buy to Cover	3/7/2013 7:30	Buy to cover	$1.30	$86.20	$17,095.30		($96.00)	41.46%
453	Sell Short	3/7/2013 8:30	Sell	$1.30	100000	($1,027.00)	-0.78%	$45.00	4.24%
	Buy to Cover	3/7/2013 19:30	Buy to cover	$1.31	##########	$16,068.30		($1,017.00)	0.00%
454	Buy	3/7/2013 21:30	Buy	$1.31	100000	$354.50	0.28%	$364.50	94.09%
	Sell	3/8/2013 15:30	Profit Target	$1.31	$364.50	$16,422.80		($24.50)	100.00%
455	Buy	3/8/2013 16:30	Buy	$1.31	100000	($335.00)	-0.25%	$73.00	18.34%
	Sell	3/8/2013 18:30	Sell to cover	$1.31	($325.00)	$16,087.80		($325.00)	0.00%
456	Sell Short	3/8/2013 19:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	91.23%
	Buy to Cover	3/8/2013 19:30	Profit Target	$1.30	$364.00	$16,441.80		($35.00)	100.00%
457	Sell Short	3/8/2013 22:30	Sell	$1.30	100000	($248.70)	-0.18%	$349.00	51.55%
	Buy to Cover	3/11/2013 22:30	Buy to cover	$1.30	($238.70)	$16,193.10		($327.70)	13.15%
458	Buy	3/11/2013 23:30	Buy	$1.30	100000	$354.00	0.28%	$362.70	96.30%
	Sell	3/12/2013 2:29	Profit Target	$1.31	$364.00	$16,547.10		($14.00)	100.00%
459	Buy	3/12/2013 3:30	Buy	$1.30	100000	($259.00)	-0.19%	$47.00	15.88%
	Sell	3/12/2013 12:30	Sell to cover	$1.30	($249.00)	$16,288.10		($249.00)	0.00%
460	Sell Short	3/12/2013 14:30	Sell	$1.30	100000	($332.00)	-0.25%	$144.00	30.90%
	Buy to Cover	3/12/2013 18:30	Buy to cover	$1.30	($322.00)	$15,956.10		($322.00)	0.00%
461	Buy	3/12/2013 20:30	Buy	$1.31	100000	($340.10)	-0.25%	$33.00	5.81%
	Sell	3/13/2013 14:30	Sell to cover	$1.30	($330.10)	$15,616.00		($535.00)	36.62%
462	Sell Short	3/13/2013 17:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	79.48%
	Buy to	3/13/2013 18:30	Profit	$1.30	$364.00	$15,970.00		($94.00)	100.00%

	Cover		Target						
463	Sell Short	3/13/2013 19:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	75.05%
	Buy to Cover	3/13/2013 19:30	Profit Target	$1.29	$364.00	$16,324.00		($121.00)	100.00%
464	Sell Short	3/13/2013 22:30	Sell	$1.29	100000	($151.10)	-0.11%	$50.00	18.18%
	Buy to Cover	3/14/2013 4:30	Buy to cover	$1.30	($141.10)	$16,172.90		($225.00)	30.55%
465	Sell Short	3/14/2013 5:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	59.57%
	Buy to Cover	3/14/2013 17:30	Profit Target	$1.29	$364.00	$16,526.90		($247.00)	100.00%
466	Sell Short	3/14/2013 18:30	Sell	$1.29	100000	($440.00)	-0.33%	$108.00	20.07%
	Buy to Cover	3/14/2013 20:30	Buy to cover	$1.30	($430.00)	$16,086.90		($430.00)	0.00%
467	Sell Short	3/14/2013 21:30	Sell	$1.30	100000	$505.20	0.40%	$514.80	25.72%
	Buy to Cover	3/18/2013 3:30	Profit Target	$1.29	$515.20	$16,592.10		($1,486.80)	100.00%
468	Sell Short	3/18/2013 7:30	Sell	$1.29	100000	($638.00)	-0.49%	$269.00	29.99%
	Buy to Cover	3/18/2013 14:30	Buy to cover	$1.30	($628.00)	$15,954.10		($628.00)	0.00%
469	Sell Short	3/18/2013 16:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	84.06%
	Buy to Cover	3/18/2013 19:30	Profit Target	$1.29	$364.00	$16,308.10		($69.00)	100.00%
470	Sell Short	3/18/2013 20:30	Sell	$1.29	100000	$354.60	0.28%	$364.60	37.40%
	Buy to Cover	3/19/2013 21:30	Profit Target	$1.29	$364.60	$16,662.70		($611.00)	100.00%
471	Sell Short	3/19/2013 22:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	76.79%
	Buy to Cover	3/19/2013 23:30	Profit Target	$1.29	$364.00	$17,016.70		($110.00)	100.00%
472	Sell Short	3/20/2013 0:30	Sell	$1.29	100000	($425.00)	-0.32%	$221.00	34.75%
	Buy to Cover	3/20/2013 1:30	Buy to cover	$1.29	($415.00)	$16,591.70		($415.00)	0.00%
473	Sell Short	3/20/2013 2:29	Sell	$1.29	100000	($403.00)	-0.31%	$314.80	25.78%
	Buy to Cover	3/21/2013 21:30	Buy to cover	$1.29	($393.00)	$16,188.70		($899.20)	41.68%
474	Sell Short	3/21/2013 23:30	Sell	$1.29	100000	($298.80)	-0.22%	$191.00	39.79%
	Buy to Cover	3/22/2013 15:30	Buy to cover	$1.29	($288.80)	$15,889.90		($288.80)	0.00%
475	Buy	3/22/2013 16:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	78.11%
	Sell	3/22/2013 20:30	Profit Target	$1.30	$364.00	$16,243.90		($102.00)	100.00%
476	Buy	3/23/2013 0:30	Buy	$1.30	100000	($318.00)	-0.24%	$345.00	52.83%
	Sell	3/25/2013 3:30	Sell to cover	$1.29	($308.00)	$15,925.90		($309.50)	0.00%
477	Buy	3/25/2013 4:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	98.91%
	Sell	3/25/2013 5:30	Profit Target	$1.30	$364.00	$16,279.90		($4.00)	100.00%

478	Buy	3/25/2013 6:30	Buy	$1.30	100000	($431.00)	-0.32%	$296.00	41.28%
	Sell	3/25/2013 18:30	Sell to cover	$1.30	($421.00)	$15,848.90		($421.00)	0.00%
479	Sell Short	3/25/2013 19:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	83.68%
	Buy to Cover	3/25/2013 20:30	Profit Target	$1.29	$364.00	$16,202.90		($71.00)	100.00%
480	Sell Short	3/26/2013 0:30	Sell	$1.29	100000	$2.60	0.01%	$346.00	100.00%
	Buy to Cover	3/26/2013 12:30	Buy to cover	$1.29	$12.60	$16,205.50		$0.00	2.60%
481	Sell Short	3/26/2013 13:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	87.50%
	Buy to Cover	3/26/2013 14:30	Profit Target	$1.28	$364.00	$16,559.50		($52.00)	100.00%
482	Sell Short	3/26/2013 15:30	Sell	$1.29	100000	$354.00	0.28%	$364.00	80.89%
	Buy to Cover	3/26/2013 20:30	Profit Target	$1.28	$364.00	$16,913.50		($86.00)	100.00%
483	Sell Short	3/26/2013 21:30	Sell	$1.29	100000	$354.40	0.28%	$364.40	66.18%
	Buy to Cover	3/27/2013 13:30	Profit Target	$1.28	$364.40	$17,267.90		($186.00)	100.00%
484	Sell Short	3/27/2013 14:30	Sell	$1.28	100000	$354.00	0.28%	$364.00	60.47%
	Buy to Cover	3/27/2013 16:30	Profit Target	$1.28	$364.00	$17,621.90		($238.00)	100.00%
485	Sell Short	3/27/2013 22:30	Sell	$1.28	100000	$8.00	0.01%	$179.00	68.32%
	Buy to Cover	3/28/2013 2:29	Buy to cover	$1.28	$18.00	$17,629.90		($83.00)	38.55%
486	Sell Short	3/28/2013 3:30	Sell	$1.28	100000	($324.00)	-0.25%	$233.00	39.29%
	Buy to Cover	3/28/2013 17:30	Buy to cover	$1.28	($314.00)	$17,305.90		($360.00)	7.76%
487	Buy	3/28/2013 18:30	Buy	$1.28	100000	$23.20	0.03%	$357.00	70.00%
	Sell	3/29/2013 5:30	Sell to cover	$1.28	$33.20	$17,329.10		($153.00)	36.86%
488	Buy	3/29/2013 6:30	Buy	$1.28	100000	($149.80)	-0.11%	$238.00	54.34%
	Sell	4/1/2013 6:30	Sell to cover	$1.28	($139.80)	$17,179.30		($200.00)	14.16%
489	Sell Short	4/1/2013 7:30	Sell	$1.28	100000	($211.00)	-0.16%	$208.00	50.86%
	Buy to Cover	4/1/2013 13:30	Buy to cover	$1.28	($201.00)	$16,968.30		($201.00)	0.00%
490	Buy	4/1/2013 16:30	Buy	$1.28	100000	$354.00	0.28%	$364.00	72.51%
	Sell	4/1/2013 20:30	Profit Target	$1.29	$364.00	$17,322.30		($138.00)	100.00%
491	Buy	4/1/2013 21:30	Buy	$1.28	100000	$101.90	0.09%	$304.90	81.82%
	Sell	4/2/2013 11:30	Sell to cover	$1.29	$111.90	$17,424.20		($69.10)	48.40%
492	Buy	4/2/2013 12:30	Buy	$1.29	100000	($605.00)	-0.46%	$182.00	23.42%
	Sell	4/3/2013 12:30	Sell to cover	$1.28	($595.00)	$16,819.20		($598.00)	0.39%
493	Sell Short	4/3/2013 13:30	Sell	$1.28	100000	($90.00)	-0.06%	$102.00	56.04%

	Buy to Cover	4/3/2013 14:30	Buy to cover	$1.28	($80.00)	$16,729.20		($80.00)	0.00%
494	Sell Short	4/3/2013 15:30	Sell	$1.28	100000	($91.60)	-0.06%	$332.40	40.99%
	Buy to Cover	4/4/2013 18:30	Buy to cover	$1.28	($81.60)	$16,637.60		($478.00)	48.89%
495	Buy	4/4/2013 22:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	89.22%
	Sell	4/4/2013 23:30	Profit Target	$1.29	$364.00	$16,991.60		($44.00)	100.00%
496	Buy	4/5/2013 5:30	Buy	$1.29	100000	($234.00)	-0.17%	$108.00	32.53%
	Sell	4/5/2013 13:30	Sell to cover	$1.29	($224.00)	$16,757.60		($224.00)	0.00%
497	Buy	4/5/2013 14:30	Buy	$1.29	100000	$354.00	0.28%	$364.00	83.87%
	Sell	4/5/2013 18:30	Profit Target	$1.29	$364.00	$17,111.60		($70.00)	100.00%
498	Buy	4/8/2013 3:30	Buy	$1.30	100000	($178.00)	-0.13%	$194.00	53.59%
	Sell	4/8/2013 12:30	Sell to cover	$1.30	($168.00)	$16,933.60		($168.00)	0.00%
499	Buy	4/8/2013 13:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	90.32%
	Sell	4/8/2013 16:30	Profit Target	$1.30	$364.00	$17,287.60		($39.00)	100.00%
500	Buy	4/8/2013 17:30	Buy	$1.30	100000	$354.60	0.28%	$364.60	53.90%
	Sell	4/9/2013 6:30	Profit Target	$1.31	$364.60	$17,642.20		($313.00)	100.00%
501	Buy	4/9/2013 9:30	Buy	$1.31	100000	($499.00)	-0.37%	$18.00	3.55%
	Sell	4/9/2013 13:30	Sell to cover	$1.30	($489.00)	$17,143.20		($489.00)	0.00%
502	Buy	4/9/2013 15:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	84.65%
	Sell	4/9/2013 19:30	Profit Target	$1.31	$364.00	$17,497.20		($66.00)	100.00%
503	Buy	4/9/2013 20:30	Buy	$1.30	100000	$354.00	0.28%	$364.00	66.18%
	Sell	4/9/2013 21:30	Profit Target	$1.31	$364.00	$17,851.20		($186.00)	100.00%
504	Buy	4/9/2013 22:30	Buy	$1.31	100000	($137.50)	-0.10%	$111.00	39.93%
	Sell	4/10/2013 11:30	Sell to cover	$1.31	($127.50)	$17,713.70		($169.50)	15.11%
505	Buy	4/10/2013 12:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	94.06%
	Sell	4/10/2013 13:30	Profit Target	$1.31	$364.00	$18,067.70		($23.00)	100.00%
506	Buy	4/10/2013 14:30	Buy	$1.31	100000	($240.00)	-0.18%	$174.00	43.07%
	Sell	4/10/2013 18:30	Sell to cover	$1.31	($230.00)	$17,827.70		($230.00)	0.00%
507	Buy	4/10/2013 21:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	46.68%
	Sell	4/11/2013 16:30	Profit Target	$1.31	$364.00	$18,181.70		($418.00)	100.00%
508	Buy	4/11/2013 19:30	Buy	$1.31	100000	($107.10)	-0.07%	$297.00	55.83%
	Sell	4/12/2013 12:30	Sell to	$1.31	($97.10)	$18,074.60		($235.00)	26.13%

			cover						
509	Sell Short	4/12/2013 14:30	Sell	$1.31	100000	($320.00)	-0.24%	$278.00	47.28%
	Buy to Cover	4/12/2013 20:30	Buy to cover	$1.31	($310.00)	$17,754.60		($310.00)	0.00%
510	Sell Short	4/13/2013 1:30	Sell	$1.31	100000	($167.80)	-0.12%	$270.20	36.49%
	Buy to Cover	4/15/2013 18:30	Buy to cover	$1.31	($157.80)	$17,586.80		($470.00)	42.16%
511	Sell Short	4/15/2013 22:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	89.88%
	Buy to Cover	4/16/2013 0:30	Profit Target	$1.30	$364.00	$17,940.80		($41.00)	100.00%
512	Sell Short	4/16/2013 1:30	Sell	$1.30	100000	($317.50)	-0.24%	$188.50	37.90%
	Buy to Cover	4/16/2013 10:30	Buy to cover	$1.31	($307.50)	$17,623.30		($307.50)	0.00%
513	Buy	4/16/2013 12:30	Buy	$1.31	100000	($452.00)	-0.34%	$97.00	18.00%
	Sell	4/16/2013 15:30	Sell to cover	$1.30	($442.00)	$17,171.30		($442.00)	0.00%
514	Buy	4/16/2013 16:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	95.04%
	Sell	4/16/2013 16:30	Profit Target	$1.31	$364.00	$17,525.30		($19.00)	100.00%
515	Buy	4/16/2013 17:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	97.33%
	Sell	4/16/2013 18:30	Profit Target	$1.31	$364.00	$17,879.30		($10.00)	100.00%
516	Buy	4/16/2013 19:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	60.17%
	Sell	4/16/2013 22:30	Profit Target	$1.32	$364.00	$18,233.30		($241.00)	100.00%
517	Buy	4/17/2013 3:30	Buy	$1.32	100000	($38.00)	-0.02%	$125.00	70.22%
	Sell	4/17/2013 9:30	Sell to cover	$1.32	($28.00)	$18,195.30		($53.00)	14.04%
518	Buy	4/17/2013 10:30	Buy	$1.32	100000	($204.00)	-0.15%	$263.00	56.56%
	Sell	4/17/2013 16:30	Sell to cover	$1.32	($194.00)	$17,991.30		($202.00)	1.72%
519	Sell Short	4/17/2013 18:30	Sell	$1.31	100000	$354.00	0.28%	$364.00	60.36%
	Buy to Cover	4/17/2013 20:30	Profit Target	$1.31	$364.00	$18,345.30		($239.00)	100.00%
520	Sell Short	4/17/2013 22:30	Sell	$1.30	100000	$354.00	0.28%	$364.00	92.15%
	Buy to Cover	4/17/2013 22:30	Profit Target	$1.30	$364.00	$18,699.30		($31.00)	100.00%
521	Sell Short	4/18/2013 0:30	Sell	$1.30	100000	($87.60)	-0.06%	$263.00	77.13%
	Buy to Cover	4/18/2013 8:30	Buy to cover	$1.30	($77.60)	$18,611.70		($77.60)	0.00%
522	Sell Short	4/18/2013 9:30	Sell	$1.30	100000	($440.00)	-0.33%	$182.00	29.74%
	Buy to Cover	4/18/2013 21:30	Buy to cover	$1.31	($430.00)	$18,171.70		($430.00)	0.00%
523	Buy	4/18/2013 22:30	Buy	$1.31	100000	$354.90	0.28%	$364.90	53.51%
	Sell	4/19/2013 18:30	Profit Target	$1.31	$364.90	$18,526.60		($318.00)	100.00%

524	Buy	4/19/2013 19:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	81.07%
	Sell	4/19/2013 19:30	Profit Target	$1.31	$364.00	$18,880.60		($85.00)	100.00%
525	Buy	4/19/2013 20:30	Buy	$1.31	100000	($727.20)	-0.55%	$61.00	5.87%
	Sell	4/23/2013 8:30	Sell to cover	$1.30	($717.20)	$18,153.40		($979.10)	25.31%
526	Sell Short	4/23/2013 9:30	Sell	$1.30	100000	($162.00)	-0.12%	$146.00	48.99%
	Buy to Cover	4/23/2013 13:30	Buy to cover	$1.31	($152.00)	$17,991.40		($152.00)	0.00%
527	Sell Short	4/23/2013 14:30	Sell	$1.30	100000	($261.40)	-0.19%	$182.00	32.97%
	Buy to Cover	4/24/2013 14:30	Buy to cover	$1.30	($251.40)	$17,730.00		($370.00)	21.20%
528	Buy	4/24/2013 16:30	Buy	$1.30	100000	$354.70	0.28%	$364.70	41.83%
	Sell	4/25/2013 14:30	Profit Target	$1.31	$364.70	$18,084.70		($509.00)	100.00%
529	Buy	4/25/2013 15:30	Buy	$1.31	100000	($142.00)	-0.10%	$294.00	69.01%
	Sell	4/25/2013 19:30	Sell to cover	$1.31	($132.00)	$17,942.70		($132.00)	0.00%
530	Sell Short	4/25/2013 21:30	Sell	$1.30	100000	($390.80)	-0.29%	$72.00	14.26%
	Buy to Cover	4/26/2013 13:30	Buy to cover	$1.30	($380.80)	$17,551.90		($432.80)	10.30%
531	Buy	4/26/2013 14:30	Buy	$1.30	100000	($433.00)	-0.32%	$59.00	12.24%
	Sell	4/26/2013 17:30	Sell to cover	$1.30	($423.00)	$17,118.90		($423.00)	0.00%
532	Sell Short	4/26/2013 18:30	Sell	$1.30	100000	($381.00)	-0.29%	$76.00	16.89%
	Buy to Cover	4/26/2013 23:30	Buy to cover	$1.30	($371.00)	$16,737.90		($374.00)	0.67%
533	Buy	4/27/2013 0:30	Buy	$1.30	100000	$356.00	0.28%	$364.00	86.94%
	Sell	4/29/2013 3:30	Profit Target	$1.31	$366.00	$17,093.90		($55.00)	100.00%
534	Buy	4/29/2013 4:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	57.23%
	Sell	4/29/2013 13:30	Profit Target	$1.31	$364.00	$17,447.90		($272.00)	100.00%
535	Buy	4/29/2013 15:30	Buy	$1.31	100000	$17.80	0.02%	$275.00	69.10%
	Sell	4/30/2013 6:30	Sell to cover	$1.31	$27.80	$17,465.70		($123.00)	38.69%
536	Buy	4/30/2013 7:30	Buy	$1.31	100000	($85.00)	-0.06%	$284.00	77.60%
	Sell	4/30/2013 12:30	Sell to cover	$1.31	($75.00)	$17,380.70		($82.00)	1.91%
537	Sell Short	4/30/2013 15:30	Sell	$1.31	100000	($392.00)	-0.29%	$54.00	12.39%
	Buy to Cover	4/30/2013 19:30	Buy to cover	$1.31	($382.00)	$16,988.70		($382.00)	0.00%
538	Buy	4/30/2013 20:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	81.61%
	Sell	4/30/2013 20:30	Profit Target	$1.32	$364.00	$17,342.70		($82.00)	100.00%
539	Buy	4/30/2013 23:30	Buy	$1.32	100000	$354.50	0.28%	$364.50	76.35%

	Sell	5/1/2013 15:30	Profit Target	$1.32	$364.50	$17,697.20		($114.00)	100.00%
540	Buy	5/1/2013 20:30	Buy	$1.32	100000	($329.00)	-0.24%	$117.00	26.83%
	Sell	5/1/2013 21:30	Sell to cover	$1.32	($319.00)	$17,368.20		($319.00)	0.00%
541	Buy	5/1/2013 22:30	Buy	$1.32	100000	($746.40)	-0.56%	$313.00	29.87%
	Sell	5/2/2013 19:30	Sell to cover	$1.31	($736.40)	$16,621.80		($736.40)	0.00%
542	Sell Short	5/3/2013 6:30	Sell	$1.31	100000	($416.00)	-0.31%	$39.00	8.76%
	Buy to Cover	5/3/2013 12:30	Buy to cover	$1.31	($406.00)	$16,205.80		($406.00)	0.00%
543	Buy	5/3/2013 15:30	Buy	$1.31	100000	($702.00)	-0.53%	$185.00	21.09%
	Sell	5/3/2013 18:30	Sell to cover	$1.31	($692.00)	$15,503.80		($692.00)	0.00%
544	Sell Short	5/3/2013 19:30	Sell	$1.30	100000	($1,037.00)	-0.79%	$11.00	1.06%
	Buy to Cover	5/3/2013 20:30	Buy to cover	$1.31	#########	$14,466.80		($1,027.00)	0.00%
545	Buy	5/3/2013 21:30	Buy	$1.31	100000	($348.00)	-0.26%	$253.00	43.15%
	Sell	5/6/2013 20:30	Sell to cover	$1.31	($338.00)	$14,118.80		($338.00)	0.00%
546	Sell Short	5/6/2013 21:30	Sell	$1.31	100000	($453.50)	-0.34%	$35.00	7.32%
	Buy to Cover	5/7/2013 16:30	Buy to cover	$1.31	($443.50)	$13,665.30		($443.50)	0.00%
547	Buy	5/7/2013 17:30	Buy	$1.31	100000	($434.00)	-0.32%	$131.00	22.28%
	Sell	5/8/2013 1:30	Sell to cover	$1.31	($424.00)	$13,231.30		($457.00)	5.61%
548	Sell Short	5/8/2013 2:29	Sell	$1.31	100000	($381.20)	-0.28%	$55.80	12.88%
	Buy to Cover	5/8/2013 12:30	Buy to cover	$1.31	($371.20)	$12,850.10		($371.20)	0.00%
549	Buy	5/8/2013 13:30	Buy	$1.31	100000	$354.00	0.28%	$364.00	57.59%
	Sell	5/8/2013 18:30	Profit Target	$1.31	$364.00	$13,204.10		($268.00)	100.00%
550	Buy	5/9/2013 0:30	Buy	$1.32	100000	($78.00)	-0.05%	$33.00	21.29%
	Sell	5/9/2013 8:30	Sell to cover	$1.32	($68.00)	$13,126.10		($122.00)	34.84%
551	Buy	5/9/2013 9:30	Buy	$1.32	100000	n/a	n/a	$115.00	n/a
	Sell	open	n/a	$1.30	n/a	n/a		($1,553.00)	n/a

Annual Returns

Table 6: Annual Returns for the Group System

Mark-To-Market Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
Last 12 month	$11,863.50	11.86%	1.14	551	50.64%
1/1/2013	$2,028.20	1.85%	1.06	207	49.28%
1/1/2012	$9,835.30	9.84%	1.2	345	51.30%
Mark-To-Market Rolling Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
1/1/2013 - Today	$2,028.20	1.85%	1.06	207	49.28%
1/1/2012 - 1/1/2013	$11,863.50	11.86%	1.14	551	50.64%

Daily and Monthly Returns

Table 7: Daily and Monthly Returns for the Group System

Mark-To-Market Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/10/2013	($608.00)	-0.54%	0	1	0.00%
5/9/2013	($721.00)	-0.64%	0	2	0.00%
5/8/2013	($128.20)	-0.11%	0.73	3	33.33%
5/7/2013	($564.50)	-0.50%	0	2	0.00%
5/6/2013	($598.00)	-0.52%	0	2	0.00%
5/5/2013	$0.00	0.00%	0	1	0.00%
5/4/2013	$145.00	0.13%	100	1	100.00%
5/3/2013	($2,272.00)	-1.95%	0	4	0.00%
5/2/2013	($757.40)	-0.65%	0	1	0.00%
5/1/2013	$50.50	0.04%	1.15	3	66.67%
4/30/2013	($185.20)	-0.16%	0.66	5	20.00%
4/29/2013	$740.00	0.63%	100	3	100.00%
4/28/2013	$0.00	0.00%	0	1	0.00%
4/27/2013	$34.00	0.03%	100	1	100.00%
4/26/2013	($1,064.80)	-0.90%	0	3	0.00%
4/25/2013	$164.70	0.14%	1.58	3	33.33%
4/24/2013	($235.40)	-0.20%	0	2	0.00%
4/23/2013	($345.10)	-0.29%	0	3	0.00%
4/22/2013	($23.10)	-0.02%	0	1	0.00%
4/21/2013	$0.00	0.00%	0	1	0.00%

4/20/2013	($253.00)	-0.21%	0	1	0.00%
4/19/2013	$446.90	0.38%	2.16	3	66.67%
4/18/2013	($651.60)	-0.55%	0	3	0.00%
4/17/2013	$466.00	0.39%	2.93	4	50.00%
4/16/2013	$552.50	0.47%	1.72	6	66.67%
4/15/2013	$235.20	0.20%	100	2	100.00%
4/14/2013	$0.00	0.00%	0	1	0.00%
4/13/2013	($309.00)	-0.26%	0	1	0.00%
4/12/2013	($491.10)	-0.42%	0	2	0.00%
4/11/2013	$706.00	0.60%	100	2	100.00%
4/10/2013	($294.50)	-0.25%	0.55	4	25.00%
4/9/2013	$615.60	0.53%	2.19	5	60.00%
4/8/2013	$107.00	0.09%	1.43	3	33.33%
4/5/2013	$120.00	0.10%	1.51	2	50.00%
4/4/2013	$563.40	0.48%	100	2	100.00%
4/3/2013	($646.00)	-0.55%	0	3	0.00%
4/2/2013	($306.10)	-0.26%	0.13	2	50.00%
4/1/2013	($4.80)	0.00%	0.99	4	50.00%
3/31/2013	$0.00	0.00%	0	1	0.00%
3/30/2013	$0.00	0.00%	0	1	0.00%
Mark-To-Market Rolling Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/10/2013 - 5/10/2013	($608.00)	-0.54%	0	1	0.00%
5/9/2013 - 5/10/2013	($1,329.00)	-1.17%	0	2	0.00%
5/8/2013 - 5/10/2013	($1,457.20)	-1.29%	0.2	5	20.00%
5/7/2013 - 5/10/2013	($2,021.70)	-1.78%	0.15	6	16.67%
5/6/2013 - 5/10/2013	($2,619.70)	-2.29%	0.12	7	14.29%
5/5/2013 - 5/10/2013	($2,619.70)	-2.29%	0.12	7	14.29%
5/4/2013 - 5/10/2013	($2,474.70)	-2.16%	0.13	7	14.29%
5/3/2013 - 5/10/2013	($4,746.70)	-4.07%	0.07	10	10.00%
5/2/2013 - 5/10/2013	($5,504.10)	-4.69%	0.06	11	9.09%
5/1/2013 - 5/10/2013	($5,453.60)	-4.65%	0.12	13	15.38%
4/30/2013 - 5/10/2013	($5,638.80)	-4.80%	0.16	17	17.65%

4/29/2013 - 5/10/2013	($4,898.80)	-4.20%	0.26	19	31.58%
4/28/2013 - 5/10/2013	($4,898.80)	-4.20%	0.26	19	31.58%
4/27/2013 - 5/10/2013	($4,864.80)	-4.17%	0.27	19	31.58%
4/26/2013 - 5/10/2013	($5,929.60)	-5.03%	0.23	22	27.27%
4/25/2013 - 5/10/2013	($5,764.90)	-4.90%	0.28	24	29.17%
4/24/2013 - 5/10/2013	($6,000.30)	-5.09%	0.26	25	28.00%
4/23/2013 - 5/10/2013	($6,345.40)	-5.37%	0.25	27	25.93%
4/22/2013 - 5/10/2013	($6,368.50)	-5.39%	0.25	27	25.93%
4/21/2013 - 5/10/2013	($6,368.50)	-5.39%	0.25	27	25.93%
4/20/2013 - 5/10/2013	($6,621.50)	-5.59%	0.24	27	25.93%
4/19/2013 - 5/10/2013	($6,174.60)	-5.23%	0.33	29	31.03%
4/18/2013 - 5/10/2013	($6,826.20)	-5.75%	0.29	31	29.03%
4/17/2013 - 5/10/2013	($6,360.20)	-5.38%	0.36	35	31.43%
4/16/2013 - 5/10/2013	($5,807.70)	-4.94%	0.46	41	36.59%
4/15/2013 - 5/10/2013	($5,572.50)	-4.75%	0.48	42	38.10%
4/14/2013 - 5/10/2013	($5,572.50)	-4.75%	0.48	42	38.10%
4/13/2013 - 5/10/2013	($5,881.50)	-5.00%	0.46	42	35.71%
4/12/2013 - 5/10/2013	($6,372.60)	-5.39%	0.44	44	34.09%
4/11/2013 - 5/10/2013	($5,666.60)	-4.82%	0.5	45	35.56%
4/10/2013 - 5/10/2013	($5,961.10)	-5.06%	0.49	48	35.42%
4/9/2013 - 5/10/2013	($5,345.50)	-4.56%	0.56	52	38.46%
4/8/2013 - 5/10/2013	($5,238.50)	-4.47%	0.58	54	38.89%
4/7/2013 - 5/10/2013	($5,238.50)	-4.47%	0.58	54	38.89%
4/6/2013 - 5/10/2013	($5,238.50)	-4.47%	0.58	54	38.89%
4/5/2013 -	($5,118.50)	-4.38%	0.59	56	39.29%

5/10/2013					
4/4/2013 - 5/10/2013	($4,555.10)	-3.91%	0.64	58	41.38%
4/3/2013 - 5/10/2013	($5,201.10)	-4.44%	0.6	60	38.33%
4/2/2013 - 5/10/2013	($5,507.20)	-4.69%	0.59	61	39.34%
4/1/2013 - 5/10/2013	($5,512.00)	-4.70%	0.6	64	39.06%

<u>Monthly Returns</u>
Mark-To-Market Monthly Average Analysis:

Period	Avg. Net Profit	% Gain	%Profitable
January	$2,413.00	2.41%	49.12%
February	$3,975.10	3.54%	55.56%
March	$1,152.10	0.99%	61.36%
April	($58.40)	-0.05%	44.23%
May	($2,116.10)	-1.80%	42.55%
June	$1,147.80	1.08%	53.85%
July	($417.80)	-0.41%	47.17%
August	$305.20	0.30%	45.83%
September	$1,540.90	1.51%	54.05%
October	$2,382.10	2.29%	55.32%
November	$329.90	0.31%	46.15%
December	$3,325.80	3.12%	59.52%

Mark-To-Market Period Analysis:

Period	Net Profit	% Gain	Profit Factor	# Trades	%Profitable
5/1/2013	($5,453.60)	-4.65%	0.12	13	15.38%
4/1/2013	($58.40)	-0.05%	0.99	52	44.23%
3/1/2013	$1,152.10	0.99%	1.17	44	61.36%
2/1/2013	$3,975.10	3.54%	1.82	45	55.56%
1/1/2013	$2,413.00	2.20%	1.35	57	49.12%
12/1/2012	$3,325.80	3.12%	1.73	42	59.52%
11/1/2012	$329.90	0.31%	1.06	39	46.15%
10/1/2012	$2,382.10	2.29%	1.4	47	55.32%
9/1/2012	$1,540.90	1.51%	1.32	37	54.05%
8/1/2012	$305.20	0.30%	1.04	48	45.83%
7/1/2012	($417.80)	-0.41%	0.95	53	47.17%

6/1/2012	$1,147.80	1.13%	1.13	52	53.85%
5/1/2012	$1,221.40	1.22%	1.24	34	52.94%
Mark-To-Market Rolling Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	%Profitable
5/1/2013 - Today	($5,453.60)	-4.65%	0.12	13	15.38%
4/1/2013 - 5/1/2013	($5,512.00)	-4.70%	0.6	64	39.06%
3/1/2013 - 5/1/2013	($4,359.90)	-3.75%	0.79	107	47.66%
2/1/2013 - 5/1/2013	($384.80)	-0.34%	0.98	151	49.67%
1/1/2013 - 5/1/2013	$2,028.20	1.85%	1.06	207	49.28%
12/1/2012 - 5/1/2013	$5,354.00	5.03%	1.15	248	51.21%
11/1/2012 - 5/1/2013	$5,683.90	5.35%	1.14	286	50.35%
10/1/2012 - 5/1/2013	$8,066.00	7.77%	1.17	332	51.20%
9/1/2012 - 5/1/2013	$9,606.90	9.39%	1.18	368	51.36%
8/1/2012 - 5/1/2013	$9,912.10	9.72%	1.17	415	50.60%
7/1/2012 - 5/1/2013	$9,494.30	9.27%	1.14	467	50.11%
6/1/2012 - 5/1/2013	$10,642.10	10.51%	1.14	518	50.39%
5/1/2012 - 5/1/2013	$11,863.50	11.86%	1.14	551	50.64%

Weekly Returns

Table 8: Weekly Returns for the Group System

Mark-To-Market Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/5/2013	($2,619.70)	-2.29%	0.12	7	14.29%
4/28/2013	($2,279.10)	-1.95%	0.39	13	46.15%
4/21/2013	($1,469.70)	-1.24%	0.21	9	22.22%
4/14/2013	$796.00	0.68%	1.37	16	56.25%
4/7/2013	$334.00	0.29%	1.19	13	46.15%
3/31/2013	($273.50)	-0.23%	0.81	10	40.00%

3/24/2013	$985.00	0.85%	1.8	13	76.92%
3/17/2013	$1,487.40	1.29%	1.84	10	60.00%
3/10/2013	($1,483.00)	-1.27%	0.49	11	36.36%
3/3/2013	($793.50)	-0.68%	0.61	10	50.00%
2/24/2013	$2,090.30	1.82%	3.15	14	64.29%
2/17/2013	$824.40	0.72%	2.39	8	50.00%
2/10/2013	($38.10)	-0.03%	0.98	12	41.67%
2/3/2013	$1,593.90	1.41%	2.8	12	58.33%
1/27/2013	$1,210.50	1.09%	2.32	12	50.00%
1/20/2013	($455.40)	-0.41%	0.8	13	38.46%
1/13/2013	($56.30)	-0.05%	0.98	16	43.75%
1/6/2013	$1,117.70	1.01%	2.43	12	66.67%
12/30/2012	$60.70	0.05%	1.03	14	42.86%
12/23/2012	($622.60)	-0.56%	0.6	9	33.33%
12/16/2012	($192.70)	-0.17%	0.82	6	50.00%
12/9/2012	$2,566.30	2.35%	4.36	13	84.62%
12/2/2012	$2,773.40	2.61%	8.5	13	76.92%
11/25/2012	($1,395.10)	-1.30%	0.22	6	33.33%
11/18/2012	$2,139.00	2.03%	4.88	11	72.73%
11/11/2012	($1,395.20)	-1.30%	0.34	10	20.00%
11/4/2012	$423.20	0.40%	1.41	11	45.45%
10/28/2012	$1,017.00	0.96%	2.21	9	66.67%
10/21/2012	($205.50)	-0.19%	0.87	11	36.36%
10/14/2012	$1,419.50	1.36%	2.96	12	58.33%
10/7/2012	($763.50)	-0.73%	0.65	9	44.44%
9/30/2012	$1,270.60	1.22%	2.18	12	66.67%
9/23/2012	$851.50	0.83%	1.74	10	60.00%
9/16/2012	($1,012.00)	-0.97%	0.58	11	45.45%
9/9/2012	$511.70	0.49%	1.48	10	50.00%
9/2/2012	$1,136.70	1.11%	5.05	7	57.14%
8/26/2012	($384.40)	-0.37%	0.74	11	36.36%
8/19/2012	($16.80)	-0.02%	0.99	9	44.44%
8/12/2012	($736.10)	-0.71%	0.59	10	30.00%
8/5/2012	$1,302.70	1.28%	2.59	12	50.00%
Mark-To-Market Rolling Period Analysis:					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/5/2013 - Today	($2,619.70)	-2.29%	0.12	7	14.29%
4/28/2013 - 5/5/2013	($4,898.80)	-4.20%	0.26	19	31.58%
4/21/2013 - 5/5/2013	($6,368.50)	-5.39%	0.25	27	25.93%

4/14/2013 - 5/5/2013	($5,572.50)	-4.75%	0.48	42	38.10%
4/7/2013 - 5/5/2013	($5,238.50)	-4.47%	0.58	54	38.89%
3/31/2013 - 5/5/2013	($5,512.00)	-4.70%	0.6	64	39.06%
3/24/2013 - 5/5/2013	($4,527.00)	-3.89%	0.7	76	44.74%
3/17/2013 - 5/5/2013	($3,039.60)	-2.65%	0.82	85	45.88%
3/10/2013 - 5/5/2013	($4,522.60)	-3.89%	0.75	95	45.26%
3/3/2013 - 5/5/2013	($5,316.10)	-4.54%	0.74	104	46.15%
2/24/2013 - 5/5/2013	($3,225.80)	-2.80%	0.85	117	47.86%
2/17/2013 - 5/5/2013	($2,401.40)	-2.10%	0.89	124	48.39%
2/10/2013 - 5/5/2013	($2,439.50)	-2.13%	0.9	136	47.79%
2/3/2013 - 5/5/2013	($845.60)	-0.75%	0.97	147	48.98%
1/27/2013 - 5/5/2013	$364.90	0.33%	1.01	158	49.37%
1/20/2013 - 5/5/2013	($90.50)	-0.08%	1	171	48.54%
1/13/2013 - 5/5/2013	($146.80)	-0.13%	1	186	48.39%
1/6/2013 - 5/5/2013	$970.90	0.88%	1.03	197	49.24%
12/30/2012 - 5/5/2013	$1,031.60	0.93%	1.03	210	48.57%
12/23/2012 - 5/5/2013	$409.00	0.37%	1.01	218	48.17%
12/16/2012 - 5/5/2013	$216.30	0.19%	1.01	223	47.98%
12/9/2012 - 5/5/2013	$2,782.60	2.55%	1.08	236	50.00%
12/2/2012 - 5/5/2013	$5,556.00	5.23%	1.15	248	51.21%
11/25/2012 - 5/5/2013	$4,160.90	3.86%	1.11	253	50.99%
11/18/2012 - 5/5/2013	$6,299.90	5.97%	1.16	264	51.89%
11/11/2012 - 5/5/2013	$4,904.70	4.59%	1.12	273	50.55%
11/4/2012 - 5/5/2013	$5,327.90	5.00%	1.13	283	50.18%
10/28/2012 -	$6,344.90	6.01%	1.15	292	50.68%

5/5/2013					
10/21/2012 - 5/5/2013	$6,139.40	5.81%	1.14	302	50.33%
10/14/2012 - 5/5/2013	$7,558.90	7.25%	1.17	313	50.80%
10/7/2012 - 5/5/2013	$6,795.40	6.47%	1.14	321	50.78%
9/30/2012 - 5/5/2013	$8,066.00	7.77%	1.17	332	51.20%
9/23/2012 - 5/5/2013	$8,917.50	8.66%	1.18	341	51.32%
9/16/2012 - 5/5/2013	$7,905.50	7.60%	1.15	352	51.14%
9/9/2012 - 5/5/2013	$8,417.20	8.14%	1.16	361	50.97%
9/2/2012 - 5/5/2013	$9,553.90	9.34%	1.18	368	51.09%
8/26/2012 - 5/5/2013	$9,169.50	8.93%	1.17	378	50.79%
8/19/2012 - 5/5/2013	$9,152.70	8.91%	1.16	386	50.78%
8/12/2012 - 5/5/2013	$8,416.60	8.14%	1.15	395	50.38%
8/5/2012 - 5/5/2013	$9,719.30	9.52%	1.17	406	50.49%