RETURN ON STOCK INVESTMENT

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SUMMARY

The purpose of this project is to conclude which the best strategy is in order to provide our investment with a consistent return on investment in the stock market.

It is currently known that fixed-income investments are not profitable because fixed interest rates are near zero, sometimes even negative. Therefore, different strategies with equity portfolios had to be tried.

Specifically, short-term strategies (day trading) were compared with medium/long-term strategies.

Day trading strategies operate on charts with real-time stock market, and for this it is necessary to understand the technical analysis, which is essential in this strategy. A technical analysis is used to analyze price development with the purpose of forecasting future price trends. However, there is another analysis complementing the technical one: the fundamental analysis.

The fundamental analysis focuses on macroeconomic factors and attempts to solve the same problem, that is, to determine the direction prices are likely to move.

This analysis has been mainly used to make decisions in the medium/long-term.

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1. INTRODUCTION

I had the opportunity to take part in a project which consisted on determining what kind of strategy offers a higher profitability with regards to invested money and on planning strategies in the medium/long-term or in the short-term by doing day trading. Stock markets are our main objective.

The explanation of this work is based on the strategy taken and on the experience acquired.

Moreover, in this project, apart from determining which strategies work better, it can also be seen whether it is possible to trade to make a living, the dream job for many.

Nevertheless, the truth is that day trading strategies are known to be extremely difficult, since it is hard to forecast the direction the market will take, and you also have to take into account that you will be directly facing experts in stock markets. Thus, the assumed risk is great. It is also important to consider the possibility of losing the total of the investment. However, we will not thoroughly analyze this variable since the products offered are inherently risky for the strategy. That is, there is always the risk factor in the stock market. In this project there is a discussion based on the literature on which investment methodology is the most appropriate in terms of profitability.

In order to understand and use these strategies, we have to study much about it and deeply introduce ourselves in the world of the stock market, so the first thing is to understand this market.

Later on, I will explain the technical analysis, which is essential in order to know how to use a chart, since it is the basic tool for day trading (short-term strategy).

It should be mentioned that the technical analysis is extremely extensive, and in order not to write in excess and make it tedious to understand, real examples of its utility at the time of operating are shown while explaining it. Furthermore, I had the opportunity to forecast the Spanish market and world leading equity indices.

In the medium-term, in order to adequately choose which strategy is the best, we also did a preliminary study where we took into account macroeconomic factors and the technical analysis. Therefore, it is necessary and important to explain the fundamental analysis.

After explaining these two types of analyses used in stock markets, I will show the results of the two strategies, each with a duration of three months. Finally, the result and the final conclusion of the project are presented.

2. THE MARKET, A STOCK EXCHANGE

Before starting, it is important to highlight the relevance of financial markets, which contrasts with the lack of information most people have about them. Many people have, directly or indirectly, their money invested in stock markets, although few of them observe how these work, the present moment, and even less predict what will happen. All this is partly due to the media, which practically say nothing about it (unless it is a newspaper specialized in financial markets). Unfortunately, this does not only happen with the stock exchange, but also with the economy as a whole. For example, no one knew what the risk premium is before the recession broke out. They just heard it was bad, and then Google searches multiplied.

People think that investing in the stock market is buying shares of a certain company, wait for a while and see if it has risen or declined. It cannot be denied that this is one of its key products (in fact it was the first), but not the only one. The possibilities of the stock market do not end here, the stock market offers a lot more than that.

The first stock exchange emerged in Amsterdam in the seventeenth century. Its initial role was to bring together companies that needed capital prior to generating profit. It was done through investors that possessed these funds. Nowadays, it continues to exercise that function, but the stock exchange is a market, and as such, its products are numbers and of a great variety. We can buy shares, but also bonds, options, futures, CFDs, among other things. It also offers very interesting products, such as leveraged products (operating with more money than what you have) or products that allow you to earn money in falling stock markets (not just when it rises). Everybody should get rid of the idea that the stock market is only profitable when it rises; this is wrong.

It is a proven fact that the stock market goes up in the very long-term; this is logical because the economy always grows, regardless of whether it is just a consequence of the inflationary effect. However, nowadays money can also be earned when it goes down. In fact, more money is often earned in decreasing than in increasing movements, as these movements are almost always stronger.

There are different ways of operating in the stock market, and each way has its suitable product. This project is comparing two ways of investing in this market by means of day trading, that is, by either trying to get a small daily profitability or using a long-term strategy. There is a huge difference between these two strategies. They both require an intensive preliminary study, but while the medium/long-term strategy intends to properly choose a product at the beginning and let time pass to see whether there have been

gains or losses, the day trading tries to get little returns every day through various strategies. These strategies will be further explained later on in the technical analysis.

2.1.   Herd Behavior

Herd behavior is the tendency for individuals to mimic the actions (rational or irrational) of a larger group. Individually, however, most people would not necessarily make the same choice.

There are a couple of reasons why herd behavior happens. One reason is the natural desire to be accepted by a group. Therefore, following the group is an ideal way of becoming a member. Another reason is the common rationale that it is unlikely that such a large group could be wrong. After all, even if you are convinced that a particular idea or course or action is irrational or incorrect, you might still follow the herd, believing they know something that you do not.

This theory is important in the market due to several reasons. It explains why investors continue to invest up to financial bubbles when they see something incoherent, but it also explains the basis of all theories of valuation that will be seen below. All of them are studied, not because they have a reasonable basis behind, but because any investor operating on the stock market knows these theories, and when someone sees a figure, millions of people see it too and behave as indicated by the theory of that figure. It is the self-fulfilling prophecy, which we cause it to happen with our conditioned actions.

At the same time, this also unquestionably proves that we should not consider the analysis as something almost mystical that is capable of predicting the future, rather the contrary, it is simply a set of rules that we all have accepted and which the more popular they are the more likely it is for the analysis to happen.

3. THEORIES OF TRADING AND VALUATION

It is essential to understand the two types of analysis used to forecast of the stock market before investing in. One of them is the technical analysis, which focuses all the information on the stock quote. It takes for granted that the price discounts everything; in other words, this represents everything that is happening with that asset. Therefore, the main tool for this analysis is the price chart, which tries to figure out the price direction by means of averages, charts and other elements. Basically, the purpose is to identify whether it is a bull, bear or sideways market. This is the first golden rule of this analysis; the market trend is our friend and knowing how to detect it will lead us to make a profit.

The technical analysis can be applied to any type of market as well as to any time dimension. All the markets can be analyzed according to the same principles.

At the same time, it does not matter whether the user is operating in day trading charts or medium-term charts as this analysis can be used within any time frame. Charts of the stock market are fractal structures, that is, the charts are small figures within other bigger figures and thus, the analyses are equally valid at any time. Nevertheless, it is generally true that the more long-term the chart is, the greater the likelihood of the forecast. There are usually many false signals in the short-term.

In fact, in the short-term strategy five-minute and thirty-minute charts are used, whereas in the long-term strategy daily and weekly charts are used. In both cases, the monthly chart will be also studied to see the main trend of the market.

In the technical analysis section (3.1.), the most typical and popular patterns will be explained, as this analysis works with the above-explained phenomenon "Heard Behavior". That is, if all accept the same rules of behavior, the more popular they are, the more likely to be fulfilled.

The other analysis is the fundamental. This, unlike the technical, tries to predict future possibilities from economic data and news. There are assets, such as oil, that are extremely sensitive to certain data. The fundamental analysis will be further explained in section 3.2.

However, is any of the two analyses better than the other?

There are numerous articles supporting a type of analysis and many authors who defend the opposite type. The technical analysis is rejected by some analysts who argue that any pattern found is purely accidental. Their decisions are only based on economic news.

On the other hand, some technical analysts are completely isolated from learning the financial news to not let them influence their decisions in the technical analysis by arguing that the effect of a given news will be reflected in the price action and therefore it is technically analyzable.

One thing is certain, according to economic logic, the fundamental analysis has more sense. However, we often see that economists are only able to explain occurrences a posteriori. Conversely, technical analyses seem to obtain better results by the mere fact that the greater the number of people believing in technical analyses, the more likely their predictions will be real (due to the Heard Behavior).

Nevertheless, bearing in mind that both analyses have significant difficulties to predict the future movement of the market, an intermediate point may be the best choice.

Therefore, in order to choose well, neither of these two analyses should be ignored. The market must be studied by using a combination of the two analyses in order to make better decisions. For this, we must know how to use these analyses.

3.1. TECHNICAL ANALYSIS

There are thousands of techniques and rules of technical analysis. However, I will highlight the essential and the most practical ones followed by all.

3.1.1. Dow Theory (20th century)

The first and most important thing in the stock market is to identify the trend. The trend tells us the market tendency: bull, bear or sideways market. Although we do not identify the trend early, as many of them cannot be appreciated until they have been formed, it is important to analyze it in order to forecast when the opposite trend breaks and starts.

Trends are drawn by joining the maximum or minimum peaks with a line known as "trend line". This may be uptrend, downtrend or trendless. The trendless or sideways trend is also known as "flat market".

Here is an example of the IBEX35. It is the index of the Spanish stock market. The chart shows the trends since 2000. It can be seen how there have been two clear trends: the upward trend, which corresponds to the economic prosperity, and the downward trend, which corresponds to the recession that occurred after 2008. It can also be noted that a bullish trend is currently being generated, which was confirmed when the bearish trend was broken.

Chart 1. Primary trends
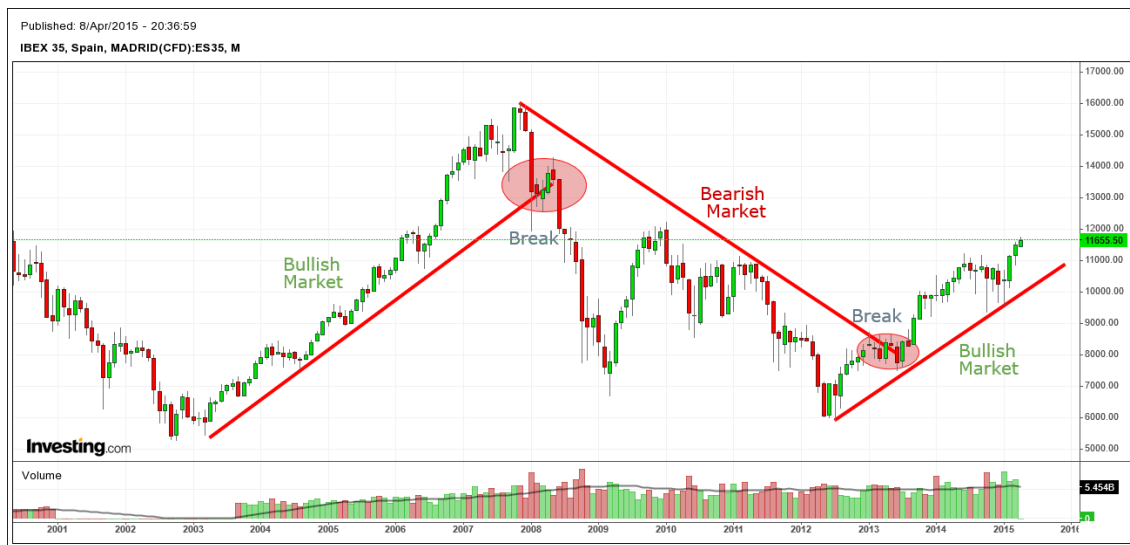
However, the market consists of small movements occurring every day. In this way, three different trends can be identified in the market depending on the time frame:

1. Primary or major trend (long-term charts, for a period longer than a year)
2. Secondary or intermediate trend. This would be a correction in the major trend (medium-term charts, for weeks or months)
3. Minor trend. These are smaller trends consisting of intraday fluctuations (short-term charts; anything less than two or three weeks)

Each trend becomes a portion of its next larger trend.

In turn, the major trend has three phases:

➢   An accumulation phase
➢   A public participation phase
➢   A distribution phase

In order to understand these phases, it is necessary to understand that markets are highly manipulated by 'strong hands' and small operators need to find out the direction towards which they want to lead the market and follow them. The trend should never be opposed.

The accumulation phase is a result of those big investors who want to buy a very big volume of assets. However, it is not easy because a large sudden demand would increase the price, which is still not desirable for them since it would mean buying at an increasing higher cost. Therefore, they buy and later sell a smaller amount; this would be repeated until they get all the desired titles at a good price. It is often thought that this asset has no strength to rise, given the sideways trend they provoke. Nevertheless, this belief is wrong.

In the final part of this movement, they buy a large amount of titles in order to generate an increase, which alerts other investors and thus more people begin to buy. This way we arrive at **the public participation phase**; the phase of the cycle. In this phase the value is allowed to increase until it is exhausted, that is, until there is not virtually more new money to invest in the value. When "strong hands" detect this, they decide that the value cannot increase more and they begin to sell.

Thus, we arrive at **the distribution phase**. The same problem arises here; if they suddenly sold everything, they would cause a sharp drop in value and they would also gradually sell at lower prices, resulting in the cancellation of the desired profit. Therefore, they start by selling an amount, then they repurchase another small amount and so on, as happened before. When they have a few titles left, they sell all of them quickly, causing an anticipated fall. These moments usually coincide with euphoria in the news. This would be a way of deceiving so that they can sell.

An example in the daily candlestick chart of Crude Oil can be seen here.

Chart 2. The three phases

3.1.2. Support and Resistance

It consists of peaks and troughs which determine the trend. In other words, these are price levels that establish limits on the assets. These levels are difficult to pass. This may be due to the fact that many investors are stuck at that level and cause pressure, to the fact that it is a historical limit, that is, the value has rebounded every time that it has reached this price, or maybe because there are psychological limits such as integer figures (10,000 points) or due to other reasons.

The troughs, or reaction lows, are called **supports**. That support is a level or area on the chart under the market where buying interest is sufficiently strong to overcome selling pressure. As a result, a decline is halted and prices turn back up again. Usually, a support level is identified beforehand by a previous reaction low.

Resistance is the opposite of support and represents a price level or area over the market where selling pressure overcomes buying pressure and a price advance is turned back. Usually, a resistance level is identified by a previous peak. The greater the support or resistance is, the stronger the level and the harder it will break.

There are several rules related to these factors. The golden rule is that when a support is reached and crossed (the price breaks it and falls more), it becomes a resistance for the value (it will be difficult for the value to go up again and to be above the former value) and vice versa; when resistance is overcome upwards, it becomes a support. This is how support or resistance levels reverse their roles.

Another rule is that a support or resistance hardly ever breaks the first time any of them is reached. That is, at first this factor is in compliance with the theory, but if these limits are affected by the price, attention must be paid since it could break them.

Finally, it should be noted that there are **pullbacks and throwbacks**, which are movements going back to the support (pullback) or resistance (throwback) level once they have been broken. However, it can never cross the level but just reach it. It is important that this movement occurs because it confirms the breakage.

An example of Support, Resistance, Pullback and Throwback in a weekly candlestick chart of IBEX35 can be seen below:

Chart 3. Support, Resistance in weekly candlestick chart

As shown in this medium-term chart, due to the global crisis of 2007, the IBEX35 lost important levels such as 11,200 or the range of 9,000-9,600 points and more. The 16,000 level is a record peak and the 6,000 level is the minimum. Every time it tried to raise, it failed to get back on its feet because it clashed with the range of 9,000-9,600 points, from which it fell back sharply once again. It is very difficult to break a resistance level on its first attempt, especially after a long time, because the longer without crossing the limit, the stronger it is. A clear example of prior support, which becomes a new resistance level later on can be seen. Likewise, there is a pullback initially trying to go back to the previous level without success, and then up to 4 attempts to cross it again before definitively breaking it. After two years, once the resistance level is broken, it becomes a support level for the value. A minor initial correction confirming the support level can be seen. This is the throwback confirming the new support.

Nevertheless, after overcoming this resistance, the price of IBEX35 moved in a sideways market throughout 2014. This phenomenon can be seen in the next daily candlestick chart:

Chart 4. Support and Resistance in daily candlestick chart

A strong resistance at 11,200 level and the previously mentioned support at 9,600 level can be seen. These limits were tried to be crossed on several occasions but without success. Finally, this year in March the resistance was broken and this resistance has become a new support now. This breakage also finally confirmed that the value has decided to undertake an uptrend. For the uptrend to continue, it should not go below that level. Moreover, it should perform a pullback up to 11,200 points and then bounce. Thus, the strength of the new support would be confirmed.

These are just some examples of resistances and supports in the IBEX. There are more, as the 16,000 level, which was a record high. When it goes up to that level, it will fall down again and the same will be repeated; it will depend on the development and growth of the economy whether it finally overcomes the level. The fact is that the same patterns are always repeated.

As said before, regardless of whether it is support or resistance, the same happens but in the opposite direction. When a value falls until the support, the normal situation is that it stays there and bounces, and vice versa. The longer without exceeding it, the stronger the limit is. Once this level is broken, the price usually rockets up and so, one of the techniques to operate in day trading is to observe the breakage of these limits.

3.1.3. Price Patterns

3.1.3.1.   Gaps

Gaps provide us with one of the strategies that has been used more extensively in markets. Price gaps are simply areas on the candlestick chart where no trading has taken place. Normally, there are not remarkable differences between the closing price of the previous day and the opening price of the next day, but this does not always happen that way. This is usually due to the fact that European markets have a different timetable to the American's. The stock market in Spain opens from 9:00 till 17:30; the US stock market opens at 15:30 and closes at 21:00 Central European Time. US markets guide the rest of the world, and the same happens with its economy. If something important happens at those times (when the Spanish stock market has already closed), it will be reflected the next day with a significant price change. That is when the gap occurs. Sometimes these holes are also due to unexpected news.

There is a rule that says that 70% of the gaps are plugged on the same day, that is, if the price opens with 100 points less than the previous day, it usually recovers those 100 points on the same day. However, again, it does not always happen and it can take days to plug gaps or there may be some of them that will never be plugged.

The fact is that this pattern offers great business opportunities because these gaps can be very large and it could be worth operating with them.

Here is an example of some gaps in IBEX 35:

Chart 5. Gaps

In the example, the first gap (marked with the first arrow) is covered during the following hours. The second gap is also covered, but it happened after a strong increase and thus, it would have made us suffer in the hypothetical situation in which we had bet for the gap being closed. The third closes the following day.

So, we can see how it sometimes complies with the theory and sometimes does not, but it is interesting to know this strategy as it is one of the most used.

3.1.3.2.   The Head and Shoulders Reversal Pattern

It is a pattern of special relevance as it is probably the best known and most reliable of all major reversal patterns. Its importance lies on the notice it gives when there is a change in the trend. Just to give an example, imagine a bullish market which suddenly begins to lose its momentum.

This pattern, as the name suggests, represents a left shoulder; a head and right shoulder formed on a neckline. The pattern is considered valid when the head is larger than the shoulders. The breaking of the neckline completes the pattern. The minimum objective is the vertical distance from the head to the neckline projected from the breaking of the neckline. A return move will often occur back to the neckline, which should not cross the neckline once it has been broken (it is a pullback or throwback).

Here is an example on a daily chart of the Dow Jones index in the US market. It is the Head's and Shoulders' Top as it has broken an uptrend.

Chart 6. Head and Shoulders Top

The inverse pattern can also be given, the Head's and Shoulders' bottom. The bottom version of this pattern is a mirror image of the top, which would indicate a rise in the share price. An example in a weekly chart of the Hang Seng Index of China can be seen:

Chart 7. Head and Shoulders Bottom

3.1.3.3.   Triangle

It is a figure that occurs in uncertain markets, where buyers and sellers do not really know which position to bet for. A triangle is gradually formed, that is, the price narrows until it breaks on any of the sides. There are ascending, descending and symmetrical triangles. An example can be seen for the case of Crude Oil:

Chart 8. Triangle

Apart from the patterns, it is important to know the different indicators and oscillators that can help us to better study the price in the technical analysis. Like the patterns, there are plenty of varieties of these tools in the market. I will only explain the most popular because they are the ones used in this project.

It should be mentioned that such is the importance of indicators and oscillators that virtually all techniques used in day trading are composed of a mix of indicators, which help us to make the entry or exit of the market. It is also important to use several indicators at the same time because the use of only one indicator can lead us to make a lot of wrong decisions as it usually gives many false signals, especially in the short term. It is important to bear in mind that these are just indicators and not fully viable systems.

3.1.4. Moving Averages

Moving averages are the most basic and used indicators for both the short term and long term. Moving averages are considered to contain all the information about the price. They can be simple, exponential, or potential averages and can be comprised of the periods we want.

The main use of moving averages is to see the main market trend. When the price crosses this average, upwards or downwards, there may be a turnaround.

There are several ways of using moving averages and combining several of them to create a strategy. Therefore, there are numerous strategies only based on moving average crossing.

An example of a method which is based on a crossing between three exponential averages is called the "Triple Crossing of Death". Moving averages of 4, 18 and 40 periods are used. The requirement is to wait until all of them come together or are at least very close to one another, and then, pay attention to which direction the average of 4 periods crosses the others, because a strong movement (upwards or downwards) is usually generated in this direction.

Moreover, it is common to use three moving averages to detect the correct market trend: one of 200 sessions for the long term, another of 60 sessions for the medium term and another of 7 sessions for the short term. However, each trader actually looks for the one that best fits their charts. For day trading strategy, I normally use a simple average of 9 sessions.

In order to operate with moving averages, the first sign of entry into the market is to look at the direction to which the average is rotated. The second sign is that this average needs to hug the price. That is, if the average is pointing upwards, the price has to be above the average; if it is pointing downwards, it has to be below the average.

Once it has entered the market, the moving average is also used as a STOP; that is, as support or resistance. If the price crosses the moving average, it is possible for the trend to change.

I take this explanation to detail one of the strategies I have used the most in day trading. The purpose of this strategy is to observe the moving average of 9 periods - Stochastic - RSI - MACD, in that order (the other oscillators will be explained below). As mentioned, the entries are marked when the price crosses the average.

Chart 9. Moving Average

Nevertheless, many other times it can also be observed how it gives several false in and out signals, as in 2010. This is why a single indicator should never be used. On the contrary, several of them should be used to confirm the position.

3.1.5. Oscillators

Oscillators are an extremely useful operational tool. While moving averages (previously explained), they tell us which the trend is and whether it is favorable for us. Oscillators can provide these trends with nuances. We can, for example, see when an uptrend is over a period of overbought, i.e. a situation where the rise has been so exaggerated that

it is unlikely that it will end, or vice versa in sales, which can tell us that a market is oversold.

Oscillators are also very useful in situations of non-trending markets or lateral movements. In fact, at the moment it is the only tool that is able to generate operating signals. It should not be forgotten that all the indicators that will be studied below, under the heading of oscillators, are secondary indicators. The first will always determine the trend in force, or whether there is no trend. Once determined, the oscillator will help us to move more comfortably within that trend or lateral movement.

3.1.5.1.   Stochastic

This indicator was created to detect when a movement ends. It indicates when a market is overbought or oversold. In this situation, it is possible to observe a correction in the opposite direction.

The Stochastic indicator considers a market to be overbought if it is above level 80, and oversold when it is below level 20. The explanation would be the fact of considering that an overbought market indicates that there is no new money to keep the price rising, therefore, it gives notice of an exhaustion of the market, which will lead to a correction.

Stochastic indicators are formed by two lines, and their crossing is important. The strategy to follow is (continuation of the aforementioned strategy) the following:

- •   When a market is overbought, that is, the oscillator is above level 80, the entry would be SELL when the two lines cross in bearish direction.
- •   Conversely, when a market is oversold, with the oscillator below level 20, the entry will be BUY when the two lines cross in bullish direction.

Chart 10. Stochastic

As can be seen, the Stochastic indicator would have given us the entry to the market shortly before than the moving average, but it would have also given us some false entries. This is what I mentioned before; it is just an oscillator and therefore, it can fail. In addition, in markets with strong trends (bullish or bearish) it is common to indicate that the value is highly overbought or oversold, as happened throughout the years 2004-2008.

3.1.5.2.   The Relative Strength Index (RSI)

The RSI is an oscillator very similar to the Stochastic. It also indicates overbought and oversold areas, but taking values 70 and 30.

The strategy would be to BUY when the area of 30 is crossed with upward direction and SELL when the area of 70 is crossed downwards. The direction that the RSI marks is very important.

Chart 11. RSI

As can be seen, this oscillator would have given us entrance even faster than the Stochastic and the moving average. It is also important to remark that unlike the Stochastic, it avoids many false entries, and therefore it is important to use several of them.

3.1.5.3.   Moving Average Convergence/Divergence (MACD)

It is an oscillator that is composed of two lines, one called MACD and the other called SIGNAL, which is an average of the MACD. The entrance would be given at the intersection of these two lines. The further apart these two lines have been, the more reliable the change in the trend:

- BUY when MACD crosses SIGNAL from the bottom up. The position is much more reliable if they cross one another below the 0 line.
- SELL when SIGNAL crosses MACD from the top down. The position is much more reliable if they cross one another over the 0 line.

Chart 12. MACD

As we see, this oscillator is more delayed than the previous ones, so it is often used as confirmation of entries, especially in the day trading, but it is important to keep it in mind.

If we look at the chart, it has a histogram in the middle that indicates when those lines are going to cross. If the bars are very large, it means that there is still a long time until they cross, so the entry is unreliable, but if the period of time is short, it means that the change is approaching.

Once inside, it should be attentively observed so that the crossing is established between the two lines and to tell us that the entry has been confirmed; that will mean that we are going in the right direction. If it is not confirmed, it must be canceled.

These oscillators are also important in order to observe **divergences** in the market. For example, when the price indicates increases by means of the rising peaks that are formed. However, peaks in oscillators are reversed and decreasing. If an oscillator indicates the opposite of the price, we must be alert, because a strong movement opposite to the one indicated by the chart may be approaching.

3.1.6. Fibonacci

It is one of the most widely used tools in the technical analysis. It serves both for intraday and long-term analysis. It comes from the "divine proportion'' of the series invented by the mathematician Fibonacci, although like other tools, its foundation, rather than being based on reasonable demonstrations, is met by the herd behavior (already explained) because it is a tool widely used by investors.

When it is applied to charts, it basically explains that after a strong movement there are usually key regressions: 38.2%, 50%, 61.8% and/or 100%. The way to use it is to draw the Fibonacci from the start of the movement to the end.

Its interpretation can be diverse, but the important thing is to look at the levels at which the regression can be stopped and then to the points that have to be overcome for the trend to come back since, as we will see, these levels marked by the Fibonacci can act as support or resistance, for or against the movement.

Chart 13. Fibonacci in medium term chart (time frame 4hours)

Chart 14. Fibonacci in short time chart (time frame 5 minutes)

3.1.7. Volume

The volume is essential in the market, starting with the fact that in a market without much volume it is not advisable to operate because we get stuck with assets without being able to liquidate them. In markets where there is a lot of volume, there are various techniques to operate.

Their functions are diverse and several oscillators have been invented based on the study of the volume. The volume indicates the strength of the movement, so for example, in a continuous rise, if we observe a low volume or that it goes down, it can be interpreted as a sign of exhaustion.

The volume also tells us the times when it is recommended to operate in the stock market for day trading. That is, the Spanish stock market opens from 9:00 to 17:30, but when there is more volume is from 9:00 to 11:00 and from 15:30 to 17:00 (as it is when the American market opens). It is therefore advisable to operate within this time period because it is when there is movement; the rest of the time the market moves very little and business opportunities are rarely found.

Finally, it is important to say that there are many more indicators, oscillators and a multitude of technical analysis techniques, but these are the basic ones that every trader should take into account and use.

3.2.   FUNDAMENTAL ANALYSIS

The purpose of the fundamental analysis is to study how macroeconomic data will affect the stock market. It does not only include the information on television news, but also the data published in the economic calendar or the interviews given by Mario Draghi, president of the European Central Bank, or Yellen, president of the Federal Reserve. This data can move the market a lot, in addition to being important trendsetters in the short and long term.

As it relates to television news, there is a law in the market that says "buy with the rumor, sell with the news". If television channels that do not usually cover stock market issues suddenly indicate that the stock is rising a lot and that it will keep on rising, you have to be extremely careful because the fall of the world could be just around the corner, and vice versa, when we hear that everything is falling and will keep on going down, that is the time to buy.

This phenomenon results from the aforementioned trend phases; the market is manipulated by the "strong hands" and their need to buy / sell huge volumes.

In order to understand the fundamental analysis, it is important to know how a number of factors work, such as rising or falling interest rates, the price of oil, the unemployment rate, expected and actual inflation, GDP, etc.

3.2.1. Interest Rates

One basic axiom in finance is that time is money. The so-called risk-free interest rates remunerate the savings invested in government bonds. News about interest rates greatly affects the stock market, at the same time that the news is generated and also later on, affecting long-term trends.

In short, a rise in interest rates is usually one way to contain high inflation because it leads to higher borrowing costs and lower consumption, which drives prices and inflation down.

The market can interpret the movement in interest rates as good or bad news depending on the moment. In general, investors prefer to invest in fixed income because it is less risky. Therefore, if the offered risk-free interest rate is high, the market volume will fall (this is detrimental for market). In this case, the drop in interest rates is interpreted as a good notice.

However, sometimes rising interest rates can be interpreted as something good, as interest rates usually go up when the economy is strong. But if interest rates continue to rise, that will eventually have a negative impact and will lead to demand contraction.

Then, the effect of the movement in interest rates can be positive or negative depending on the moment.

It is noteworthy that the market anticipates all movements that occur in the near future.

3.2.2. Inflation

Inflation is closely linked to interest rates. Inflation is considered to be beneficial when it is between 1% and 2%, as this results in a growth of the economy without being excessive. High inflation has a negative impact because money loses value over time faster, which leads to deterioration in purchasing power. Deflation, on the other hand, is also detrimental because it means that the economy is in a period of recession, which is what we have had in recent years.

3.2.3. GDP

GDP indicates the growth of the economy, and is also closely related to interest rates. A good GDP growth reflects a buoyant economy, and companies with growing profits drive the market higher. However, a very high GDP growth for a long time may have an excessive euphoric effect that results in high inflation, with the negative effects discussed above.

The stock scenarios based on the GDP and interest rates would be:

Chart 15. Likely stock market scenarios based on the GDP and interest rates

Interest Rates /GDP	GDP upward (growth)	GDP downward (recession)
Rising Interest Rates	Mixed / Variable	Bearish
Falling Interest Rates	Bullish	Mixed/Variable

3.2.4. Unemployment rate

The unemployment rate represents the percentage of people in the country who are actively looking for work but remain unemployed. A high unemployment rate is a human and personal drama, which also means breaking down production, a waste of human capital and an overall loss of purchasing power for the whole economy. Traditionally, excessive unemployment has been linked to negative inflation, also referred to as the "misery index". Unemployment is considered a "lagging indicator" because it is the result of a long period of economic decline.

Therefore, if the unemployment data (coming out every month) increases, the market will fall; if it decreases, the market will rise.

Nevertheless, it is noteworthy that this rate is currently interpreted backwards in the American market. This is due to the fact that the US economy recovered several years ago. The stock market has been rising continuously since 2009-2010. The US unemployment rate is around 6%. For the US, any further decline in the unemployment rate will result in an economy that is too good, and will eventually lead to higher interest rates, which is not desired.

There are many factors that affect the markets, but I will only explain one more, which is not typically seen, but at the present time affects the markets and the European economy.

3.2.5. QE (Quantitative Easing)

Chart 16. The theory of Quantitative Easing[1]
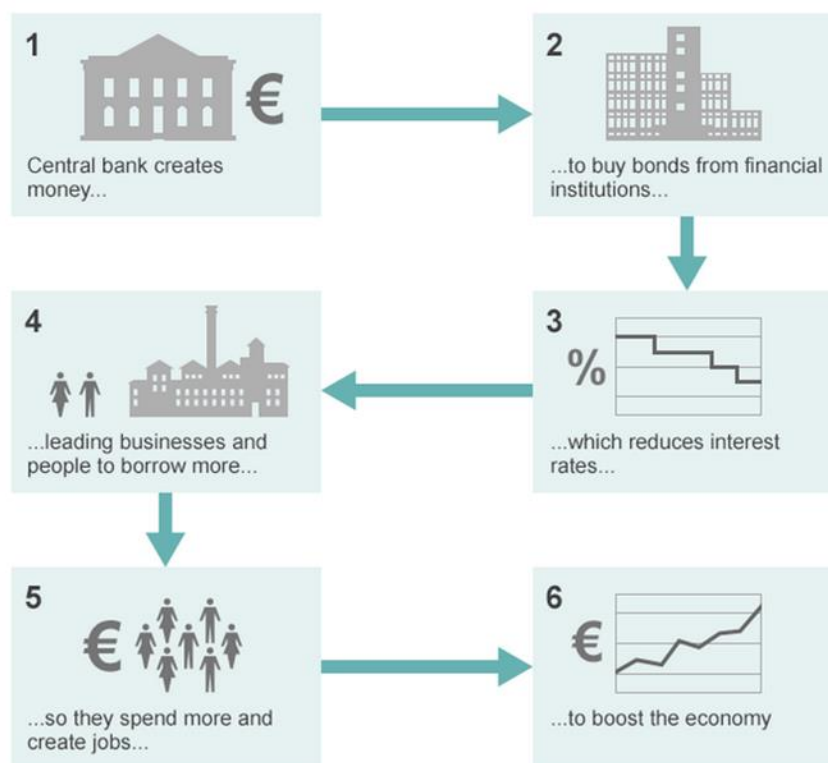
This data is a clear example of how one factor can affect the market in the short and long term.

Central banks are responsible for controlling inflation. Before the crisis, they kept inflation under control by raising or lowering overnight interest rates. This way, they reduced or increased demand, as explained earlier in this document. With the arrival of the global recession, banks reduced these rates to nearly 0%, and sometimes these are even negative. In fact, in some countries, if people want to invest in government debt, they will pay a small percentage fee to do so.

However, as we have observed, certain economies, such as the Spanish economy, have been immersed in the recession for approximately six years, and lower interest rates have not reversed the economy.

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[1] Source: What is quantitative easing?, 22 January 2015. *BBC News*, [online]. Available at < http://www.bbc.com/news/business-15198789>
[Accessed on 17 May 2015]

Therefore, the presidents of central banks of these countries in recession have used other tools to solve the problem. One tool is the QE, which is known colloquially as "massive printing of money". It consists of pumping money into the economy from central banks by purchasing securities, such as government bonds. Thus, the purpose of QE is to stimulate economy growth by encouraging banks to make more loans. This increases investment and confidence in these areas.

QE was first attempted by Japan's central bank to arrest a period of deflation following its financial turmoil in the 1990s. It is noteworthy that there is disagreement about whether the initiative had the intended effect of stimulating the Japanese economy.

Both the Bank of England and the US Federal Reserve embarked on QE in the wake of the 2008 financial crisis. Now, Mario Draghi, president of the European Central Bank, has decided to take the same path. The day the news broke there was a lot of volatility in the markets, but the most important result is that it marks the upward trend in the markets.

3.3.   RANDOM WALK THEORY

Random walk is a stock market theory that states that price changes are serially independent and the past movement or direction of the price of a stock or overall market cannot be used to predict its future movement. The price movement is random, unpredictable and independent of each other, but has the same probability distribution and over a period of time, prices maintain an upward trend. This theory is based on the efficient market hypothesis, and thus the best strategy is a simple "buy and hold". It preaches that both technical analysis and fundamental analysis are largely a waste of time and are still unproven in outperforming the markets.

Therefore, the author of the theory, Malkiel, constantly states that a long-term buy-and-hold strategy is the best and that individuals should not attempt to time the markets. Attempts based on technical, fundamental, or any other analysis are futile. He backs this up with statistics showing that most mutual funds fail to beat benchmark averages like the S&P 500. It is hard to say how much truth there is to this theory; there is evidence that supports both sides of the debate.

4. SHORT - TERM STRATEGY

4.1.   Which asset to operate?

Our short-term goal is speculation. The best instruments for this purpose are futures and options, but especially the futures for day trading. Traditional market shares do not give us many opportunities for trading in the short-term. In addition, the futures have numerous advantages for a speculator.

Futures are exchange - traded contracts to sell or buy standardized financial instruments or physical commodities for delivery on a specified future date at an agreed price. The origin of these contracts is in the commodities market, particularly in agriculture. At first, they were invented to allow people to cover their risks. For example, imagine a man who grows rice and is afraid of a drop in the market price happening at the time he can sell his merchandise. This man can cover the risk in the futures market by selling a rice future contract at a certain price and date. Thus, once he has sold the contract, this person is covered because no matter what happens to the price in the future, he has already sold his rice at the stipulated price. Also, if before the due date the farmer finally decides not to sell his rice by means of the contract for whatever reason (imagine that the price has risen sharply in the real market), he can cancel the contract by doing the inverse operation in the futures market. That is, if he sold before, now he will buy the contract by paying or receiving the margin between prices.

As shown in the example, with this type of contract we can buy and sell, but we can also sell first and then buy, depending on whether we position on the side of the seller or the buyer. That is, we can position ourselves in "long" (buy to sell) or "short" (sell to buy).

Nowadays, the futures are still used for hedging purposes, but even more for speculation, since it is the best tool for speculators.

This is the main advantage of futures; we can operate in the stock market both uphill and downhill. Therefore, it is possible to win when the market is falling. In fact, futures usually lead to gains more quickly in bear markets than in bull markets.

Other advantages of these contracts include their large volume and lower fees when compared to shares. Broker fees are important as multiple buy and sell orders can be performed in day trading. Many brokers add a small amount at the price of buying and selling market (price range), and thus it is paid upon entering the market, without having to think about them later.

Another important advantage is the leverage. By hiring a future, you just have to pay a margin call, which is calculated based on the asset in question, market volatility and the

broker. This is the great appeal and the great risk of the futures markets; we can speculate on a huge amount of money without having it.

We have chosen Activtrades broker because they use MetaTrader4, a simple and quick platform that also offers a chart tool. That is, we can enter the market with a single click. The most common futures we used are index futures, specifically IBEX35, DAX and also CRUDE OIL. We have chosen these futures because they have enough volume and we can better understand which macroeconomic data affects them.

We have also observed other indexes to check their behavior, such as SP500 or NASDAQ.

Here is an example of the platform MetaTrader4, which is used by the broker Activtrades:

Chart 17. MetaTrader4, platform to trade
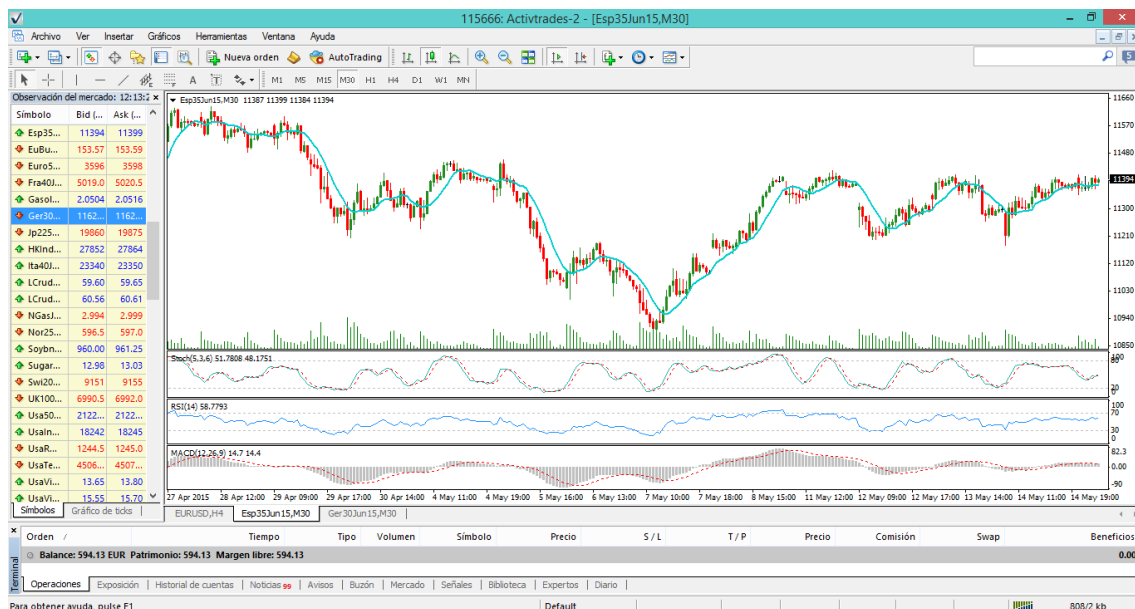
4.2.   Strategy and Results

In this section, a few real examples of the above-mentioned strategies can be seen. Things are not so clear in real life and strategies that are often used sometimes indicate a path in the market and then something else happens. Therefore, I will give an example of a successful strategy and another example of the same strategy, but where the result was contrary to that expected, resulting in the loss of money.

4.2.1. GAP Strategy:

Chart 18. Successful Gap Strategy
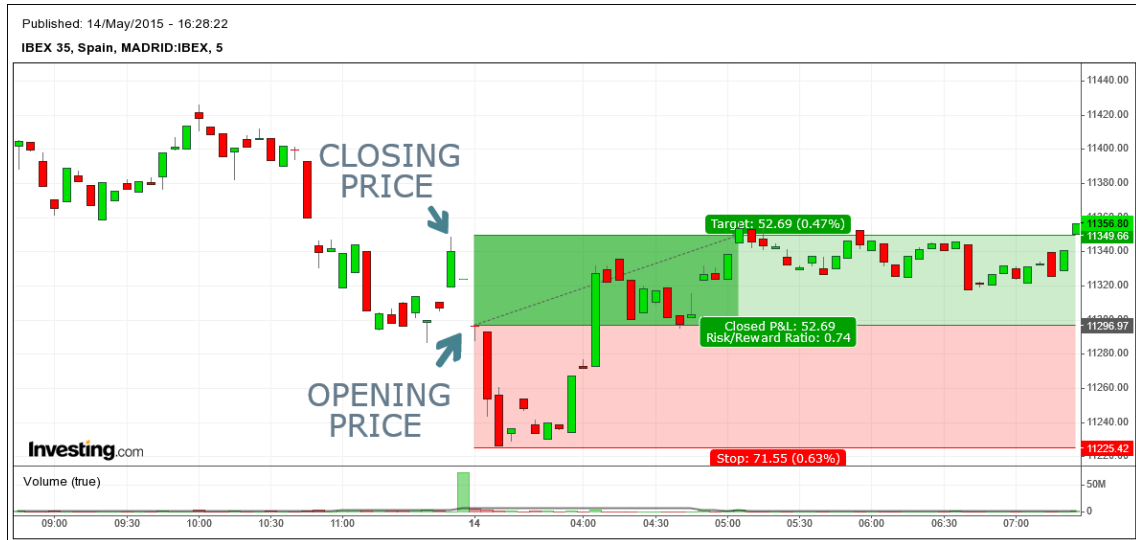
The market opens at 11,296 level. The target of this strategy is the previous closing price, 11,349. Therefore, we open a long position. At first, the price falls but then it begins to rise until reaching our goal.

Chart 19. Failed Gap Strategy

In this chart we can see that the strategy fails. The price does not execute the target.

4.2.2. Strategy by MM9-Stoch-RSI-MACD:

Chart 20. Successful Moving Average-Stoch-RSI-MACD Strategy

Chart 21. Failed Moving Average-Stoch-RSI-MACD Strategy

In this chart, we can see that oscillators indicated to buy, but the price falls.

The price has had an initial fall, after which indicators already suggest an upturn. Stochastic crosses below level 20, RSI is rotated upward below level 30, MACD also crosses below 0 looking up, and the price crosses the average. However, it is a failed upturn as the price finally falls back strongly.

Chart 22. False Signals of Moving Average-Stoch-RSI-MACD Strategy

Here we see an example of false signals to enter the market that can make us act irrationally. Stochastic crosses downwards above level 80, RSI also points down and MACD also crosses. However, we expect confirmation that the price is below the average. Once crossed, we decide to sell. The price falls slightly, but then it gives us a lot of false signals to sell, to buy, to sell, etc. suggesting an exit because there is no clear trend.

4.2.3. Triple crossing death: EM4-EM18-EM40

Chart 23. Successful Triple crossing death

Chart 24. Failed Triple crossing death

After a period without movement, moving averages cross downwards indicating to sell. It drops initially but recovers soon and the price shoots up in the other direction. In this case, by selling, we would have seen significant losses.

This is the biggest problem of this strategy; as soon as there is little variation of the price, averages cross giving false signals.

4.2.4. Break, Breakout, Breakdown and Failed Break

Break

It is a sudden and unexpected change or move in the price or market value of an important level. This type of break is not necessarily something negative as it could occur either upward or downward. There are two types of break, breakout and breakdown. A breakout is the bullish counterpart to a breakdown.

Breakout

In practice, a breakout is most commonly used to refer to a situation where the price breaks above a level of resistance. Once a resistance level is broken, it is regarded as the next level of support.

Breakdown

It is when the price breaks below an area of support, which has been identified by using technical tools such as moving averages, trendlines and chart patterns.

Failed break

It is a price movement through an identified level of support or resistance that does not have enough momentum to maintain its direction, the price fails to make the sharp move that many were expecting.

A failed break is also commonly referred to as a "false breakout".

It is very important to know this fact because breaks provide very good business opportunities. As we said, when a break occurs, it usually leads to a strong movement, but if it is a failed break, it can lead to large losses. There are many false breaks in future contracts.

An example of these concepts can be seen in the next chart:

Chart 25. Breaks

In the first break, after those two red candlesticks of big volume, the break can be interpreted as a real change in the trend, but it is not. Finally, after several attempts, the support breaks and the price falls. In this case, it has gone in the direction indicated from the start.

4.2.5. Head and Shoulders Reversal

Chart 26. Successful SHS in Crude Oil Chart

Chart 27. Successful SHS in IBEX35 Chart

The head and shoulders reversal, unlike other patterns, tends to work quite well, but they do not occur as often as other patterns. In addition, sometimes it is difficult to observe them until they are completed.

4.3.   Final Results of the Short-term Strategy

Chart 28. Results of Day Trading

Expected Payoff (mean)		-6,9421	
Standard deviation		**59,4859**	
Loss trades (% of total)	32,08%	Profit Trades (% of total)	67,92%
Maximal Drawdown	- **505,00 €**	Largest profit trade	**190,93 €**
Average Drawdown	- 53,26 €	Average profit trade	14,90 €
Maximum consecutive losses	**6**	Maximum consecutive wins	**14**
Maximal consecutive losses	- **748,32 €**	Maximal consecutive profit	**243,36 €**

In the short-term strategy we invested a total of EUR 3,500. First, we started with EUR 2,000 and later we invested EUR 1,500 more. We had a net loss of EUR 2,952.23. Winning in the short term is extremely complicated, despite all the strategies used. We lost 84.35% of the investment.

A total of 424 operations were performed in three months, from January 2015 until March 2015. As we can see in the table, a total of 67.92% of transactions were positive and only 32.08% were negative. However, in the end the result is negative.

How is this possible?

The answer is to look at the maximum gains and losses. In conclusion, when you lose, you lose a lot, and when you earn, you earn little. The maximum loss in only one operation is EUR 505, but the maximum gain in an operation is EUR 190. The maximum consecutive gains were fourteen operations, in which a total of EUR 243.36 was earned. However, the maximum consecutive losses were only six operations, with an aggregated loss of EUR 748.32.

We concluded that the total gain in three operations is lost in one operation. As observed, the risk is tremendous; in fact, the average of results of operations is EUR -6.94, which means that the expected payoff is negative. The standard deviation is 54.48. With a loss of EUR 500 and a profit of EUR 20, the difference is brutal. That is, the risk taken is greater than the expected benefit.

The reasons of this result is consistent with what was discussed earlier; strategies sometimes work and sometimes do not, leading to losses. However, there is another reason, the psychology.

4.4.   Trading psychology

Trading psychology is the emotions that are involved in trading and the reaction to these situations. While it is a fundamental part of trading, psychology is often overlooked. It is responsible for 70% of our successes or losses, leaving strategies at only 30%. Without any experience (experience is acquired over many years in front of the screen), the individual's brain is not prepared for movements in stock markets. There are two main types of errors, human and operational errors.

The typical human emotions that make us fail in operations are:

- ➢ **Fear**. It is not the same an operation with a demo account than with real money. When operating with real money, many bad decisions are made because fear blocks our thoughts and decisions, as in not daring to enter the market or always enter by trying to take every opportunity. However, sometimes doing nothing is doing something.
- ➢ **Greed**. When a good deal is done and money is earned at last, it is normal to get excited. However, if indicators show a change in the market, the operation must be closed. It is because of greed that little money is earned in trading. We saw a lot of trades with profits above EUR 200; however, we were unable to collect any because we were expecting more.
- ➢ **Stress**. Losing two consecutive operations can cause a lot of stress and craving for economic recovery, another human error.
- ➢ **Revenge and stubbornness**. After bad trades, we always try to recover by entering the market with every little opportunity that comes up, making us lose more money instead of rethinking about the reason why the strategy did not work.
- ➢ **Happiness and anger**. If we are too optimistic, we tend to take more risks than we would in normal situations. Anger is the feeling associated with thinking that we are fools after a bad decision. This reaction is wrong. What we should do is consider this operation as an experience, reflect and learn from the mistake. It is impossible to always do the right thing.
- ➢ **Lack of acceptance and hope**. Another bad attitude is when we go wrong in a trade, not assuming losses and always hoping to recover. Many times we tend to overexpose even more to try to compensate, making us lose even more money.
- ➢ **Lack of patience**. Many times we make good trades, but we are so afraid of losing money that we do not wait long enough to observe the trends in the market. With minimum losses, we exit the market.

- ➢ **Being confused and not keeping calm**. In a failed trade, the fact of not knowing whether to blame impatience for closing the trade and taking losses can lead to confusion and to inability to clearly analyze the market.

- ➢ **Insecurity**. It is an emotion that leads to poor decisions, as reflected in situations like: I open a position, but I have doubts about the trade; I do not know why but I close trades prematurely; when I start to lose, I lose patience and exit the market; I cannot stop watching the screen when I have an open position; I exit early and then I realize that I could have earned more; etc.

- ➢ **Compulsive gambling**. Trading can become an addiction. If we cannot close the screen and return to real life that means that we have developed a trading addiction. This is a serious problem, and it makes us take great risks in trading.

The *operational and strategic errors* *are:*

- ➢ **Not knowing when to close the trade**. That is, not strategizing well and thinking that we can handle any situation at any point in time and control losses. In reality, we are unable to close a losing position, hoping that it will recover and hoping to earn more.

- ➢ **Not estimating the risk in the operation from the start**. If the potential loss of a transaction exceeds the expected benefit, the trade is not worth it. However, if risk is not accurately estimated from the start, unnecessary risks will be taken.

- ➢ **Deviating from the plan**. Creating a trading plan is important, but it is not worth it if we are not able to follow it.

- ➢ **Not keeping detailed records of transactions**. This means not taking advantage of learning opportunities. Moreover, we tend to forget our mistakes.

- ➢ **Overexposure.** Relying too much on one opportunity, which involves major risks.

- ➢ **Misinterpreting trends**. Sometimes we know perfectly well which the primary trend is, but particular data or economic news can change the short-term trend. Furthermore, many short-term traders tend to forget to consider the long-term forecast, which leads to misunderstanding of the market, confusion and errors.

5. MEDIUM - TERM STRATEGY (Investment Funds)

5.1.   Where to invest and how?

For the medium-term strategy we mainly used the fundamental analysis discussed above, and the technical analyses to forecast the principal stock market indices affecting us.

While we assumed a significant risk with financial derivatives in the short-term strategy, in the medium-term we decided to be more cautious and invest in investment funds, rather than directly in market stocks.

An investment fund is an investment vehicle that is made up of a pool of funds collected from many retail investors for the purpose of investing in securities, for a fee. An investment fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus. Investment funds are operated by money managers who invest the fund's capital and attempt to produce capital gains and income for the fund's investors; this is the most important advantage. They give small investors access to professionally managed, diversified portfolios of equities, bonds and other securities, which would be quite difficult (if not impossible) to create with a small amount of capital. Each shareholder participates proportionally in the gain or loss of the fund.

The steps that must be followed are to study the market and choose the investment fund that fits our forecast.

We discarded emerging markets due to the risks they involve as well as Asian markets due to the difficulty of tracking distant markets. It is difficult to know and to be aware of the factors that may affect these markets, so we focused on North America and Europe.

The US market has seen an upward trend in recent years, and we think this market is running out and will not give huge profits. However, Europe is the market with more growth expectations, since Mario Draghi, president of the European Central Bank, announced a QE in order to exit the crisis permanently. As explained earlier, the QE has issued new euro currency, causing currency depreciation. A weak euro is good for European equities because it benefits exports. Therefore, the trend of currencies is also worth being observed.

Interest rates have also gone down, so fixed income is virtually unpaid, thereby encouraging investment in equities.

Therefore, we want to invest in investment funds which are focused on European stock markets.

In addition, by observing the markets, it can be appreciated that the Spanish market comes from far below, with high expectations of growth, even more than other markets. If we look at the Spanish Stock index, it can be seen that it has just overcome the downward trend, and a new upward trend can be seen. Therefore, we decided to invest in some funds that focus on Spain, not only on the general European market.

The investment is made on 28 January. In order to study the principal trend we used monthly candlestick charts. Since the investment will only be maintained for a few months, we have also analyzed the daily chart to better see the medium-term trend.

SP500, US composite capital market index

Chart 29. Principal trend of SP500

Chart 30. Secondary trend of SP500

This chart clearly shows the difference between the American and European markets. They had a much faster economic recovery. They are in a more balanced market with a clear upward trend, but as we said, our goal is to exploit the opportunities offered in European markets, although it is important to know that the world power (which drives the rest of the world) currently has an upward trend.

EURO STOXX 50, European composite capital market index

Chart 31. Principal trend of EURO STOXX 50

Chart 32. Secondary trend of EURO STOXX 50

Euro STOXX 50 is a stock market index composed of the 50 largest companies in the Eurozone. This index has started very well in 2015, breaking the resistance barrier that has persisted throughout 2014.

DAX30, German composite capital market index

Chart 33. Principal trend of DAX

Chart 34. Secondary trend of DAX

The German economy is one of the best in the Eurozone, as shown in its market index. There is a logical similarity between EUROSTOXX50 index, DAX30 and IBEX35.

IBEX35, Spanish composite capital market index

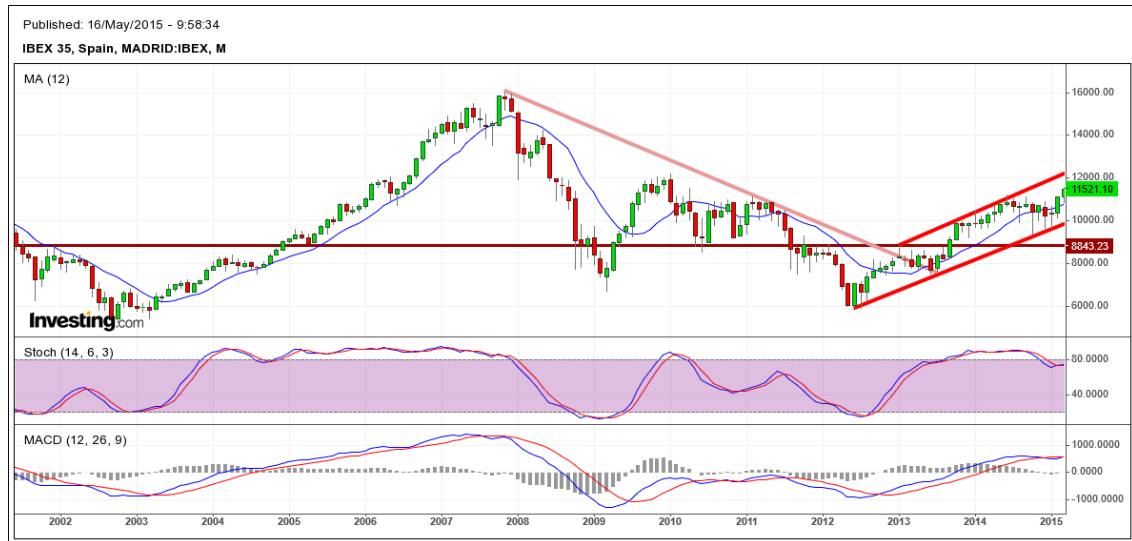*Chart 35. Principal trend of IBEX35*

Chart 36. Secondary trend of IBEX35

In the long-term chart, we can see that an uptrend is forming, as happens with other European indices, but in the medium-term chart, it can be noticed that the Spanish market remains sideways. The fact that it rebounded later than others also means that it is coming from further below and is more eager to climb. But if the aforementioned macroeconomic data not support this theory, we would not have relied on this assumption.

EUR/USD, Currency movement

Chart 37. Principal trend of EUR/USD

Chart 38. Secondary trend of EUR/USD

As said before, if the euro is weak, it will boost the resurgence of the European economy. These charts show the weakness of the euro in the long and medium term.

Based on this information, we decided to make an investment of € 12,000 divided equally between these two funds:

> *SANTANDER DIVIDENDO EUROPA, FI*
> *SANTANDER SMALL CAPS ESPAÑA, FI*

To study the funds evolution, we have included the following financial ratios in the analysis:

- <u>Accumulated yield</u> from the beginning.
- <u>Volatility</u>, as measured by standard deviation, indicates the variability of the fund's returns. The less volatile the better.
- <u>Beta</u>, which measures the volatility of the fund compared to the volatility of the market.
  - <1 → The fund is less volatile than the market
  - =1 → The fund varies the same as the market
  - >1 → The fund is more volatile than the market
- <u>Alpha</u> measures the extra return that is obtained by the fund with regards to its benchmark. When alpha is > 0, it means that the fund manager has added value to the fund.
- <u>Sharpe ratio</u> measures the return excess achieved for the risk taken. The more the better.

5.2. Santander Dividendo Europa, FI [ISIN: ES0109360034][2]

It is a conservative European equity fund which invests in companies with a sustainable dividend distribution policy for its shareholders. Therefore, although it invests in equities, we consider it to be a stable fund without much risk, as it only invests in large established companies.

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[2] Numerical data source: Santander Dividendo Europa, FI - Clase A. *Santander Asset Management.* Available at <http://www.santanderassetmanagement.es/es_ES/sam-esp/fondos-de-inversion/renta-variable/dividendo-europa>
[Accessed on 18 May 2015]

The ratios with information available from its constitution until 2015 are the following:

Chart 39. Ratios of Santander Dividendo Europa A, FI

Ratios	Santander Dividendo Europa A, FI	Index: STOXX Europe Large 200 Net Return EUR
Accumulated yield	17,67%	14,80%
Volatility	13,76%	11,73%
Beta	1,17	
Alfa	1,20	
Sharpe	1,59	

Considering data volatility and beta ratio, we observe that the fund management assumes more risk than the benchmark, but also achieves a higher return. That is, the fund manager adds value to the fund, which we can also see in the alpha ratio because it is greater than 1. The Sharpe ratio tells us that the return obtained is about 1.60 times for that volatility assumed.

The evolution of the net asset value of the fund up to the moment of making the investment follows a positive trend.

Chart 40. Development of Net Asset Values of Santander Dividendo Europa before Investment (28/01/2015)

The investment was made on 28 January 2015. The amount invested was of EUR 6,000 and the net asset value of the fund on that day was EUR 8.95. Therefore, we acquired 671.33274 of fund units.

5.2.1. Final result of the investment in this fund

Chart 41. Development of Net Asset Values of Santander Dividendo Europa before Reimbursement (30/04/2015)

As shown in this long-term chart, the fund continues its upward trend; in fact, from the start of 2015 it has extended its benefits.

Chart 42. Development of Net Asset Values of Santander Dividendo Europa for a period of three months (28/01 – 30/04)
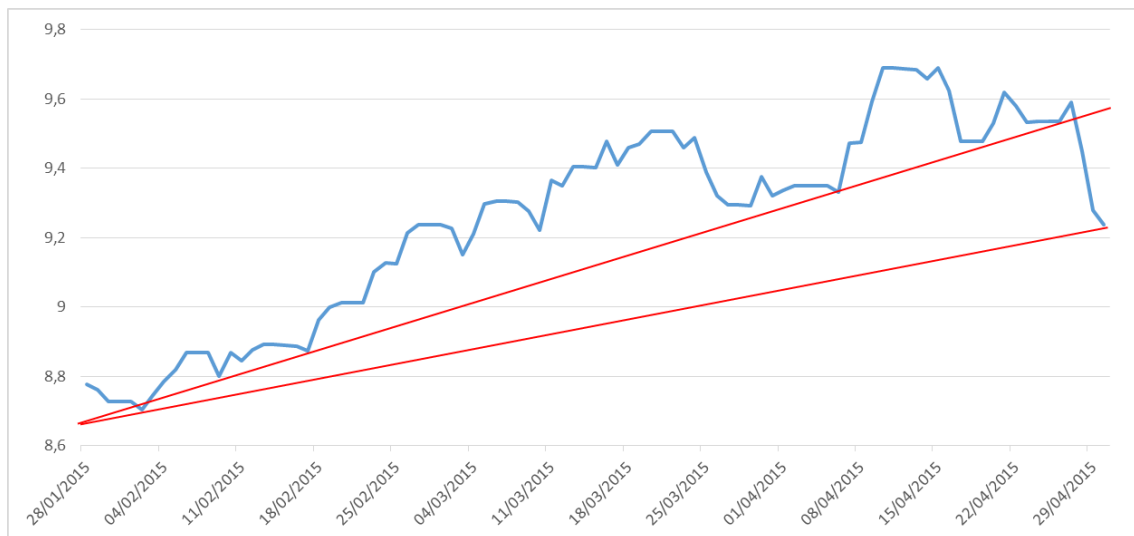
In the medium-term chart, we only see the period in which we have maintained the investment. The main trend is bullish, but the excessive expansion of performance begins to decline. The value of the fund falls due to the fact that European markets began to correct its soaring in April. This is normal as markets have to go down occasionally to

regain momentum. However, in general, we have obtained a positive return from investment to repayment.

On 28 January 2015, we acquired 671.33274 units at EUR 8.95/unit. At the time of repayment, on 30 April 2015, the net asset value of the fund was EUR 9.24. The fund has no redemption fees, but indirect management fees that are directly deducted from the net asset value. Therefore, the only thing left is to subtract the Personal Income Tax (21%) to obtain the net profit.

$$671.33274 * (9.24 - 8.95) = € 194.69$$

$$194.69 * (100\% - 21\%) = € \textbf{153.81}$$

5.3.   Santander Small Caps España, FI [ISIN: ES0175224031][3]

It is a riskier fund than the previous one as its policy consists of investing in small and mid-cap companies from Spain. We have decided to invest in this fund to diversify our portfolio by combining a conservative fund with another one that is a bit risky.

The ratios corresponding to data from its constitution until 2015 are the following:

Chart 43. Ratios of Santander Small Caps España, FI

Ratios	Santander Small Caps España, FI	Index: IBEX Small Caps and IBEX Medium Caps
Accumulated yield	11,79%	2,21%
Volatility	17,69%	17,30%
Beta	1,02	
Alfa	5,33	
Sharpe	0,873	

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[3] Numerical data source: Santander Small Caps España, FI. *Santander Asset Management.* Available at <http://www.santanderassetmanagement.es/es_ES/sam-esp/fondos-de-inversion/renta-variable/small-caps-españa>
[Accessed on 18 May 2015]

We can see how the management of this fund has been quite effective because it has a risk almost equal to the benchmark but has achieved a return superior to the index. However, the Sharpe ratio is less than 1 because the profitability is lower than the risk taken. This is because it is a fund with a lot of movement, having obtained more than 40% return in 2013 and -17% in 2011. The differences are obvious.

The evolution of the net asset value of the fund from its inception until the investment is the following:

Chart 44. Development of Net Asset Values of Santander Small Caps España before Investment (28/01/2015)

This long-term chart first indicates the volatility of the fund. Secondly, we see the downward trend until mid-2012, where it changed its course and began an upward trend.

The investment was made on 28 January 2015. The amount invested was EUR 6,000 and the net asset value of the fund on that day was EUR 168.967. Therefore, we obtained 35.50992 units.

5.3.1. Final result of the investment in this fund

Chart 45. Development of Net Asset Values of Santander Small Caps España before Reimbursement (30/04/2015)

As shown in the long-term chart, during the period of time of our investment the primary trend remained bullish. As happened with the previous fund, it also experienced an excessive profit in a short period of time. Here we can perfectly see the direct relationship of funds with stock market indices.

Chart 46. Development of Net Asset Values of Santander Small Caps España for a period of three months (28/01 – 30/04)
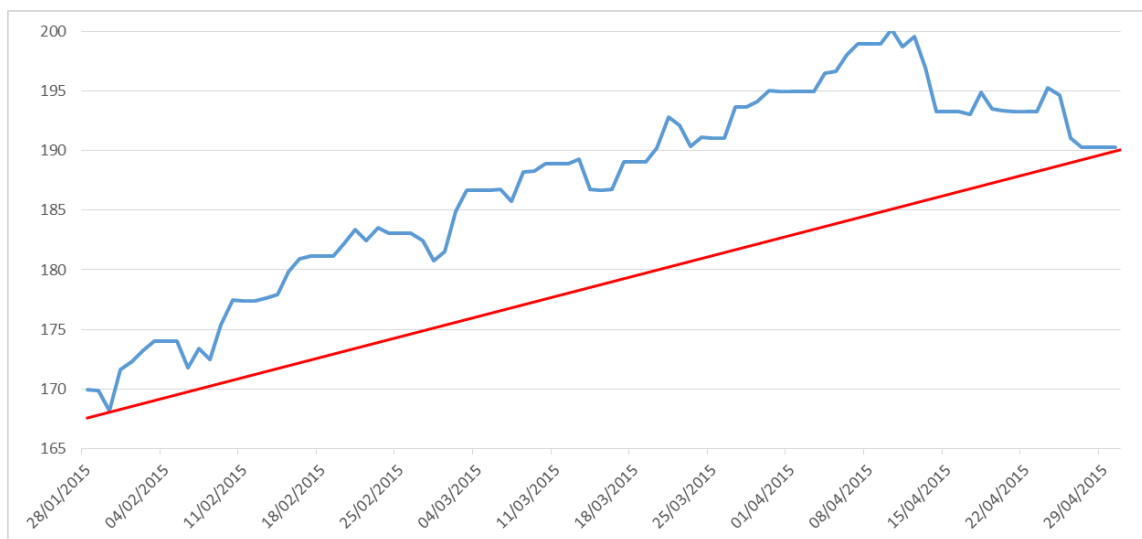
In the medium-term chart, which displayed the evolution of the fund only during the period of investment, the upward trend continued. We also observed that it entered a healthy correction, as happened with the other fund and markets.

We acquired 35.50992 units at EUR 168.97/unit on 28 January 2015. At the time of repayment, on 30 April 2015, the net asset value of the fund was EUR 190.29. This fund has no redemption fees, but indirect management fees that are directly deducted from the net asset value. Therefore, as before, in order to obtain the net profit, we can only deduct the Personal Income Tax (21%).

$$35.50992 * (190.29 - 168.97) = € 757.18$$

$$757.18 * (100\% - 21\%) = € \mathbf{598.17}$$

5.4. Total Results of the Medium-term Strategy

The two investment funds have had a similar development, although as seen in the charts and in the results, the Santander Small Caps España is more volatile but has provided a higher return than the first.

The total tax-free profit is:

$$153,81 + 598,17 = € \mathbf{751,98}$$

We have obtained € 751.98 for a total investment of € 12,000, i.e., a **6.27%** return in **three months**.

6. CONCLUSIONS

Finally, we gained 6.27% in the medium-term strategy and lost 84.35% in our short-term investment.

By comparing the two results we clearly see that if we want to provide our investment with a consistent return and increase our probability of success, it is much better to invest in funds. These are already managed by professionals, so our only task is to choose the right funds. They are also risky, but less.

Following all this, short-term strategies are very complicated and it is hard to make a living from this type of trading, but not impossible. Perhaps it failed in our project due to our lack of experience, but it is undeniable that it is difficult to conquer the market. We saw some of the reasons why it is difficult, such as trading psychology.

On the other hand, it should be noted that with intraday strategies you have the freedom to choose what you invest, the leverage, where to invest, when to leave, etc. In addition, this is a great advantage, especially the fact that there are products that allow you to also gain money in the bearish markets. However, funds cannot bet on the downside.

Another important issue is that markets contribute to the development of your psychology. They help you to lose the fear and have trust in yourself and above all, to be patient.

Stock markets are fascinating worlds where there is a lot to learn. It is also important to follow them because they anticipate the movements in the economy.

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