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# Analysis of Financial Markets

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## Analysis of Financial Markets

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Financial Markets are an important part of our economy. The exchange and trade that occurs on these markets are based on the price value of a variety of financial instruments such as bonds, stocks, commodities and funds. It is the ability to predict the direction and changes in prices for profitability that provide for a multibillion-dollar industry.

There are a variety of funds based on their function. The creation of funds can be traced back to the 1700's, however in the United States the first mutual fund was formed in the 1890's. Funds were created to provide the option to a group of investors to pool their capital together thus sharing in the risk, lessening individual risk, as well as extending their options and possibilities to target their interests.

This thesis studies the basic procedure involved in starting a hedge fund in Finland and the oversight and regulation involved. It further studies in detail the analysis required in the core operations of running the fund and assuring its sustainability and profitability. This analysis is the basis on which decisions are made pertaining to executing trades and orders in the financial markets. The research for this thesis included setting up a hedge fund and then applying technical and fundamental analyses to securities. Additionally making trade decisions to earn on those trades and to see how the mentioned analyses helped in making correct and profitable decisions.

The hedge fund was setup as a normal business with a business plan. A set of policies was documented to be the guidelines for the operations of the business and trading. Technical and fundamental analysis were studied in detail and then applied to specific securities in the financial markets. Based on the study and application of the technical and fundamental analysis, it was found that a combination of both technical and fundamental analysis provide for the best results in the analysis of a security. However it was also noted that technical analysis worked better for day trading rather than longer held positions, while fundamental analysis provided for a very sound basis for analysis on long term holdings. It was also found that technical indicators work best in conjunction with a variety of indicators, and that one single indicator can often be misleading. Following the policies laid out, with detailed research complemented by technical and fundamental analysis, this hedge fund can continue to grow and expand.

Keywords: Financial Markets, Technical & Fundamental Analysis, Hedge Funds.

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## 1 Introduction

This thesis covers basics of starting a hedge fund and the analyses, policies and procedures involved in running a successful hedge fund.

### 1.1 Financial Markets and Analysis

Financial markets are where people and companies can trade and exchange different types of financial instruments based on the price, which is subsequently based on supply and demand.

Being able to predict the rise and fall of prices of these instruments and profit from them has become an important part of our economy. This in turn has opened a whole new industry and jobs in all parts of the economy. (Financial Market 2014 & Schiller 2012)

### 1.2 Background

For investors there are different types of financial instruments, some of them are saving accounts, certificates of deposits, stocks, bonds and funds. However unlike the other investment instruments funds can be highly diversified and offer great flexibility. Funds were created to give an option where a group of investors can pool their resources together and invest in a variety of targets while managing risk effectively, thus extending their possibilities and options to their best interests. (McWhinney J. E. 2014)

Financial investments go back to undated time. However, the first mutual fund can be traced back to the 1800's when mutual funds were first formed in Europe. Some sources claim that the first mutual fund was formed as early as the 1700's. It was in the 1890's that the first mutual fund was formed in the US. In the beginning of the 1990s the first modern mutual fund was formed starting the evolution of the modern mutual funds we know today. (McWhinney J. E. 2014)

People initially started funds to pool together their resources and share the risk but with the evolution of these funds, advantages of pooling resources led to higher and faster gains as well as diversification of instruments to one's portfolio. Unlike other investment instruments that are designed to invest in one specific area, funds can invest in almost all of the other financial instruments. (McWhinney J. E. 2014)

### 1.3 Objectives for this paper

To understand the startup procedure and regulation of a fund in Finland. To understand the daily operations and management of a fund and to understand the analysis and metrics used in the analysis of a financial instrument.

### 1.4 Procedure of Study

This research was carried out by Studying economics, financial markets and funds. Setting up a suitable financial fund and studying a variety of metrics and applying them to financial instruments. Trading those instruments and analyzing the trades and the outcome.

### 1.5 Objectives and Limitations

This research studies a few types of analysis and metrics used in technical and fundamental analysis in regard to investments and financial instruments. It studies how to set up a fund and how to operate that fund and produce good results.

Since this is a very vast field, it is therefore limited to the study of a few technical and fundamental metrics that will be applied to a single stock for the sake of explaining the process. However the results were used to make actual trades.

Using the technical and fundamental analysis the aim is to show which of the analyses are best suited in helping to make profitable and correct decisions as well as the basics on how to operate and run a fund.

### 1.6 Initiation & Preliminary Study

The project was initiated by researching and studying the basic aspects of the financial markets, economic theorys and analysis of financial markets. A lot of the research and preliminary groundwork had already been laid by having studied and worked with financial markets over the past three years,

This thesis is based on the premise of secondary data from a variety of sources. However the actual research on the analysis of technical and fundamental concepts was done first hand, based on actual trades and decisions made by the researcher. Although this thesis is based on research and studies already conducted, the knowledge from previous studies alone could not be used to predict the future prices of an instrument. Hence it was necessary to implement the knowledge acquired into the current situation and analyze and study something entirely new.

## 2 Funds And Their Regulation In Finland

### 2.1 Funds

There are basically three types of funds according to the US Securities and exchange commission. These are Mutual funds, Closed-End Funds and Unit Investment Trusts. These funds are highly regulated and under constant scrutiny. In addition to the mentioned funds there are Hedge Funds and Venture Capital funds. The latter two funds are not under complete regulation and scrutiny as the former three, due to the fact that these are mostly private institutions. (Investopedia 2014 & U.S. SEC)

Mutual Funds are funds in which investors and companies pool their money and invest in different types of financial instruments. Later investors can purchase shares from the fund directly. They cannot purchase shares of stocks or commodities held by any exchange. The price is based on the fund's net asset value. Whenever the investor wants to sell, they sell their share back to the fund at a new current net asset value. (Investopedia 2014 & U.S. SEC)

Closed-End Funds are also known as closed-end companies, one cannot continue to buy and sell shares from the fund at any time, and the fund sells at a fixed number of shares at its initial public offering after which the shares will be traded on a secondary exchange. The value of those shares is then based on the market. (Investopedia 2014 & U.S. SEC)

Unit Investment Trusts (UIT) are similar to mutual funds in the sense that the fund will buy back investors' shares on request; however these shares are bought back in very large blocks and are traded on secondary exchanges. At the initial public offering the shares will be sold once, however sponsors will be willing to buy back and resell those shares independently.



Sponsors are the companies that are responsible for organizing, creating and managing the UIT. These funds have an end date after which the fund matures and shares are sold returning capital to investors. This type of fund does not actively trade its portfolio, but buys a fixed portfolio and holds it for the life of the fund. (Investopedia 2014 & U.S. SEC)

Venture Capital Fund is a type of fund where investors pool their money to invest in startup companies. This fund makes money when the companies it invests in start making money and expanding. As the startup grows the investment capital invested earns its share of revenue in stock as well as value based on the company's growth and valuation. These funds have a great advantage as they often choose early startups that are not able to get financing from banks as they are classified as high risk. Thus in exchange, the fund gets a significant amount of shares, as well as control over the company in certain instances. (Investopedia 2014 & U.S. SEC)

Hedge funds are similar to mutual funds. Investors' pool money and invest to make a positive return, however hedge funds typically have more flexibility. In addition to being able to invest in all sorts of markets these funds are able to get high leverage as well as short sell stocks, therefore being able to make profit even during a falling market. Unlike mutual funds these funds are not under the intense regulation and scrutiny designed to protect its investors by the respective regulatory authorities. They are however subjected to the same rules to prevent fraud. (Investopedia 2014 & U.S. SEC)

All of the above mentioned funds can be classified into a variety of different types of funds based on the instruments, investors and policies they operate under. (U.S. Securities and Exchange Commission)

The fund setup and used in this thesis is similar to a hedge fund however without other investors and clients' capital.

## 2.2 Financial Regulation

Initially it was only the extremely wealthy who had the money to invest equity capital into companies. However the evolution of financial markets and technology opened up markets to everyone, but a lot of the people investing in capital funds are not always sufficiently informed. Regulation is also important because many of the professional traders trade among

themselves and manipulate the price of securities dumping them on amateur investors and the uninformed public. (Beattie A. n.d)

The great depression in 1929 would have been a relatively mild depression if not for the fact that the banks had been playing with their clients' deposits, and every institution was highly leveraged and operating on credit. In the aftermath of the black Tuesday and of the depression the Federal Reserve took charge trying to stop the renewal through reforms. This resulted in the creation of the Securities and Exchange Act of 1934 that created the Securities and Exchange Commission, which was tasked as an enforcement and regulatory authority to monitor and enforce laws by which financial intuitions and Wall Street had to obey. Thus, ensuring investor's and the public's financial safety and confidence. (Beattie A. n.d)

Each country has its own authority that regulates financial activities, as well as its own rules and regulations.

### 2.3 Regulation In Finland

In Finland, the Financial Supervisory Authority (Finanssivalvonta) regulates and supervises financial, insurance and pension activities. Like the Securities and Exchange Commission in the United States, Finanssivalvonta ensures balanced and fair operations within the financial sector, fosters public confidence in the financial market, and protects the rights of the insured. Finanssivalvonta operates in connection with the Bank of Finland; however it is entitled to make independent decisions. In addition to the insurance and pension institutions, Finanssivalvonta also oversees regulation of all credit institutions, financial investments, funds and the Helsinki Stock Exchange. (Finanssivalvonta. 2014)

## 3 Starting A Fund

Starting a hedge fund in Finland requires submitting an application and auxiliary documents to Finanssivalvonta. These need to be submitted six months prior to the commencement of operations. Based on the premise that the fund planned by the author is just a small investment fund being operated like a hedge fund without external clients and investors. No registration was necessary for the fund being analyzed in this thesis. However had this been a hedge fund with external clients', money regular audits as well as extreme monitoring by the Finanssivalvonta would be required on a regular basis. (Finanssivalvonta. 2014)

In order to operate efficiently as a business the following procedures were implemented. A business plan was created as well as a strategy for operating and being profitable. A set of policies and guidelines were laid out by which the internal regulation and operations of the fund were to be guided. The rest of the startup process was similar to any other business; it required registering the business with the Finnish Patent and Registration Office, and writing a business plan. However the main focus of this study is the analysis required in analyzing data and then executing profitable trades. (McCrary 2002)

While technically a hedge fund would hold certain long term investments, this hedge fund will at most hold positions for a few weeks in what is called swing trading, and will mostly be doing day trading, that is closing out every position by the end of each trading day.

#### 4 Analysis

In order to select financial instruments whether it is for a short period or long, it is important to understand what type of investments one is looking for and to be able to understand what the risks versus rewards are as well as the workings of that investment. In order to do that an in-depth analysis of the instrument is required. Based on this analysis it is then possible to predict to a certain extent the future direction of the price.

There are basically two types of analyses that can be done, technical and fundamental analysis. (Palicka, 2012)

##### 4.1 Technical Analysis

Technical analysis is a method to forecast the direction of prices based on the analysis and study of past market data. This mostly includes price and volume. Analysts use charts and look for patterns on the price line; these patterns include resistant lines, head and shoulders etc. Technical analysis also includes studying technical indicators such as moving averages, flags and balance days etc. (Technical Analysis 2014 & Kirkpatrick & Dahlquist 2011 & Palicka 2012)

Basically all the analysis is done on previous movements of the price and current price which are converted into indicators and patterns from which the future price is projected.

Technical analysis is used among traders and financial professionals, especially day traders who execute a lot of different trades daily and close out their positions by the end of the day.

However not everyone agrees to the validity of technical analysis and is wildly dismissed by a lot of professional investors who are long term investors and value stock based on the health and potential growth of a company, due to the fact that there is no conclusive evidence to their validity. (Technical Analysis 2014)

Technical analysis is based on the theory that the market price is a reflection of all the information related to that security. Therefore an analyst looks at the past performance assuming that the price behavior will repeat it self. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011 & Palicka 2012)

#### 4.2 Fundamental Analysis

Fundamental analysis is the method used to forecast the future price of a security by essentially analyzing and studying the value and health of a company. This analysis includes studying the financial statements, management, business, competitors, and markets. It may focus on the overall situation of the economy and factors that affect operations and the economy such as GDP, manufacturing, housing etc. (Fundamental Analysis 2014 & Krantz 2010)

Fundamental analysis is performed based on past and present data by making financial forecasts. There are two methods of doing this, Top-down and Bottom-Down. In Top-Down the investor looks at everything from a global perspective, the economics, interest rates, growth rates, inflation etc. and then narrows it down to his/her specific securities industry and region. In bottom-up the process is reversed the investor looks directly at the securities' specific business regardless of the global situation and regional industry. (Fundamental Analysis 2014 & Krantz 2010)

This analysis starts with investigating the financial statements, looking at ratios as they provide a snapshot view of the health of the company business. In addition the estimated earnings and growth rate projections are another important factor as they project the sentiments of investors in the market. This type of analysis is widely accepted specially in long-term holding companies. (Fundamental Analysis 2014 & Krantz 2010)

#### 4.3 Technical Analysis VS Fundamental Analysis

Having studied, back-tested and practically employed both technical and fundamental analysis to securities in an effort to predict the direction of the price, it can be said that fundamental analysis does seem to provide more accurate results and predictions. Technical analysis, though not always accurate or correct in prediction, does provide a really great system of identifying investment opportunities for day trading.

In this thesis a combination of technical and fundamental analysis have been used to predict the price movements of securities.

#### 4.4 Policies

The following policies were laid out and will continue to be used for the hedge fund, in order to ensure proper risk management control and oversight. These policies are important as they act as a set of rules and guidelines to ensure no misuse or improper handling of the funds. A maximum of twenty percent of the fund will be invested at any given time; this ensures that if some unexpected price change or error in the markets should occur only that invested amount will be lost. Of the remaining eighty percent, forty percent will be invested in long term secure government backed bonds if the fund grows large enough, while the remaining forty percent will be held as maintenance margin. All new strategies will be back tested before being implemented through a demo mode, a mode most trading accounts provide that allow for testing and trading with unreal funds. Every morning few hours before trading starts, time will be spent studying the previously open markets such as the Asian markets and European markets if trading in the US market is to take place. This study involves analyzing the markets and futures, as well as market conditions and the economy. Every trade with their reasons, explanations and results will be logged daily, this provides for a journal to be studied and evaluated prior to the next day's trading. This journal helps in understanding the motivations and emotions of the trader as well as a really great study of mistakes made in the past and how to improve on it. A maximum margin for loss of two percent will be maintained on every trade, this ensures that only a certain amount of loss can take place. A maximum of ten percent of the total fund maybe be lost per week before all trades cease as a recovery period. A maximum of twenty percent of the fund may be lost per month with all trades then ceasing till the next month. These maximum loss percentages ensure that the total capital will not be wiped on due to one day, week or month of bad trades, it provides for ensuring the continuity and sustainability of the fund. For every trade there will be stop loss limits in place to prevent major loss in a trade, these will be complimented with trailing stops to updated the stop loss marker. Regular breaks as well as physical activity during those breaks

are required between trades to ensure proper emotional state of the trader. Should major losses occur and the allowed loss percentage of the fund be reached the trader will spend the rest of the recovery period studying and analyzing the markets and then back testing future trades on demo mode. (McCrary 2002 & Bloomberg TV & Hull 2007)

## 5 Evaluation Metrics

Based on the policies and business plan, the analyses used for the trading of this fund are based on technical analysis and fundamental analysis, for which the following combination of indicators and metrics were used.

### 5.1 Technical Analysis

This analysis which is the analysis of a securities past data to predict the future price was be based on the following indicators.

#### **Moving-Average Convergence/Divergence line (MACD)**

This indicator is one of the most used indicators in technical analysis. It indicates both the trend as well as the momentum of a security. It consists of two lines based on exponential moving averages linked to two separate time periods. As these lines converge or diverge the momentum can be predicted as well as the rise or fall of price based on the position of convergence or divergence. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

This is calculated by subtracting the exponential twenty six day moving average from the exponential twelve day moving average. On top of this an exponential nine day moving average is then laid. The value that is the number of days of these moving averages can be changed to vary the MACD based on the time frame one is looking at. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

### **Relative Strength Index (RSI)**

This indicator signifies a securities demand, if it's overbought or oversold. The higher the indicator goes the more the security is bought, and vice versa for lower values that signifies a security being oversold. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

The RSI is calculated as a momentum of the ratio of higher closes to lower closes. It is calculated by using the following formula:  $(100 - 100 / (1 + RS))$  where RS is the average of X days' up closes divided by the average of X days' down closes. Most are based on a fourteen day time frame however this can be changed to show a shorter or longer time frame. The values range between a level of seventy and thirty, where seventy signifies overbought conditions while thirty signifies oversold conditions. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

### **Bollinger Bands**

This indicator measures the volatility of a security based on standard deviation. Two bands are plotted away from the exponential moving average of the price, the more volatile a security the wider the bands, the less volatile a security the bands get closer. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

These are calculated using standard deviation. The center line is an exponential moving average based on a certain number of days, the top and bottom bands are the standard deviation of price changes of the stock being studied. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

### **Head and Shoulders Pattern**

This is not exactly a technical indicator, it is a technical pattern used in similar ways to identify a reversal in trend. Analysts look for a pattern on the price line that looks like two small shoulders with a head in the middle, which signifies a reversal in the price trend. The points of A, B and C indicate the head and shoulder patters on the chart below. (Technical Analysis 2014 & Kirkpatric & Dahlquist 2011)

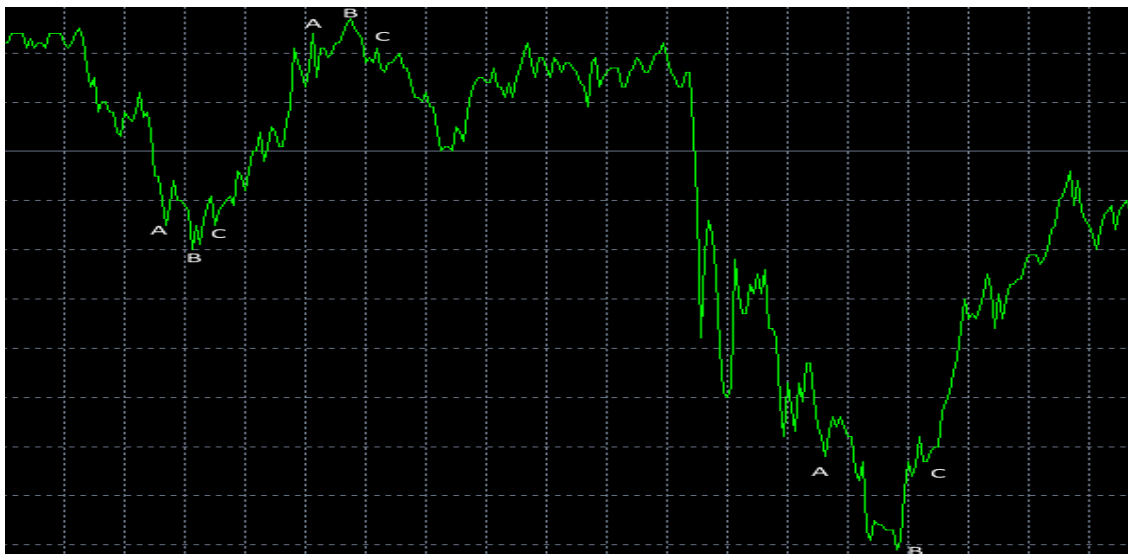


Figure 1: Head & Shoulders

## 5.2 Fundamental Analysis

This analysis is based on the study of a company's financial data, management and macroeconomics factors to determine health and value of a company thus predicting the valuation and price. It will be based on the following metrics.

### Price-to-Earnings Ratio (P/E)

This analyses a company's current price to its earnings per share. This metric is one of the best used to measure the value of a company's stock. It is calculated by dividing the price per share by the earnings per share, where the earnings are the profit made by each share. (Fundamental Analysis 2014 & Krantz 2010)

### Earnings per Share (EPS)

This is an analysis of the company's profit. It tells the analyst how much money the company is earning per share. However this metric is somewhat inefficient and should be used in conjunction with other metrics. It is calculated by subtracting the dividends from the profit and then dividing that by the number of outstanding shares. (Fundamental Analysis 2014 & Krantz 2010)



### **Dividend Yield**

This measures a company's dividends relative to its share price; it is the return on investment for stock. It helps calculate how much money one is getting for ones invested money. It is calculated by dividing annual dividends per share by the stock's price. (Fundamental Analysis 2014 & Krantz 2010)

### **Return on Equity (ROE)**

This measures how efficient a company is at generating profits, it calculates how efficient a company is based on a company making more money with less investment. It is calculated by dividing the profit by the total amount of money invested. That is the amount of money made from each share or capital dollar invested. (Fundamental Analysis 2014 & Krantz 2010)

### **Management**

Although this is not a real analysis in any fundamental or technical sense, it is often used and considered very important in analyzing a company and its potential future. The role that management plays in leading a company is highly crucial. Thus analyzing a company's management, its leadership, past track record and transparency can predict a lot about the company. News also tends to influence this type of analysis, all and any news pertaining to the company, its board and employees has an effect. The general economy and business news also affects a company greatly. (Fundamental Analysis 2014 & Krantz 2010)

## **6 Application Of Analyses And Policies To Stock and Trades.**

For the application of the above-mentioned metrics and analyses, Apple Inc. (AAPL) and JP Morgan Chase & Co. (JPM) are used as examples.

### **6.1 Technical Indicators**

The following screen shots have been taken from the trading system being used to make actual trades. Although it is not always a real trade some of the screen shots have been taken to be able to explain a specific indicator to maximum effect.

First technical indicators applied to AAPL and how using their indications can help analyze the stock and make an approximate prediction to what the price is going to do next is discussed.

### Moving-Average Convergence/Divergence line (MACD)

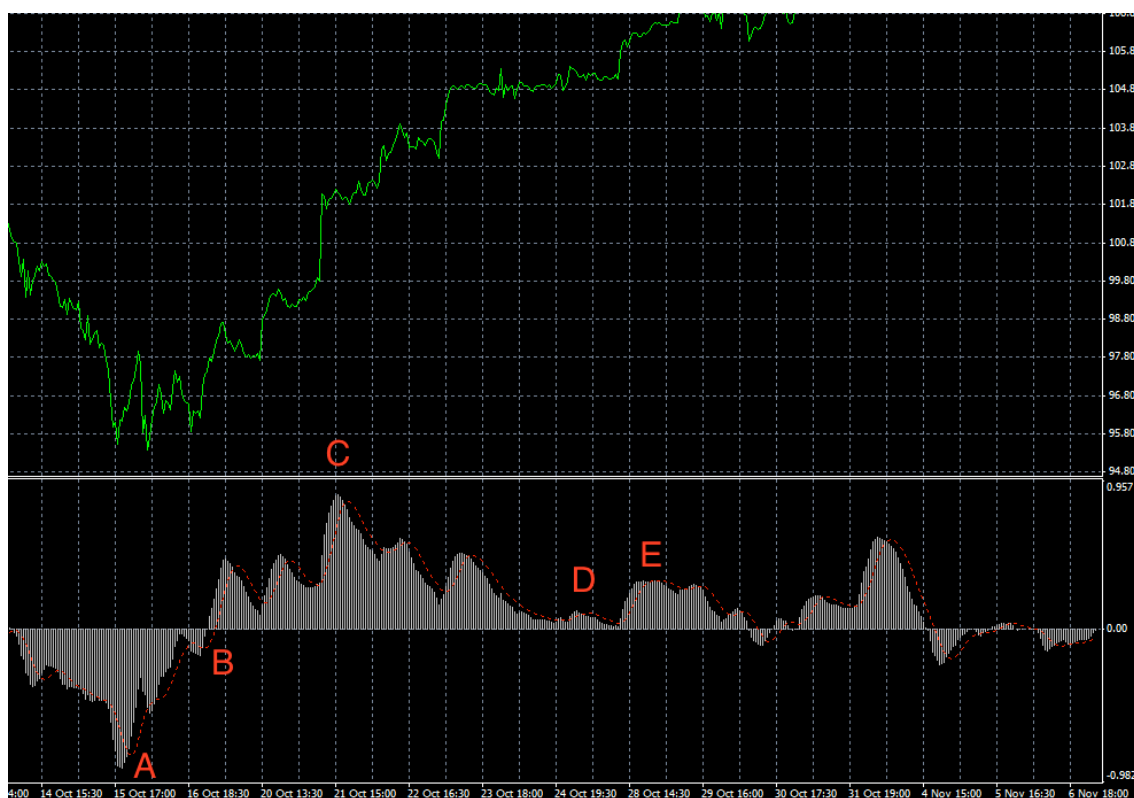


Figure 2: Apple - MACD

As can be seen in figure 2 above, the green line denotes the price movement of the stock while the bottom part of the image is the MACD indicator applied to the stock. As can be seen in the MACD the red line and the border of the grey line indicate the two moving averages used in this indicator. As can be seen at point A the two lines converge and start an upward momentum that continues past point B at which point the trend changes to Point C. During this time it can be seen that the price also starts to reverse its trend moving upwards. At every convergence there is a change in trend, sometimes it is only for a little while but often depending on the momentum the trend can continue for a while before converging and reversing trend again. At point C there is a convergence of the lines indicating a change but as the momentum is quite high at this point it can be seen that price stabilizes as the momentum continues to decrease till point D.

Using this information on a real trade one would put in a buy order at point A and hold it at least till point C at which point the position should be closed. Often this position can be held longer however this requires additional analysis and a certain amount of tolerance to risk.

### Relative Strength Index (RSI)



Figure 3: Apple - RSI

Figure 3 above shows the APPL stock with the RSI indicator in blue at the bottom. The RSI shows the conditions of a security in relation to it being overbought and oversold. As can be seen in the above figure at point A the RSI goes to quite a high point along with the price, which indicates the stock as being overbought. Immediately after that the stock prices shows

a downward movement following the supply and demand laws. This peak in RSI occurs slightly before the stock goes down which is often a great indicator of the market being saturated. As the RSI goes down with the price it bottoms out at point B and moves slightly higher to a more middle value. At this point it can also be noted that the price line also stabilizes.

Implementing this information on a trading system, a sell order would be made as soon as the RSI hits the top limit of a level around 70, and the price moving down immediately after that provides a great opportunity for profit. However at point B which is at a level of around 30 it is probably good to close the position because while in this case the prices stabilized it can often go lower. Again your next decision should be based on your implemented time frame that is the amount of time you plan to be holding a position for, as well as other indicators and metrics.

### Bollinger Bands



Figure 4: Apple - Bollinger Bands

Bollinger bands provide an indicator for volatility in the stock market. Often being able to gauge the volatility helps to analyze the possible risk involved. The red lines mark the bands, as they move closer together the volatility decreases, as they move further apart the volatility increases. As can be seen at points A and B the red lines open up quite a bit. It can also be noted that the stock price doesn't do much however immediately at points C and D the lines move back in close which immediately to open up again quite a bit. Noting the volatility in these bands at points A B C and D it can be observed that the price appears to be quite volatile.

Implementing this on a trading system, it needs to be understood that this does not in any way indicated the direction of the price change only that there is going to be quite a volatile price change. Using this in conjuncture with other indicators provides for opportunities in finding possible trades.

### Head and Shoulders Pattern



Figure 5: Apple - Head &amp; Shoulders

While not being a technical indicator this is an extensively used pattern that appears in the price movement indicating a reversal in trend. As can be seen in the price movement above all the points A, B and C indicate a pattern that is called the head and shoulders. A and C are the two shoulders, B being the Head. It can be noted that every time this pattern occurs there is a reversal in trend.

Implementing this on a trading system would mean that a buy or sell order is initiated every time this pattern appears relative to if it is going to change, with the price going up or down. This again has to be used in conjuncture with other indicators.

Below is a screen shot from the trading system using a combination of the above-mentioned technical indicators.

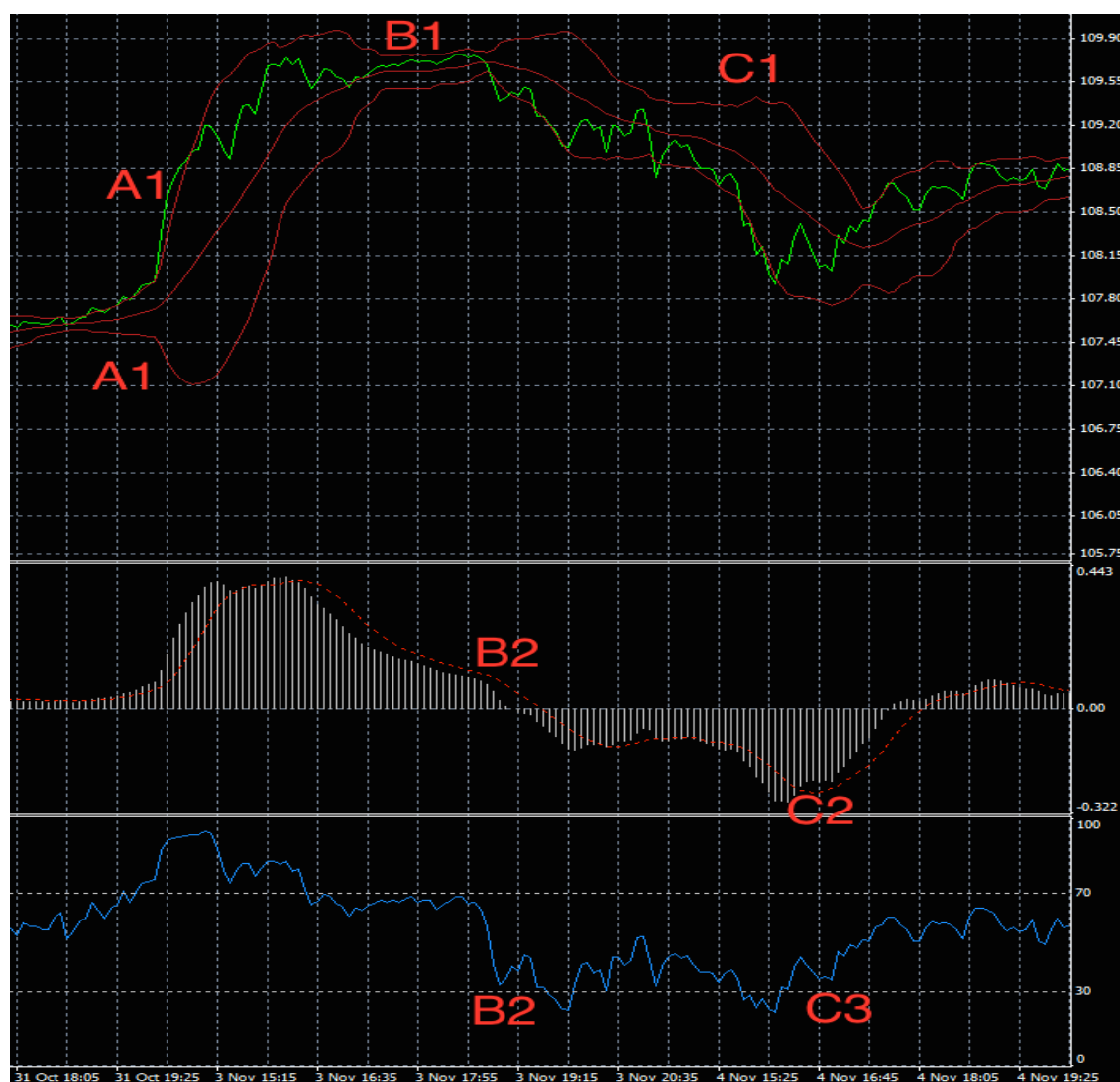


Figure 6: Apple - MACD - RSI - Bollinger Bands

As can be seen all points A, B and C show how each indicator can be used in conjunction with the other to analyze a security and make a decision on how to trade next. Point A1 shows the volatility increasing, point A2 shows the reversal in trend of the MACD and point A3 shows overbought conditions in the RSI at a level of 70. Similarly point B1 shows volatility decreasing, point B2 shows a reversal in trend, and point B3 shows how the drop in RSI level to around 30 indicates over sold conditions. Finally at point C1 one can see the volatility continue to increase as the MACD at point C2 once again reverses its trend, and at point C3 the RSI starts to increase. Each of these points provide for an opportunity to make a trade. Though it may not always work perfectly it does make identifying possible opportunities easier and gives a lot more credibility to decision making.

It is important to remember that no one indicator should be used on its own. Having traded and used those indicators the best results were achieved when a combination of indicators were used to analyze a security.

It is also important to remember that technical indicators are only numbers and do not account for the amount of human emotion involved. Additionally one must remember that often an indicator can signal a move or trend that does not fully occur, these are called false signals. However using a combination of indicators will help spot these false signals and avoid making erroneous trades.

## 6.2 Fundamental indicators.

For the application of metrics for fundamental analysis the company JP Morgan Chase & Co. (JPM) is used as an example.

The following data was retrieved from Bloomberg Inc. on the 7<sup>th</sup> of November 2014 for the fundamental analysis of JPM, and is based on 2014 third quarter results. This type of analysis is often used when considering long term investments and holdings. The ratios of other companies in the industry have been added for comparison

### **Price-to-Earnings Ratio (P/E)**

The P/E of JPM is 9,75. The higher the P/E ratio the more investors anticipate earnings and growth. In this case although not very high, JPM has a comparable P/E ratio in its industry which is slightly lower based on the third quarter of 2014. However in conjunction with oth-

er metrics it appears quite good. That puts it considerably in good health in the current economy and in regard to the financial crisis that hurt a lot of banks. Citigroup has a P/E of 9,86, HSBC has a P/E of 12,55 and BAC has a P/E of 10,64.

### **Earnings per Share (EPS)**

The EPS of JPM is 6,27. This is often a very important metric used in analyzing a company, it's referred to as an indicator of a company's profitability. In this case for every share owned a profit of 6,27 dollars are earned. Once again this is quite good considering the economy and the state of banks in the current economy. However it is important to remember that the value of the share price plays an important role and is often overlooked. The EPS should be used while also considering the price of the share price or capital involved in producing those earnings. Citigroup has an EPS of 5,4. BAC has an EPS of 1,6.

### **Dividend Yield**

The Dividend Yield for JPM is 2,65% according to the third quarter of 2014. This measures a company's dividends relative to its share price; it is the return on investment for stock. These measures the cash flow of an investment, the higher the Dividend Yield the better cash flow there is. Again though it is not too high, it is higher than most other companies in the industry thus putting JPM ahead. Citigroup has a Dividend Yield of 0,07%, HSBC has a dividend Yield of 3,98% and BAC has a Dividend Yield of 1,17% .

### **Return on Equity (ROE)**

The ROE for the third quarter of 2014 for JPM was 9,81%. This measures how efficient a company is at generating profits, and is used as another measure of profitability. High ROE is often seen in high growth companies. Once again compared to other companies in the industry JPM has a decent ROE, where Bank Of America has a ROE of -0,85%, HSBC has a ROE of 7,17% and Citi has a ROE of 5,31% for their third quarters of 2014.

### **Management**

Leadership and how the company is operated is a very important factor in making decisions pertaining to long-term holdings and investments. It is important for investors to know the mindset and ambitions of a company's management and board. Based on my research on stock price changes and having actively followed and analyzed JPM from January 2012 till No-



vember 2014, The CEO James Dimon of JPM has proved to be an extraordinary leader over the years. His management style and leadership has been tested over the years through the financial crisis of 2008 as well during the London whale debacle. Through it all he has been able not just to keep the company from bankruptcy, but has also been able to produce growth as well as profits during times when other banks were struggling. (Bloomberg TV 2014)

Based on the above metrics and the management of the company it would be a good decision to invest in JPM for the next few years. It is however important to keep in mind that due to James Dimon's health conditions things could change at any time so it should be a priority to keep a close watch on the situation at JP Morgan Chase & Co. (Bloomberg TV 2014)

News also tends to influence price movement, any news pertaining to the company its board and employees. The general economy and business news also affects a securities price. So it is important to remember that technical indicators and fundamental metrics often mean nothing in the face of breaking news related to a company.

It is also important to remember that if just one set of indicators or metrics look good that does not mean one should buy and invest, things change in the financial markets very rapidly. It is important to look at the big picture as well as keeping in mind that the metrics and analyses used need to be relevant to the period of investment being looked at.

### 6.3 Application To Trades

Following are two samples taken from actual trading that show how technical analysis can assist in day trading. As mentioned in the startup section this hedge fund will be focused on day trading and occasionally a few swing trade positions. Therefore the following samples are day trades based on Apple Inc. (AAPL) and Oil futures (light sweet crude oil).

## Apple Inc.

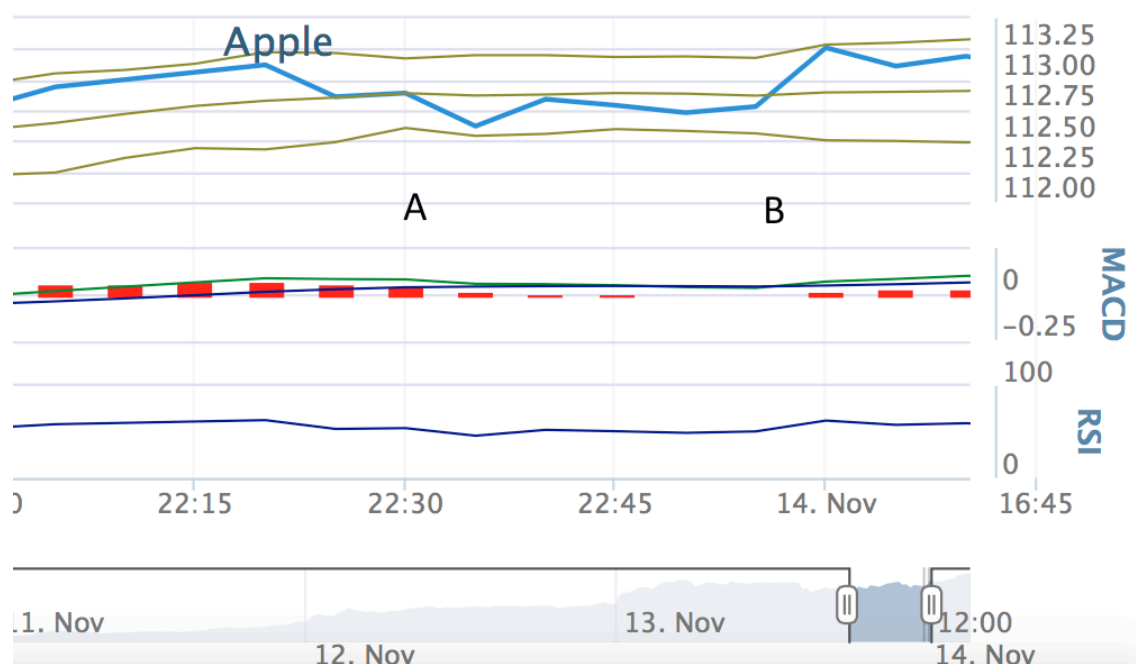


Figure 7: Apple Trade 1

As can be seen in figure 7, it was noticed that from the 12th of November at point A till the end of the 13th of November at point B that the RSI was quite low indicating oversold conditions. It was also simultaneously noticed that the MACD was showing a trend of convergence. Based on that information it can be seen that over the past two days the stock has been decreasing. Due to the RSI being low and a possible change in trend based on the MACD and with market conditions on Friday the price of APPL should close higher for the end of the week. Therefore just before the start of trading on the 14th of November a buy order was put in on 1150 shares of APPL. On opening, the price decreased a little but the continued its upward trend.

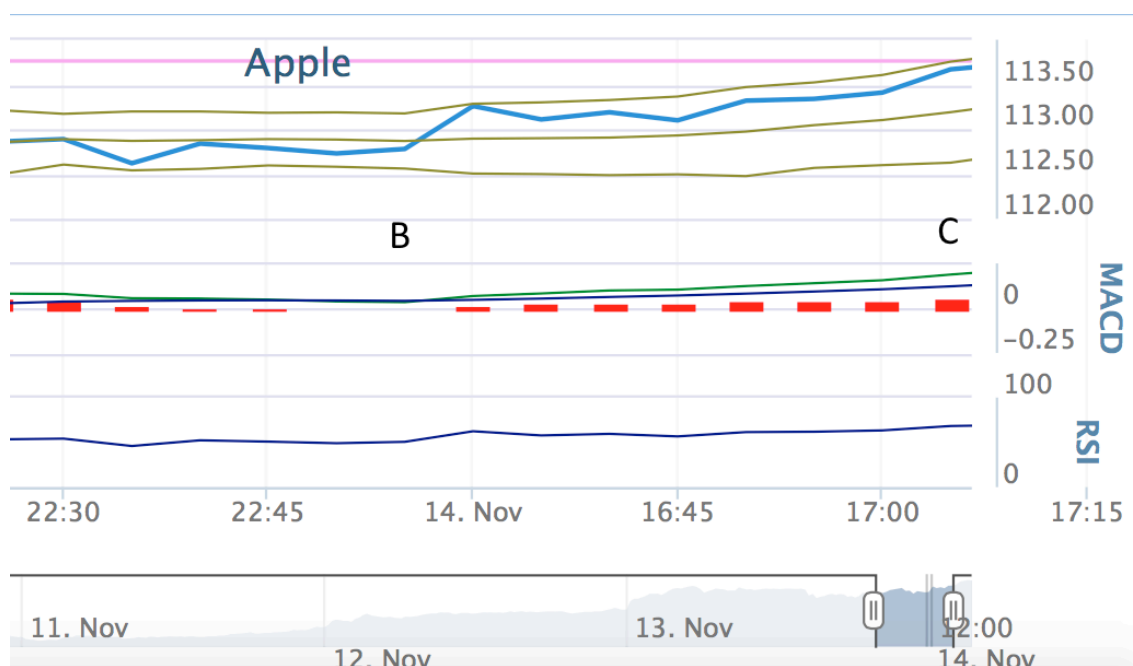


Figure 8: Apple Trade 2

Continuing from figure 7, figure 8 shows the price as it continues to move higher. At point C it was noticed that in addition to the high traffic of volume indicated by the grey area at the bottom of the chart, the RSI was at the top limit of around 70 that indicated overbought conditions. In conjunction of the indicators and the fact that the trend could reverse at any moment, a profit call limit was placed as well as a loss call limit. These limits kick in and close the position should the price reach either limit. At 5:02pm EET, the price reached the profit call limit and the position was closed resulting in a profit of € 231,09. It should be noted that if that profit call limit was not placed the price would have kept increasing resulting in higher profits, however at any moment if the price reversed trend a substantial loss could have occurred.

Below in figure 9, the details of the profit and trade can be seen.

Apple	Buy	€ 231.09	113.17	\$ 130,145.50	€ 0.00	Profit call	11/14/2014	11/14/
895752819	1150 Shares	€ 0.00	113.42	\$ 130,433.00	€ 231.09		4:30:00 PM	5:02:5

Figure 9: Apple Trade 3

## OIL



Figure 10: Oil Trade 1

In figure 10 above, at the top of the figure the open position of the oil trade and its details can be seen. The price of oil was monitored throughout the morning; specifically how the volume of sale in oil stock went up indicated by the RSI and how the volatility shown by the Bollinger Bands decreases just before point A. Based on the reversal of the MACD trend just after point A and the low RSI, a decision was made to buy 9250 barrels of oil. This position was held from just after point A until just after point B with only a loss call limit should the price trend reverse expectantly. At point B it was noticed that the MACD was converging quite fast as well as the RSI being at a level of around 70, indicating a saturated market and a reversal of the trend. Not wanting to risk the profit made with the current trends it was decided to close the position at 17:37 earning a profit of € 965,32.

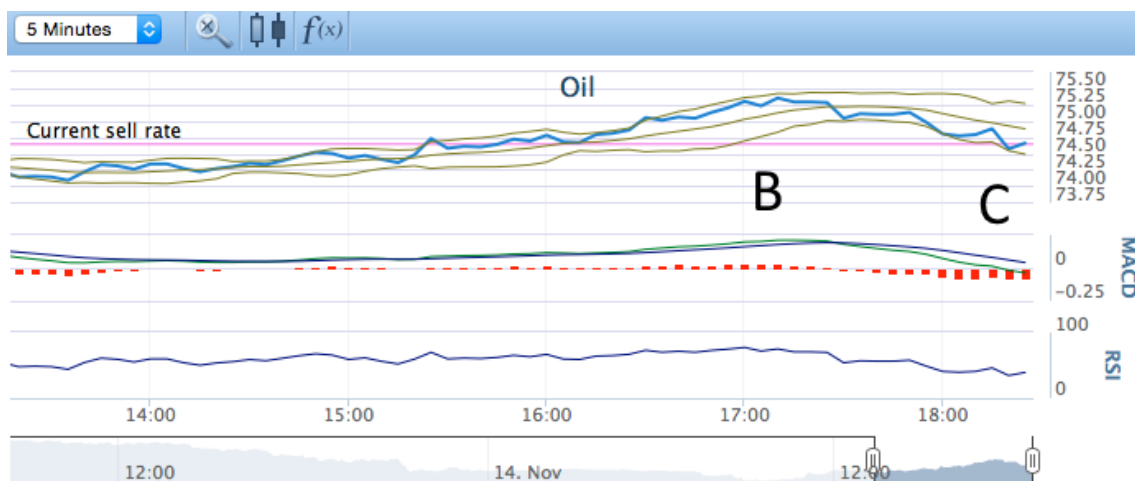


Figure 11: Oil Trade 2

As can be seen in figure 11, if the position was held, the reversal in trend few minutes later would have wiped out any profit made. Although technically a loss call limit was placed with a trailing stop and therefore that would have assured some profit, however it would not be as much as was made on closing the position at its highest price point at point B. If the loss call limit was not placed at all, a significant loss would have occurred if the position was not closed.

Based on the above two trades that occurred on Friday the 14<sup>th</sup> of November 2014, a profit of € 1196,41 was earned by the hedge fund. It can be seen how the technical indicators of MACD, RSI and Bollinger Bands helped identify opportunities and execute successful trades.

## 7 Conclusion

Starting a hedge fund is a risky but profitable endeavor. However managing other people's money is a great responsibility and should not be taken lightly. Regulation authorities like Finanssivalvonta provide that accountability in the role of regulation and oversight. The market value of funds continues to increase every year providing for a billion dollar industry worldwide. (Bloomberg 2014 & McCrary 2002)

There are different types of investment instruments as well as funds, choosing the right type of fund is an important part of setting up a fund. This should be based on the type of policies and investments one plans to do.

It is important to have a plan in place to efficiently run and operate a fund. The bigger the fund the more policies, plans, markets and strategies need to be tested for before commencing.

ing operations. It is also extremely crucial to understand each role in an investment fund and how it affects overall performance and profitability of the fund.

During the study a few technical indicators as well as fundamentals metrics were studied in depth and used to analyze securities. This was done in order to be able to study the value of these metrics and how they perform in real financial markets. Over the study these metrics and technical indicators were used in day trading and swing trading over different time frames as well as different securities to see their effectiveness and accuracy. Each was first back tested on simulation before real trades were made.

Over the course of the research it was found that technical analysis works really well for day trading and swing trading. However technical analysis is not easy to use due to its lack of reliability. On the other hand fundamental analysis seems to provide a much higher accuracy for making correct decisions because it is based on reports and the company's health. However fundamental analysis works better in the long run and is not so effective in short term trading.

Having studied and used both technical and fundamental analysis it was found that using a combination of both to any security provides for the most accurate and efficient results in providing concrete data for decision making and executing trades. However for day trading technical analysis proved to be a better indicator. As can be seen in figures 9 and 10, based on the actual trades used in this thesis, a profit of profit of € 1196,41 was made by the hedge fund using technical analysis. Therefore technical analysis will be used as the main tool in making trades for this hedge fund. As the fund grows larger, positions will be held for longer periods of time thus incorporating fundamental analysis as well.

Overall the thesis proves the importance of combining technical analysis and fundamental analysis in getting the optimal results and profitability for decision-making. It also shows, how the perfect and most beneficial method and analysis to be used depends on the specific situation one is dealing with. It also facilitated an understanding on how these analyses are to be used and implemented.

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