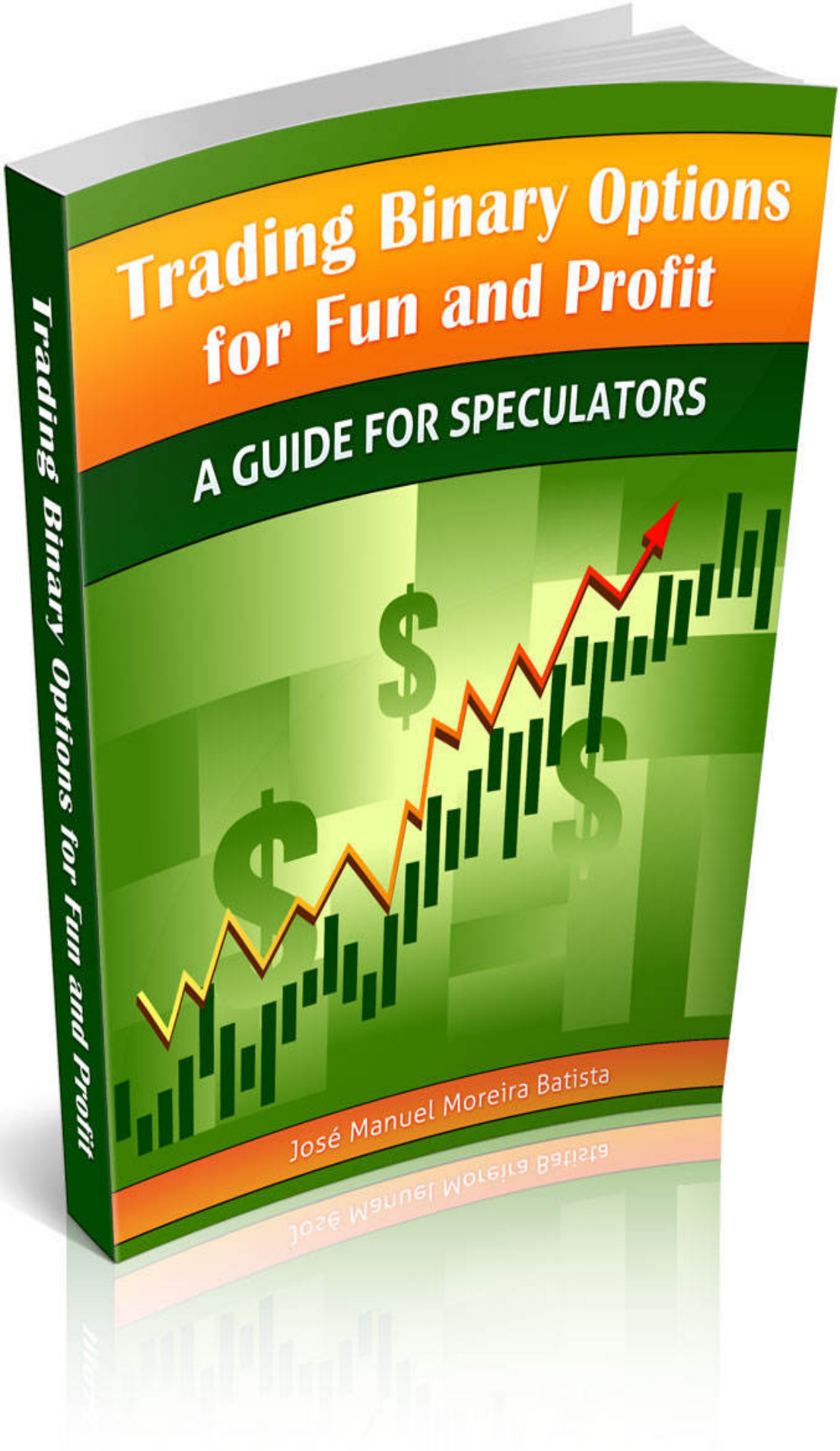
Trading Binary Options for Fun and Profit
A GUIDE FOR SPECULATORS
José Manuel Moreira Batista
Trading Binary Options for Fun and Profit

Trading Binary Options for Fun and Profit: A Guide for Speculators

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Table of Contents

PREFACE

- Can I borrow that book of yours "How to Become a Millionaire"?
- Sure, here you are.
- Thanks, but half the pages are missing. Where are they?
- Isn't half a million enough for you?
~ Author Unknown

I was first introduced to Binary Options by an enthusiastic friend whom I saw entering trade after trade on an app in his smartphone. To my knowledge he had never before owned a share of a corporation or bought and sold currencies except for traveling expenses, let alone heard of call and put options. Yet here he was staking money on the ups and downs of the euro versus the dollar and guessing what the price of Apple's share was about to do in the next five minutes. Plus he claimed to be winning big time, earning returns above 70% every five minutes. I soon realized he was far from being alone in his enthusiasm for binary options trading and that his claims of having found a sure way for making a quick buck were shared by many others.

I have been active in the markets for over 25 years. I know how difficult it is to achieve consistently good trading performance. I also know how selectively biased the memory of traders tends to get. I decided to have a look by myself.

I quickly confirmed my expectations. Trading Binary Options is indeed great fun and if you approach it in the same light way as you would a weekend in Las Vegas you won't be disappointed. However if you're foremost goal is not to be entertained but to make money

then watch out: the odds are completely staked against you, just as they are in Vegas.

This does not mean that you can't win at the binary options game. Bestseller books like "Busting Vegas" and "Bringing Down the House: The Inside Story of Six M.I.T. Students Who Took Vegas for Millions" are based on the real stories of people who do win enormous sums at the tables. They also tell that to consistently turn out a profit when you play against the odds you need much more than luck. You need to really know what you are doing!

I searched for books that offered a comprehensive but hands-on coverage of the subject of trading binary options. I wanted to find something that gave the reader the skills and practical knowledge needed to make his own profitable trading decisions. I did not found what I was looking for and so I decided to write the thing myself. *Trading Binary Options for Fun and Profit: a Guide for Speculators* is the result of that effort. I immodestly but sincerely believe that I have achieved the goal of writing a very useful manual for binary options traders. I do hope you enjoy it and that it helps you achieving your aims.

Cascais, October 2013.

INTRODUCTION

One of the funny things about the stock market is that every time one person buys, another sells, and both think they are astute.
~ William Feather

In *Trading Binary Options for Fun and Profit* I will walk you through what you need to know and do to trade binary options profitably. Since this it is not a work of fiction you will not be shown the magic formula that will make you rich in the blink of an eye. Rather you will gain the fundamental knowledge and tools to become a successful trader. You will learn to develop your own strategies to trading binary options profitably. Actually, a lot of what is covered here is easily adaptable to other types of trading such as the stock and Forex markets and even to sports betting. That said, you do not need to have any prior knowledge of binary options, trading or math. Just start reading at the beginning and proceed sequentially, all what you will need to know is spelled out. If you happen to have previous knowledge of a topic you can proceed directly to the next one without losing context. However, if you are in doubt it is better to read through. This book is fluff free so it won't waste your time.

I start *Trading Binary Options for Fun and Profit* by defining what a binary option is and how it works, the main types of trades available and the criteria you may want to consider when selecting a binary options broker. Then I proceed to explain why using trading strategies makes sense to you and where you can find ideas to create them. Ultimately you will want to know if your trading strategy makes money so I'll show you how to calculate the magic number

that tells it all: its *Expectancy*. Since trading strategies are built upon technical indicators a very brief overview of a few common ones follows. Next I proceed to the MetaTrader platform and show you how it can serve as your own cost-free research assistant and trading signal provider. I then go over the details of developing and improving a trading strategy using Excel and Expert Advisors. The critical Money Management issue comes next: you will get to know several systems and in the process learn how easy it is to do a Monte Carlo simulation. The book ends with an overview of the complete methodology and leaves you with some final trading suggestions. Finally, in the Appendix you will find several resources that I make available for free to the buyers of *Trading Binary Options for Fun and Profit*.

BINARY OPTIONS

1 - What are Binary Options

I made a killing in the stock market. My broker lost all my money, so I killed him.
~ Jim Loy

A binary option is simply a way to speculate if the price of an asset is going to go up or down in the future. For example, if you believe the price of a share of the German automaker BMW is going up you could buy a binary option for EUR 10 that will pay you back EUR 17 if you are right, yielding a 70% return. If you are wrong, you will lose your EUR 10.

Figure 1: A binary option that returns 70% if BMW shares are higher at 10:00 that day than they are at the time of the trade (a few minutes past 09:00). As you can see looking at the green arrow at the left, 54% of the traders on this particular option think the price is going to go up.

Although there are several binary options types, the core idea behind all of them is the same: choose an asset, pick a time horizon, and guess what will happen to the price of the asset during that period. If your estimation is correct you will earn a considerable return, more often than not north of 70%. If your prediction is wrong you will lose the price you paid for the binary option, that is, you will lose 100% of your stake. Seems a simple enough concept but I will

dwell a little bit more to make sure all the fundamentals are covered. Before that though, I need to get a couple of terminology issues out of the way. First, if you read about binary options you will find some people who say they *invest in* binary options, others say they *trade in* binary options and still others that they *bet* or *wager in* binary options. Above I myself have used the words *speculate*, *estimate* and *predict*. For the purposes of this book they are all treated as synonyms, I make no distinction whatsoever. Secondly, I will use the term *asset* to refer to anything that can be speculated on with binary options, such as gold or a share of a company.

Figure 2: With the spot rate of EUR/USD at 1.3274, this binary option gives an 84% return if at any time during the next 7 days the EUR/USD is equal or higher than 1.3404.

Why are they called binary options?

An option is a very old financial instrument used both for hedging and speculation purposes. It gives the holder of the option the right but not the obligation to buy or sell an underlying asset at a specified price until a certain date called the expiration date. The value of an option depends on both the value of the underlying asset and the time remaining until the expiration date. Options are an essential component of the financial world: according to the Futures Industry Association in 2012 the number of futures and options contracts traded around the globe was 21.2 billion. The binary option concept

is a simplified version of the options contracts traded in the stock market and futures exchanges and thus its name. The word binary refers to the only two possible outcomes of buying this type of option: you will either lose all the money you have bet, or you will keep it and earn a substantial return on top of it.

One of the world's largest options exchanges is the CBOE - The Chicago Board of Exchange, which does offer binary options on the S&P Index 500 Index (SPX) and the CBOE Volatility Index (VIX). Each of these contracts, known as BSZ and BVZ respectively, pays USD 100 if the trade is successful or nothing at all if it is not. However, BSZ and BVZ are not the binary options I am going to tackle. There are other, simpler binary options, requiring less capital offered by specialized brokers. Those are the ones I am going to focus on.

Figure 3: The Chicago Board of Exchange offers binary options contracts on the SPX and the VIX, called BSZ and BVZ.

What assets can be traded?

Most binary options brokers offer trading in four types of assets: Stocks, Currencies (also called Forex), Commodities and Indices. Usually the brokers will allow trading only when the market for the asset is open. For instance, most European stock exchanges are open between 07:00 GMT and 15:30 GMT so if you want to trade European stocks or indices you will have to do it during this period.

Likewise if you want to trade on North-American stocks or indices you will have to place your trades between 13:30 GMT and 20:00 GMT. Japan and Australia open at 0:00 GMT, Singapore at 01:00 GMT, Hong Kong follows at 01:30 GMT, India at 03:45 GMT. Note that not all listed stocks will be offered, but you will have a good selection of the big names like Vodafone, BP, Barclays, France Telecom, AXA, Fiat and BBVA in Europe and Google, Apple, Coca-Cola, J.P.Morgan, Amazon, IBM, Nike and Exxon in the USA. The currencies or Forex market is open all day from Monday to Friday and so is the market for Gold and Silver. Oil can be traded between 08:15 GMT and 18:30 GMT. These times vary during the year but all brokers keep updated information on their sites that you can check.

What is the duration of a trade?

This varies depending on the underlying asset, the type of binary option and the broker. These combinations provide traders with a wide selection of time horizons to choose from. The minimum duration is usually 60 seconds and the maximum can be a few hours to a year. Probably the most common durations are between 10 and 60 minutes.

For a premium some brokers will allow you to extend the initial duration of the trade. Imagine that at 17:00 GMT with the price of IBM at USD 194 you bet EUR 50 that it will be below that value at 18:00 GMT. The potential return is 75%. Unfortunately just after you placed your trade IBM rallied and the price spiked to USD 195.78. It hovered around that level until 17:30 GMT and at that time it began a slow but steady descent. It is now 17:47 GMT and the price is USD 194.45. You can let the trade run or you can pay a EUR 1.5 premium

to extend the expiration time until 18h15 GMT thus buying yourself 15 minutes more to be right… or not!

Conversely some brokers allow you to close a trade before expiration time. Take the previous IBM example: at 17:47 GMT the price is at USD 194.95 and you may close the trade selling your option for EUR 36. You would book a loss but for only EUR 14 instead of risking to lose the entire EUR 50. Or suppose that at 17:47 GMT IBM is at USD 193.64 and climbing… You can close the trade for EUR 59. If you do you lock EUR 9 of profit (an 18% return) but you forfeit the possibility of earning an additional EUR 28.50 … or of watching your EUR 50 go down the tube if the price breaks up the USD 194 barrier.

How much can you win on a trade?

Returns will vary depending on the underlying asset, the type of binary option and the broker but the most important consideration is that you know in advance exactly how much you stand to gain. Say that now is 09:00 GMT. The current price for EUR/USD - how much 1 euro costs in dollars - is 1.3101. You invest EUR 10 in an option predicting that this price is going to be higher at 09:30 GMT than it is now. The return quoted by your broker is 70%. It does not matter if at 09:30 GMT the EUR/USD is at 1.3102, 1.3110 or 1.3200: as long as it is above 1.3101 you will earn 70% or EUR 7 (EUR 10 x 70%), not a cent more and not a cent less. This is a very important feature of binary options and one that makes them differ from the traditional options where the amount you stand to gain depends on both the price of the option and how right you are. With a traditional option even if you were right and the price of EUR/USD did climb from

09:00 GMT to 09:30 GMT you might lose money if the magnitude of the rise does not cover the price you paid for the option. Not so with binary options.

How much can you lose on a trade?

Binary options are not leveraged and this means you can only lose the amount you bet. If you buy an option for EUR 10 and you lose your loss is exactly EUR 10. If you trade EUR 10 000 and you lose, your loss is exactly EUR 10 000. If those EUR 10 000 was the entire amount you had in your trading account you not only lose them but now either you are done trading or you have to reach into your pocket to fund your account again. That is, assuming of course there is indeed something left in that pocket… This leads to the very important topic of money management, which I will talk about in a later chapter. Money management is about position sizing, knowing the answer to the question: “How much should you invest in this trade?”

2 - Binary Options types

As I stated before at its core all binary options entail predicting if the price of an asset is going up or down from now until a certain date and time in the future (the *expiration date* or *expiration time*). If you believe the price is going to go up you buy a *call* option, if you believe it is going down you buy a *put* option. Although this covers most of what there is to know there are some variations to this basic theme so let's have a further look at some common binary options types.

Up/Down or High/Low

Regardless of the terminology, which varies from broker to broker, this is the most common type of binary option: what will happen to the price at expiration time compared with the *spot* price (the current price of the asset)? If you think it will go up you buy a call otherwise you buy a put. If you buy a call you win if the price is *higher at expiration time* than it was when you placed the trade. If you buy a put you win if the price is *lower at expiration time* than it was when you placed the trade.

Figure 4: Up/Down or High/Low binary options.

Higher/Lower or Above/Below

This is the same as Up/Down option but with a slight twist: instead of using the current price of the asset as reference you choose a *barrier* or *target price.* Will the price at expiration be higher or lower than this barrier? Again, if you think the price will go up and be higher than the barrier you buy a call otherwise you buy a put. If you buy a call you win if the price *at expiration time* is *higher* than the barrier. If you buy a put you win if the price *at expiration time* is *lower* than the barrier.

Figure 5: A Higher/Lower or Above/Below binary option.

Touch/No touch

Here you start by selecting a barrier. If you bet “Touch” and the price of the asset “touches” (meaning it is equal to or passes through) that barrier *at any time* up until expiration you win. Or select “No Touch” and you win if the price of the asset *never touches* the barrier until expiration time.

Figure 6: A Touch/No touch binary option.

In/Out

For this type of binary option you will have to pick two barriers that will act as a low and a high boundary. Choose “In” and you will win if the price of the asset *stays inside* the boundaries, so it never touches neither the high nor the low barrier *at any time* up until expiration. Choose “Out” and you will win if the price of the asset *breaks out* any one of the boundaries *at any time* up until expiration.

Figure 7: An In/Out binary option.

Very short term trades

Under various names such as “60 seconds”, “2 minutes”, “5 minutes”, “Tick trades”, etc., come trades whose common denomination is their very short duration. Usually these are bare Up or Down trades.

Figure 8: A Short Term binary option.

Returns, type of option, time to expiration, underlying asset and volatility

With binary options your potential annualized return is always very high. The way brokers calculate that return varies widely and they do not disclose that information but they will always show you the exact return you can expect prior to you actually putting the trade on.

Some types of options offer higher returns than others for the same underlying assets and trade duration. For example, a Higher/Lower bet will pay you more than an Up/Down bet. This is because to win a Higher/Lower bet the price at expiration must be between two boundaries as compared to only one in an Up/Down bet.

The trade duration also influences the return offered. You might logically think that the longer the duration of a trade the higher the return should be as forecasting what is going to happen in six months is harder than to estimate how things will be in six days but somehow this does not always come reflected in the offered returns. For instance, 60-second price movements cannot be forecasted in any meaningful way and so the fair return for this bet should be the same as the one you would get by tossing a coin but 65% and 70% returns are commonly quoted.

The underlying asset is another factor in returns calculation. Currency pairs trades tend to pay out a slightly higher return than do stock market indices. Currencies prices are quoted up to 5 decimal digits as opposed to only 3 digits for the indices and this might be a reason for the difference. Specific broker expertise might be another.

Asset *volatility*, meaning how widely the price of an asset fluctuates over a period of time, is of crucial importance. Sometimes brokers even suspend an asset from trading because it is going through a period of very high volatility. Understandably the higher the volatility of an asset the more difficult it is to predict where its price will be at a given point in the future.

3 - Binary Options Brokers

You will need a broker to trade binary options and nowadays there are quite a few to choose from. I will go over a few selection criteria you might want to consider. On doing so and for comparison purposes I will be making references to three brokers: Binary.com (formerly BetOnMarkets), Banc de Binary and 24option.com.

Types of trades

I find that all brokers tend to offer more or less the same type of trades although the way you place that specific trade does vary. For example if you want to place a 60 second trade in 24option.com you simply select “Short Term” from the main page and the list of all 60 second trades with the corresponding returns is displayed. You then just have to click on the “+” or “-“ from the “High/Low” column, enter the amount you want to bet and you are done. In Banc de Binary you select “60 seconds” from the main page and then you have to select the asset you want to trade from a drop-down list. You similarly have to pick from a drop-down list the amount of your bet. EUR 5, EUR 10, EUR 20, EUR 50, EUR 100, EUR 250 and EUR 500 are your available options. If you got to Binary.com you don’t see a “Short Term” or “60 seconds” tab in the main page however if you first choose “Rise/Fall” you can then set the trade duration to as low as 30 seconds. Binary.com also differs markedly from the other two brokers in that it will offer different returns for “Rise” and “Fall” bets.

Figure 9: A section of Binary.com main page.

Minimum initial deposit

All brokers accept deposits in the major currencies and you can choose your own account currency. Binary.com has the lowest initial deposit requirement - you can fund your account with only EUR 5. Both Banc de Binary and 24option.com have an initial EUR 250 threshold. All these brokers allow you to deposit in a variety of ways including bank transfer, credit card and Skrill (formerly known as Moneybookers) and the same channels can be used for withdrawals. In any case updated deposit and withdrawal policies are clearly stated in the FAQ or Help sections of the brokers' webpages so you can consult them whenever you need. I personally use and recommend Skrill because I feel their association adds an extra layer of security and gives credibility to the broker. Deposits with Skrill are instantaneous and withdrawals take only one day.

Figure 10: Depositing in 24option.com with Skrill.

Minimum trade amount

As regards the minimum amount per trade 24option.com has the highest requirement: EUR 24. Both Banc de Binary and Binary.com have EUR 1 as the minimum amount requirement for most trades.

Binary.com has a feature that distinguishes it from the other two brokers: when placing a trade you choose the *payout* amount (the

amount of the bet plus the potential return) and then click a button labeled “Get Prices” that will tell you how much you have to put at stake to get it.

Figure 11: Placing a minimum bet trade in Banc de Binary.

Trade extension

Banc de Binary allows you to extend a trade, which can be useful if the price movement goes in the direction your predicted but not as fast as you need to reach the target price at expiration time. You have until 10 minutes prior to expiration time to decide if you want to extend the trade. You can also double your bet if the trade is going in your favor by simply clicking a “X2” button (but beware that this actually opens a second trade with the initial spot price set at the time you click the “X2” button).

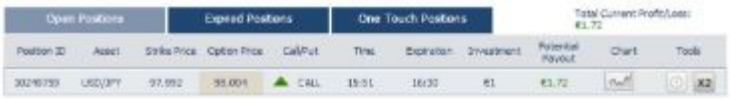


Figure 12: In Banc de Binary pressing the “x2” button will double the traded amount.

Early trade closing

24option.com allows you to close a trade before the expiration time. This is great if you decide to lock a profit or minimize a potential loss. You have until 10 minutes prior to expiration time to

decide if you want to close the trade earlier. As with the trade extension option this is a decision that has to be made on a trade-by-trade basis and has much to do with individual trading styles and risk profile. As with all decisions there is the chance you end up making the wrong one and you will only know that after the expiration time. Nevertheless the fact that you do have the choice to extend or close the trade earlier is without a doubt a good thing.

Sign-up bonus

Depending on the broker and the promotion it is running at the time you might get a bonus of up to 100% of the amount of your deposit. It is up to you to decide if you accept the bonus or not but please be aware that it usually comes with requirements attached such as a minimum number of trades that you have to make before you are allowed to withdraw your money. This is to discourage the hit and run artists that pop-up everywhere something free is offered. If you are just testing waters it makes sense to accept the bonus, because with the extra money you will be able to make more trades without risk. If you are confident that your trading strategies produce consistent winners it also makes sense to accept the bonus since you will be making more money.

Education resources

All three brokers provide good introductory manuals and videos on the basics of binary options trading and naturally also on how to use their own trading platform. They also regularly sponsor webinars and other online education events, which are undoubtedly useful for the novice trader even if a little heavy on the inevitable sales

component. Trading calendars and special trading events will also be emailed to you.

Marketing

From the moment you access a broker website you will notice that they are not stingy when it comes to marketing expenses. Expect a call from a representative who will gently remind you that the measly amount you have used to fund your account can only mean you're not yet serious about making money. Do not get put-off by this: after all, brokers make their money by making it easy for you to trade! In my own experience I found the brokers' representatives to be knowledgeable, always extremely courteous and not pushy so do not be afraid to be harassed by an aggressive telemarketer. That is not going to happen.

TRADING SYSTEMATICALLY

4 - WHAT IS SYSTEMATIC TRADING?

However beautiful the strategy, you should occasionally look at the results.
~ Winston Churchill

Systematic trading refers to the use of one or more trading strategies and a money management system to direct trading decisions. In dealing with binary options a trading strategy is simply a predefined set of rules for entering a trade for a specific asset. These rules are built around technical indicators and/or conditions that have shown to increase the probability of success of a trade.

For example, let's assume that you trade the currency pair EUR/USD. Let's further assume that you have looked into a meaningful set of past price data for this asset. Specifically you have looked at the 5-minute timeframe (what happens to the price of EUR/USD at every 5-minute interval) and have found out that if the price drops three consecutive times and then raises on the fourth 5-minute interval, on the eight 5-minute interval it will close above where it started 65% of the times.

Your strategy rules would be as follows:

1) *If* at the beginning of the first 5-minute interval the price is at X.

2) *and* at the end of the first 5-minute interval the price drops below X to X-1.

3) *and* at the end of the second 5-minute interval the price drops below X-1 to X-2.

4) *and* at the end of the third 5-minute interval the price drops below X-2 to X-3.

5) *and* at the end of the fourth 5-minute interval the price rises above X-3.

6) *then* buy a call (Higher) option with an expiration time of twenty minutes.

If this were the case you would have found the basis for a nice EUR/USD trading strategy! Naturally you would follow the price action of EUR/USD on a 5 minutes time frame (read the chapter on MetaTrader to know how to do this easily). Then whenever you spotted three consecutive price drops followed by a raise you would buy a Call (Higher) binary option with duration of twenty minutes (you buy after the fourth 5 minute interval and the trade will expire after the eight 5 minute interval). Here is an example:

	Minutes	EUR/USD	
#0	0:00	1.32666	
#1	0:05	1.32634	
#2	0:10	1.32548	
#3	0:15	1.32461	
#4	0:20	1.32502	⇦ Buy
#5	0:25	1.32518	
#6	0:30	1.32606	
#7	0:35	1.32615	
#8	0:40	1.32743	Expiration

Figure 13: The EUR/USD strategy. Numbers in red signal that price at the end of the corresponding 5 minutes period is lower than at the close of the previous period. Numbers in green signal prices are up.

You would expect to be successful around 65% of the times you entered this trade. Notice that one thing is missing on this strategy: how much should you bet on this trade? This is a crucial element and can make or break *any* trading strategy. We look into this issue in depth in the Money Management section.

Some further comments are worth here. First, you might think this is too simple or easy to be the basis of a trading strategy. The

above strategy is indeed made up just for illustration purposes but the point is that the most effective trading strategies tend to be rather simple. Just piling up more rules, conditions or technical indicators do not by itself make a strategy more reliable or robust. The simpler the better. Secondly, strategies do not work forever and they should be constantly monitored. If the strategy starts to underperform it should be revisited immediately. Maybe market conditions have changed and there is a need to retest the strategy with more recent price data. After analysis you might conclude that some changes or fine-tuning is needed or that the strategy simply stopped working altogether and needs to be abandoned. Thirdly, remember that all strategies will result in losses: we are told this specific strategy has a success rate of 65% and this also means you can expect 35% of your trades to lose money. With these probabilities you can be sure to have several stretches of consecutive losing trades! Always remember that these strings of losses are to be expected: they are part of the plan! As long as you follow a sound money management system and you keep monitoring the overall strategy success rate you are doing what needs to be done. Finally, do not transpose strategies without testing. What I mean is that you should not assume that because a strategy works with the currency pair EUR/USD it will work with the currency pair USD/JPY or with the Japanese stock market index (NIKKEI) or with Microsoft's shares (MSFT). Similarly, do not assume that a strategy that works on a 5-minute timeframe will work on the 30-minute, the 1-hour or the daily timeframe. Strategies must always be tested with each asset and timeframe before being traded!

5 - Why use trading strategies?

Systematic trading is all about making consistent profits over the long run. You do that by finding, applying and monitoring good trading strategies. Here are some very good reasons for trading systematically:

You will know what to do

One problem facing traders is to know what to do next. What should they trade? What is it they are supposed to be looking for?

- They just heard on CNBC that the major stock market indices are down for the month. Does that mean they should buy puts (Lower) in the indexes? Or maybe buy puts on some of the stocks that were mentioned in the news as dropping the most?
- The dollar seems to be up against the yen today. Should they buy calls (Higher) on the USDJPY? Or is this only an incidental rise and not a trend?
- Apple just released a new cool looking product. Should they buy calls on Apple? Or should they instead follow the “buy the rumor sell the news” rule?

Nowadays there is a constant bombardment of news that can conceivably influence trading decisions directly or indirectly and this often ends up inducing analysis paralysis on traders. Using a trading strategy breaks this inertia and gives you focus. You will know which assets are relevant to you. You will also know what you should be looking for: the conditions that trigger a new trade.

You will avoid overtrading

Just as important a trading strategy will keep a trader from overtrading. Without a system a trader easily gets the itch to jump into a new trade, any trade. It is very difficult to be patient when you do not know what you are waiting for. A tip from a friend, something overheard on the news or read on the internet, anything will seem a good reason to jump in and open a new trade, sometimes even several new trades at a time. A trading system provides the discipline and the knowledge to wait for the correct conditions and only then open a trade.

You will keep your emotions out of trading

Traders always have two powerful foes lurking: their own greed and fear. Without a system greed and fear are on the prowl. If greed gets to you, you will put too much money on every trade, open too many trades, refuse to close trades earlier, and you will tend to double up on winning trades. If fear gets to you, you will bet less than you should on each trade, let good trades pass you by and you will tend to lock profits way too early. A trading system will give you a compass that works when sailing is smooth but also when the going gets rough.

You will be able to measure your performance

So you lost six trades in a row uh? Bad luck, you say. What about if you won six trades in a row? Was that due to luck or the works of your infallible trading instinct? What do you say? Research has proven time and again that we blame bad luck for our problems

and attribute success to our skill. The truth is that unless you follow a system you will not be able and will probably not even care or dare to measure what your trading performance is. A trading system takes luck out of the equation and it requires you to measure performance.

You will be able to learn from experience

Since with a trading system you will be monitoring performance and looking out for what works and what does not work, and when it works and when it does not work, you will be learning all the time. You will be searching for and adopting what does work and identifying and abandoning what does not work. This is how you truly gain experience and learn from it.

You will focus on making money

A trading system and its money management component are constantly calling your attention to your account running balance. Increasing that balance becomes the overarching goal of every trading decision you take. You will treat trading as a business and that is how it should be treated if you really want to make money.

Trading systematically versus trading the news

There are news such as the announcement of an interest rate change by a central bank, the release of unemployment statistics, major natural disasters, war acts, a radical politician coming to power in a oil-rich country, the release of corporate earnings, rumors of a merger, the approval of a new drug, etc. that can cause significant and abrupt changes in the prices of an asset or asset class. Are these good trading opportunities? Well, yes if you have a profound

knowledge of the asset and market impacted and / or some insider information. If that is not the case then what you have is just a good opportunity to test how lucky you are. You can make money on some trades for sure, but will you really be able to systematically profit from trading the news? Not likely!

6 - What is a good trading strategy?

The three ways to make money with a trading strategy

A good trading system is naturally one that consistently makes you money. That can be achieved in different ways:

1. The system generates more wins than losses, and the average win is higher than the average loss.
2. The system generates more losses than wins, but the average win is higher than the average loss in such a way that the total amount won exceeds the total amount lost.
3. The system generates more wins than losses, and although the average win is lower than the average loss the total amount won exceeds the total amount lost.

Systems of the #1 type are the Holy Grail of trading systems and if you ever come across one an early and golden retirement awaits you, wherever and whenever you want. Systems of the #2 type are out of reach when trading binary options because although you can get really great returns they very rarely, if ever, exceed 100%. To put it in other words, your potential loss per trade is larger than your potential profit per trade. The corollary of this is that you need a #3 type system: a strategy that not only wins more often than it loses, but one that does so in a percentage high enough to compensate for the fact that every loss is larger than every profit.

Break-even calculation

Since break-even is achieved when the total amount won equals the total amount lost it can be calculated using the following formula:

- Total amount won - total amount lost = Average amount per trade x Winning % x Average Return - Average amount per trade x Loss % x Average Loss

Or more simply:

- 0 = Winning % x Average Return - (1 - Winning %) x Average Loss.

To illustrate, let's suppose that you always trade with the same amount, and that the average return per trade is 70%. When you have a loss, you know it is 100% of the amount you bet. For this particular example:

- 0 = Winning % x 70% - (1 - 70%) x 100%.
- Winning % = 59%

In order to break-even with a binary options trading strategy with an average return of 70%, you will therefore need a winning percentage of at least 59%. Putting it in more general terms, to make sure you trade profitably you must have a system that has a winning percentage above the break-even winning percentage, which is determined by the average return. You can find that percentage using the following formula:

- Break-even winning percentage = 1 / (1 + average win return**)**

For example, if your average win return is 80% your winning percentage break-even is 56% (1/1.8) but if the average win is 50% your strategy needs to achieve a 67% (1/1.5) winning percentage. The following table shows the break-even win percentage for several average win returns.

Average win return	Break-even win %	Average win return	Break-even win %	Average win return	Break-even win %
1%	99%	50%	67%	100%	50%
5%	95%	55%	65%	105%	49%
10%	91%	60%	63%	110%	48%
15%	87%	65%	61%	115%	47%
20%	83%	70%	59%	120%	45%
25%	80%	75%	57%	125%	44%
30%	77%	80%	56%	130%	43%
35%	74%	85%	54%	135%	43%
40%	71%	90%	53%	140%	42%
45%	69%	95%	51%	145%	41%

Figure 14: Required win % to break-even at various win returns.

Looking at it upside-down, assume you got your hands in a strategy that wins 58% of the times. Where do you plug it in? Simply twist the formula above to:

- Required win return >= 1 / Winning percentage − 1

You now know that the required return for profitably trading your strategy is 73% (1 / 58% - 1). Either you can find a trade that pay that average return or you have to find a strategy that has a higher winning rate.

Expectancy

A more general way to analyze any trading system is computing its *Expectancy,* which is a single number that combines the winning percentage with the average return. This number immediately tells you if a strategy is worth trading. If the strategy Expectancy is greater than zero you should trade it, if it is negative you should not. You can also compare the Expectancy of different strategies in order to rank them: the higher the Expectancy value the better the strategy is. To calculate Expectancy use the following formula:

- Expectancy = Average return x Winning trades percentage - (1 - Winning trades percentage)

For example, for trading strategy ABC that has an average return of 70% and that wins 65% of the times:

- Expectancy = 70% x 65% - (1 − 65%)
- Expectancy = 0.105.

If the winning percentage were 58% instead of 65%, ABC's Expectancy would be − 0.014 a negative number that immediately tells us that the strategy should not be traded.

Now consider Trading Strategy XYZ with an average return of 65% and a winning percentage of 68%. The Expectancy of XYZ is 0.122. Since this Expectancy is higher than ABC's Expectancy (0.105), Strategy XYZ is superior to Strategy ABC.

The next table shows Expectancy values for various average wins percentages assuming average returns of 60% and 70%.

Average win return	Average win %	Expectancy	Average win return	Average win %	Expectancy
60%	50%	-0.20	70%	50%	-0.15
60%	55%	-0.12	70%	55%	-0.06
60%	60%	-0.04	**70%**	**60%**	0.02
60%	**65%**	0.04	70%	65%	0.11
60%	70%	0.12	70%	70%	0.19
60%	75%	0.20	70%	75%	0.28
60%	80%	0.28	70%	80%	0.36
60%	85%	0.36	70%	85%	0.45
60%	90%	0.44	70%	90%	0.53

Figure 15: Expectancy at various win return levels. Average returns of 60% and 70% are assumed. The minimum average win percentages that yield a positive Expectancy for the given return are in bold type.

Timeframe and frequency of signals

Other thing to weigh when selecting strategies to trade is their timeframe and frequency of signals. Timeframe relates to how the price data is bundled for analysis, e.g. 1 minute, 5 minutes, 15 minutes, 30 minutes, 1 hour, 4 hours, daily, weekly, monthly. Frequency of signals relates to how often the conditions in the strategy are met and a buy or call signal is triggered. A shorter timeframe usually results in a higher number of trading signals. A strategy that works under a 5 minute or 15 minutes timeframe requires you to be at your computer and ready to trade for much longer than a daily, weekly or monthly strategy does. Therefore you should decide how much time you want to devote to trading and in what time slots before selecting strategies.

7 - Should you trade multiple strategies?

There are a number of reasons why you would want to base your systematic trading in more than one strategy:

- Strategy diversification: having more than one strategy may soften the emotional toll that the inevitable string of losses that all strategies suffer from time to time produces. While one strategy goes through a rough patch, others might be turning out winning trades.
- Strategy replacement: no strategy works for ever and however good they are at some point they will need fine-tuning or simply have to be replaced. When that time arrives, if you are dependent on a single strategy you might find yourself in dire straits.
- Asset diversification: if you are interested in trading different assets it is very likely that you will have to use a different strategy for each asset you trade.
- Increase trading frequency: you might find that you are putting in too few trades for the money you have allocated to trading. In other words, you might want more action! Adding one or more strategies might give you those extra trades.

8 - Where do trading strategies come from?

It is a scientifically proven fact that storks will not drop trading strategies down your chimney no matter how large a quantity of sweets you place on your windowsill to signal your willingness to have them. However unfortunate that may be we are still left with a good variety of possible sources. In fact a lot of people, some of them real traders, have developed trading strategies. Some people share their strategies for free, others are only willing to part with their secret recipes for a fee, sometimes a very substantial one. You will have no trouble at all finding these folks: I just did a Google search for “free trading strategy” that resulted in 110 million results!

Figure 16: Googling “free trading strategy”.

Looking for those who think they have something worth selling, a search for “trading strategy for sale” yielded a much smaller but still respectable 59.7 million results:

Figure 17: Googling “trading strategy for sale”.

Certainly most of these results do not refer to binary options, as these are relatively new. They probably relate to traditional ways of trading stocks, commodities, futures, Forex pairs and options.

However, those can be a great starting point and give good returns once the necessary adaptations for the binary options framework are made. Narrowing the focus, a search for “binary options trading strategy” came out with a paltry 892 thousand results confirming what I just said.

Figure 18: Googling “binary options trading strategy”.

The actual content of the links provided by Google will vary widely and you probably will have to do some sifting before actually coming out with a trading strategy spelled out that you can understand, test and use or adapt. Below are sites that you might find useful:

- Strategy4Forex
- ForexStrategiesResources
- TradersLog
- EarnForex
- FxFisherman
- DailyFx
- BabyPips
- Forex-Strategies-Revealed
- ForexStrategyTraining
- Mayzus

I want to emphasize the one thing that you should be avoiding like the plague: black boxes. Those come under a variety of names and forms like *signal services*, *trading signals*, *trading robots*, *etc.* but have one common element: you are kept in the dark. You are

never told the logic behind the signals or trading decisions, only that its performance is astonishing, it was developed by a mathematician, veteran trader, rookie genius or the like and will for sure make you a millionaire in no time at all. Sometimes these phenomenal systems that promise to fill your wallet even while you sleep cost a mere EUR 49.97, in other instances you will have to fork out thousands to have the privilege to be admitted to the “President’s Circle”, in yet another versions a monthly EUR 99 fee will get you in and some other times the black boxes are given away for FREE! Yes, completely FREE! Can you guess how they make their money with this last one? Hint: you will be trading a lot.

Magazines are also very good sources of ideas: check out Traders and Currency Trader (both free) and Today’s Trader and Active Trader. Another possible source of ideas for trading strategies is of course the Amazon Kindle shop. There you’ll find an ever increasing number of titles dedicated to trading namely to Forex trading that can serve as a starting point in developing a binary options strategy. The quality of these books - some of them are really only a few pages long - varies widely so be sure to read the reviews but do not trust them entirely: sadly nowadays it is common to find fake or intentionally misleading positive and negative reviews.

Last but absolutely not the least, there is the MQL4 / Automated trading Community where many traders make their systems available. Registration is free and you will find tons of information on the site.

Going back to the millions of results of these Google searches you will agree that it is fair to surmise that a huge number of people take a swing at the noble art of developing trading strategies. So why

don’t you? This is not a mere rhetorical question I do think that you will benefit a lot by understanding the basics of that process. It is really not that complex or time consuming to learn the fundamentals. Whether or not you end up developing and trading your own strategies, you will be much better equipped to assess other people’s ideas and will have a much firmer grasp on all aspects of trading. The first step towards that goal is a brief introduction to Technical Analysis.

TECHNICAL ANALYSIS

9 - What is Technical Analysis?

> *October: This is one of the peculiarly dangerous months to speculate in stocks. The others are July, January, September, April, November, May, March, June, December, August and February.*
> ~ Mark Twain

Originating from the work of pioneer Charles Dow, the founder of The Dow Jones Company, The Wall Street Journal and the developer of the Dow Jones Industrial Average index, the aim of technical analysis is to give a trader an edge by forecasting future prices of assets based on the analysis of their historical behavior.

Technical Analysis is often contrasted with Fundamental Analysis whose main concern is to determine an asset *intrinsic* value. Technicians, as the practitioners of Technical Analysis are known, are much more interested in the price movements of an asset than on determining its intrinsic value. By concentrating on the price movements Technical Analysis is really trying to assess the forces of supply and demand and understand in what direction those forces will propel the asset price in the future.

The fundamental assumptions of technical analysis state that a) the market discounts everything; b) the price moves in trends; and c) history repeats itself.

The market knows it all

Technical analysis assumes that an asset's price reflects all the available information about it - including fundamental factors. As such all that is left to analyze is its price movement, which is determined by the interaction of supply and demand.

Follow the trend

Technicians believe that price movements follow trends. They further believe that after a trend has been established, its continuation is the most likely path for the future price movement. A lot of trading strategies are based on this assumption.

Déjà vu all over again

Another tenet of technical analysis is that market participants tend to have consistent reactions to similar market situations. Changes in price are the result of changes in the trader's expectations of the asset future prices. Since price movements patterns often repeat themselves the study of what happened in the past gives clues to what will happen in the future.

A basic understanding of technical analysis will give any trader of binary options an edge. We will briefly review some of its core principles and tools.

10 - Basic concepts

Price

At any given moment the price of an asset represents the consensus expectations of the buyers (who expect the price to go higher) and the sellers (who expect the price to go lower). We can gain further insights by identifying further prices classifications:

Open - the price for the first trade of the period (e.g., the very first trade in the morning)

High - the highest price that was traded during the period. At this point more sellers than buyers started to show up.

Low - the lowest price that was traded during the period. At this point more buyers than sellers started to show up.

Close - the price for the last trade of the period (e.g., the very last trade in the afternoon)

Median - the average of the High and the Low prices for the period.

Typical - the average of the High, the Low and the Close prices for the period.

Weighted Close - the sum of High, the Low and twice the Close price divided by four.

Charts

Technical analysis always relied heavily on charts on the basis that a picture is deemed to be worth more than a thousand words. There are several types of charts, below are three very popular ones.

Line charts - the simplest of them all it represents a line connecting the closing prices over the time frame.

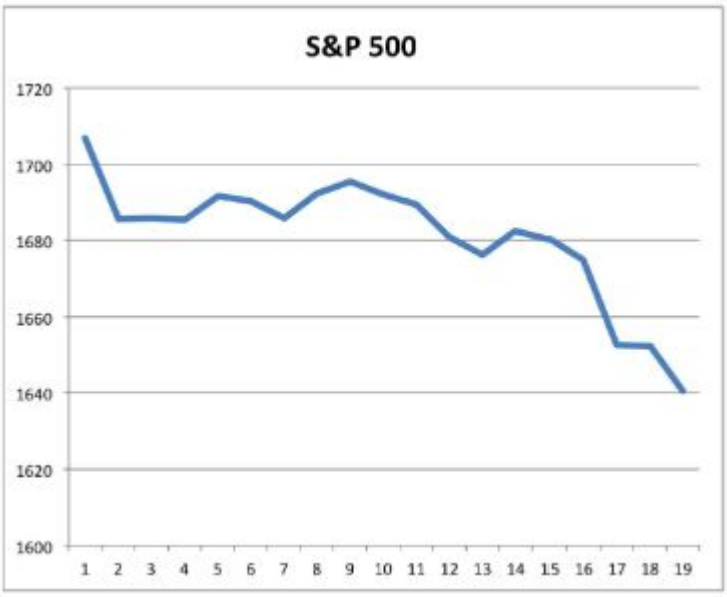


Figure 19: A line chart displaying closing prices of the S&P 500 index.

Bar charts - more information is available in this type of chart that can display the open, high, low and closing prices. The top of each vertical bar represents the highest price traded, the bottom the lowest price traded. The open and the close are represented on the vertical line by a horizontal tick respectively on its left and right.

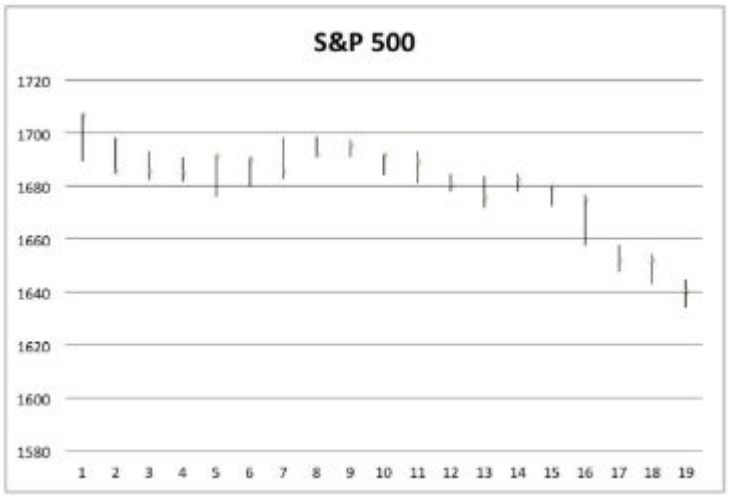


Figure 20: A simplified bar chart displaying high, low and close prices for the S&P 500 index (open price omitted).

Candlestick Charts - these are very similar to bar charts but have a wide bar on the vertical line, illustrating the difference between the open and close. If the price closes above the opening trade, that candlestick will usually be white or clear. If the price closes below the open, the candlestick will usually be red or black.

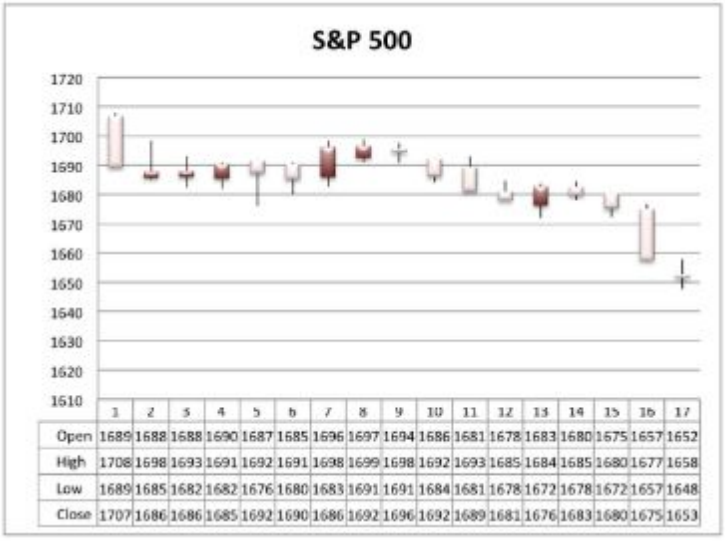


Figure 21: A candlestick chart displaying open, high, low and close prices for the S&P 500 index.

Periodicity

Data can be aggregated and displayed at different time periods: minutes, hours, days, weeks, months. Usually the shorter the periodicity the more difficult it is to predict changes in prices, as data is more affected by “noise” (random movements). However opportunities exist and the basic principles apply in all time frames.

Trends

A trend is the general direction of the price. There are uptrends (the price is moving higher) and downtrends (the price is moving lower) and sideways movement (absence of a clear uptrend or downtrend).

An *uptrend* is formed by a series of higher highs and higher lows. An upward trendline is a line drawn at the lows of an upward trend.

Figure 22: An uptrend in an S&P 500 index chart.

A *downtrend* is formed by a series of lower lows and lower highs. A downward trendline is a line drawn at the highs of the downward trend.

Figure 23: A downtrend in an S&P 500 index chart.

A *sideways* or horizontal trend has no clear ascending or descending action.

Figure 24: Sideways action in an S&P 500 index chart.

Support and resistance

Support is the price level below which the market participants do not expect the asset price to fall. Conversely *resistance* is the price level above which the market participants do not expect the asset price to climb. At support a lot of buyers are willing to buy the asset. At resistance a lot of sellers are willing to sell it. If a support or resistance level is broken that means the expectations have changed. Often if the price falls below a support level, that level will then become resistance. Conversely if the price rises above a resistance level, it will become support.

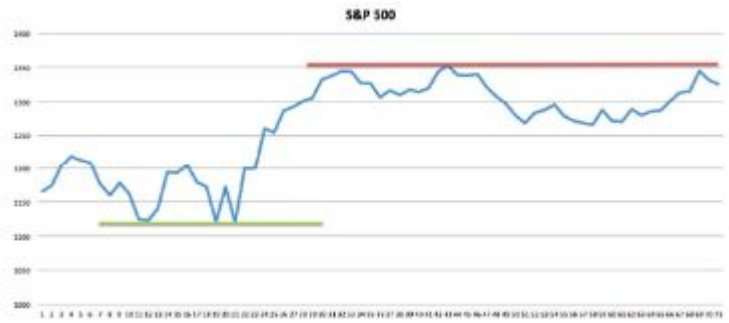


Figure 25: Support (green) and Resistance (red) levels in an S&P 500 index chart.

Chart patterns

Technicians look for patterns on a chart to identify current trends and trend reversals. Those patterns may also trigger buy and sell signals. The two particular types of patterns technicians search for are named *reversal* and *continuation*. A reversal pattern signals the reversal of the current trend. A continuation pattern signals that a trend will continue. Patterns are often named with terms suggestive of their distinctive formations.

The *Head and Shoulders* is one of the most popular and reliable reversal patterns. It is formed at the high of an upward trend and flags that this ascending movement is about to end.

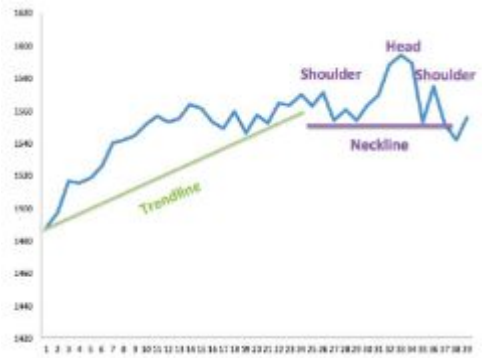


Figure 26: A Head and Shoulders pattern in an S&P 500 index chart.

The *Cup and Handle* is a continuation pattern that happens when the upward trend has momentarily paused but is expected to resume its ascending movement after an interval. The chart displays a cup like image proceeded by an upward trend. A downward or sideways price movement follows - the handle. Once the price movement breaks above resistance the ascending price movement resumes.

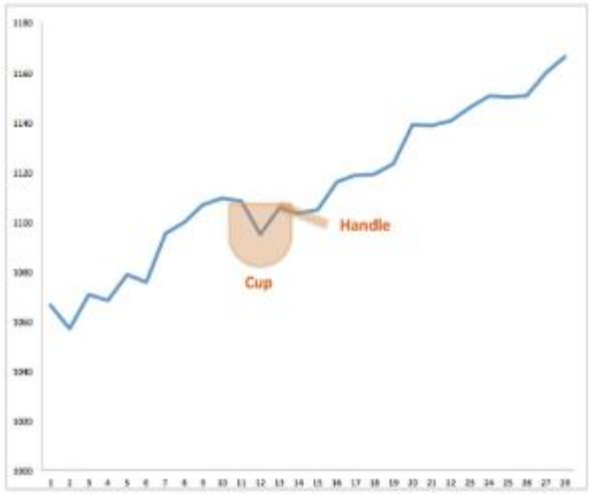


Figure 27: A Cup and Handle pattern in a S&P 500 index chart.

Moving averages

The *moving average* is one of the oldest and more popular tools of technicians. It is simply the average price of an asset over a period of time. There are several types of moving averages, such as simple or exponential, the later giving more weight to more recent price movements.

Period	Price	SMA-2	Calculation	SMA-3	Calculation
1	10				
2	11	10,5	(10+11)/2		
3	9	10	(11+9)/2	10,000	(10+11+9)/3
4	12	10,5	(9+12)/2	10,667	(11+9+12)/3
5	13	12,5	(12+13)/2	11,333	(9+12+13)/3
6	14	13,5	(13+14)/2	13,000	(12+13+14)/3
7	12	13	(14+12)/2	13,000	(13+14+12)/3
8	9	10,5	(12+9)/2	11,667	(14+12+9)/3
9	8	8,5	(9+8)/2	9,667	(12+9+8)/3

Figure 28: Shown above are two simple moving average calculations: over 2 periods (SMA-2) and 3 periods (SMA-3).

If the price is above its moving average the asset is in an uptrend; if the price is below its moving average the asset is in a downtrend.

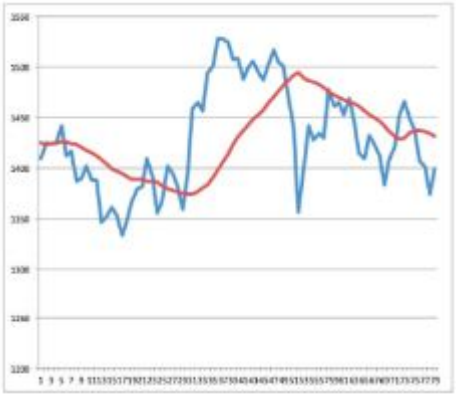


Figure 29: A 20-day moving average (red) plotted in an S&P 500 index chart.

Using two moving averages, when the short-term average (e.g., 10-day) is above the longer-term average (e.g., 20-day), the trend is up. If the long-term average is above the shorter-term average the trend is down.

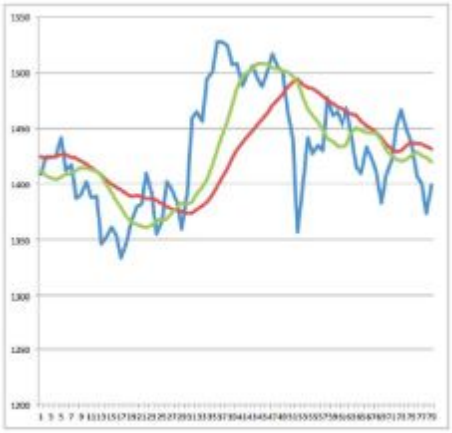


Figure 30: A 20-day moving average (red) and a 10-day moving average (green) plotted in an S&P 500 index chart.

Indicators

Indicators are mathematical calculations that can be applied to the price of an asset and used to confirm or anticipate future price movements. There are *leading* and *lagging* indicators. A leading indicator predicts price movements and a lagging indicator confirms them. A lagging indicator works great with long trends and will help a trader stay with the market, although missing the initial opportunities. Moving averages and the MACD (explained later) are examples of lagging indicators. A leading indicator is better during periods of sideways trading ranges, and will help a trader predict what will happen next. These indicators are usually bound within a range, for example between 0 and 100, and are often referred to as *oscillators*. They work by measuring how overbought or oversold an asset is, on the assumption that these are extreme conditions from which the price will bounce back.

Indicators also give signals through *crossovers* and *divergence*. Crossovers occur when either the price moves through a moving average, or when two moving averages cross over each other. Divergence occurs when the direction of the price trend is opposite to the direction of the indicator trend: it signals a weakening of the price trend.

11 - ADX

The average directional index (ADX) measures the strength of the current trend. It is a combination of a positive directional indicator (+DI) and a negative directional indicator (-DI). The +DI measures the strength of the raising movement while the -DI measures the strength of the falling movement. The +DI and the -DI are displayed along with the ADX line. The ADX oscillates between 0 and 100, with readings below 20 signaling a weak trend and readings above 40 signaling a strong trend.

Figure 31: In the second half of the chart above the S&P 500 index is rising. However, the ADX (blue line) reading below 20 signals this is a week uptrend.

12 - Bollinger Bands

Developed in the eighties by a guy called - you've guessed it! - Bollinger, John Bollinger, they display a moving average with two lines (bands) above and below it. These bands are plotted at standard deviation levels and what this means is that they self-adjust, being further away from the moving average during volatile markets and contracting during smoother periods. Some characteristics of Bollinger Bands:

- Prices tend to stay within the upper and lower band.
- When prices move at or above the upper band, there is an overbought condition.
- When prices move at or below the lower band, there is an oversold condition.
- After a tightening of the bands, sharp price changes tend to occur.
- A movement starting at one band tends to go all the way to the other band.

Figure 32: A period of lower volatility is followed by one of higher volatility. The Bollinger bands widen accordingly.

13 - Commodity Channel Index

The Commodity Channel Index (CCI) measures the variation of the current price of an asset from its average level over a given period. Despite its name it can be used with any type of asset to identify overbought (CCI above 100) and oversold (CCI below − 100) conditions. CCI can also be used to look for divergences: they occur when the asset price is making new highs (lows) and the CCI fails to do so.

Figure 33: CCI above 100 means the asset is overbought, below − 100 that the asset is oversold.

14 - MACD

One of the most used indicators is the moving average convergence divergence (MACD). It is the difference between two moving averages, usually obtained by subtracting the 26-day from the 12-day moving average of the price. The result is an indicator whose value oscillates above and below zero. If the MACD is greater than zero the most current expectations are more bullish than the previous ones. If the MACD is lower than zero the most current expectations are more bearish than the previous ones. A 9-day moving average of the MACD itself is normally also displayed. This is called the *signal* line: if the MACD falls below this line a “sell” signal is in place. Conversely, if he MACD rises above this line a “buy” signal is in place.

Figure 34: A (26,12) MACD for the S&P 500 index (blue line). The 9-day moving average of the MACD is plotted in green.

15 - Money Flow Index

The Money Flow Index (MFI) is a momentum indicator that uses both price and volume to measure the strength of money flowing in or out of an asset. It is used to look for divergencies if the price trends higher (lower) and the MFI trends in the opposite direction. It is also used to spot market tops (MFI above 80) and bottoms (MFI below 20).

Figure 35: MFI above 80 means the asset is overbought, below 20 that it oversold.

16 - PARABOLIC SAR

The Parabolic SAR (stop-and-reversal) trails price over time. It is below the trading prices when they are rising and above the trading prices when they are falling. You should therefore buy when the prices are above the SAR and sell when they are below the SAR.

Figure 36: Parabolic stop-and-reversals movements.

17 - Relative Strength Index

The Relative Strength Index (RSI) oscillates between 0 and 100 measuring the internal strength of price movements. Look for divergencies if the price makes a new high (low) and the RSI fails to do so. It is also used to spot market tops (RSI above 70) and bottoms (RSI below 30).

Figure 37: RSI above 70 means the asset is overbought, below 30 that it is oversold.

18 - Stochastic Oscillator

The Stochastic Oscillator is a momentum indicator that compares the asset close price relative to its price range over a given number of periods. It is displayed as two lines: a main one called %K and secondary one called %D (which is a moving average of %K). Typically one buys when %K or %D falls below and then rises above 20; and one sells when %K or %D rises above and then falls below 80. Also, a buy (sell) signal exists if the %K crosses above (below) the %D. Finally there is a divergence if prices make a series of new highs (lows) and the Stochastic Oscillator does not.

Figure 38: A buy (sell) signal exists if the %K crosses above (below) the %D.

19 - WILLIAM'S %R

Williams %R is the inverse of the %D Stochastic Oscillator. %R frequently anticipates a reversal in the asset price. Readings between 80 and 100 indicate an oversold condition and readings between 0 and 20 indicate an overbought condition.

Figure 39: %R between 80 and 100 indicate an oversold condition.

20 - Technical Analysis in action

There is no way to learn how to ride a bicycle without actually climbing on one and start pedaling. The same is true for Technical Analysis. Our bicycle will be a trading platform, which is a software that allows us to follow the price action of the assets we are interested to trade and also to apply technical analysis indicators to that price data. There are many very good trading platforms but because it is free and widely available our choice goes to MetaTrader.

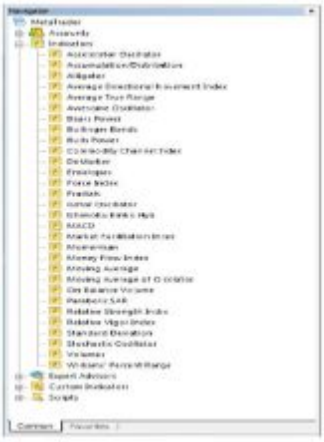


Figure 40: MetaTrader has a number of ready-to-use technical indicators that can be selected from its Navigator window.

The MetaTrader platform

21 - What is the MetaTrader platform?

The market is never wrong. Traders are wrong.
~ Jesse Livermore

The MetaTrader platform is a software developed by MetaQuotes Software that you can download to your computer and use to display charts with the price movement of the assets you are interested in trading. Furthermore it has several ready-to-use technical indicators that can help you make trading decisions. Because it is free and fairly easy to use MetaTrader is probably the most widely used trading platform around, particularly among Forex traders. A lot of Forex brokers make this platform available to its clients who use it to place their buying and selling orders. This is not the way we are going to use MetaTrader! We are going to use the MetaTrader platform only to get the price data and display the technical indicators that are used by our strategies. We monitor the assets we trade in MetaTrader and when a trade signal is triggered we will then go to the website of the binary options broker of our choice to manually enter the trade. MetaTrader will thus act as our research and trading assistant, not as our trading platform.

Figure 41: MetaTrader is a widely popular platform.

22 - How to download and install MetaTrader

The latest version of MetaTrader is MetaTrader 5 (MT5) however Metatrader 4 (MT4) is still the most widely used and the one we are interested in. A lot of Forex brokers make this platform available. A demo account will do for our purposes and a lot of brokers make demo accounts available, but others require you to open a real account and fund it. Make sure that the platform you choose has all the assets you are interested in because not all brokers trade all the assets for which there are binary options. You can download the platform directly from the MetaTrader 4 site but after installation in order to get the data feed you will be asked to sign-up an account with their suggested broker so check if that broker does have the assets you are interested in. Please note that MetaTrader works on the Windows operating system. If you are on a Mac you will have to use a Windows emulator. I suggest you choose the MetaTrader 4 from AVATRADE, one broker that has a wide variety of assets to trade. Go to the AVATRADE website and select Open Demo Account. Fill in your details and you will immediately receive a welcome email from AVATRADE with your platform login details and a link to download the MetaTrader software. Double click on the file you downloaded (avafinancial4setup.exe), enter your login details when prompted and you are ready to go!

Figure 42: Select Trading Platforms from AVATRADE main page, then MetaTrader 4 from the dropdown menu.

23 - The skinny on the MT4 platform

If MetaTrader is not opened locate an icon on your desktop named Ava MetaTrader. Double click to open it. Move the mouse over to the left to the section named “Market Watch” and right click it. If the Market Watch is not visible simply select View > Market Watch from the top menu or press Ctrl + M. Select “Show all”. Now all the assets available for trade in AVATRADE will be displayed. Scroll down to have a look.

Figure 43: The Market Watch section in MT4.

Most MetaTrader platforms adopt the GMT time. You can check it by looking at the top of the Market Watch section where the current time of the platform is displayed. To open a chart for an asset either select the asset in the “Market Watch” section and then right click the mouse and choose “Chart Window” or select the Chart Window icon first (it is located below the “File” option in the top menu) and then choose the asset.

You can select the time frame of a chart by clicking on the buttons above it (M1 = 1 minute, M5 = 5 minutes, M15 = 15 minutes, M30 = 30 minutes, H1 = 1 hour, H4 = 4 hours, D1 = 1 day, W1 = 1 week, M1 = 1 month).

Above the time frame buttons there are three chart icons: they allow you to choose having the price history displayed as a bar chart, candlesticks format, or line format.

You can close any chart by clicking on its tab name, which is located below the chart.

If you have several charts and want to visualize more than one at a time from the top menu select “Window” and then experiment what you like most by selecting “Cascade”, “Tile Horizontally” and “Tile Vertically”. To maximize any one chart select it and then click the square icon located at the top bar of the chart. To zoom in and out in a chart click the corresponding magnifying glass icon.

Figure 44: A 4-hour chart of EUR/USD in MT4.

To load a *template*, which is simply a customized way of displaying data, right click the mouse with the pointer over a chart, select “Template”, then “Load Template” and find and select the one you want to use.

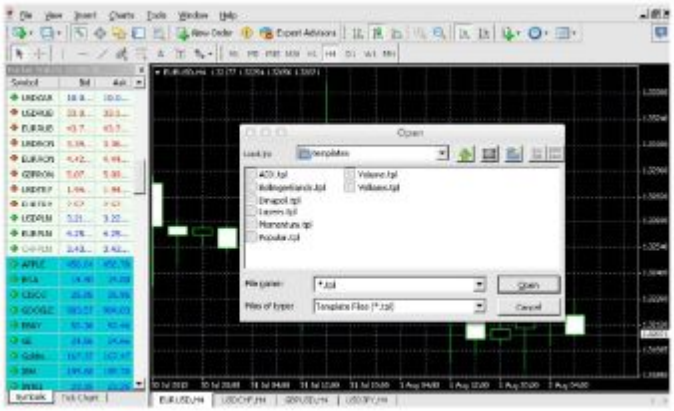


Figure 45: Loading a template in MT4.

To add indicators to a chart go to the Navigator section below the Market Watch section. If it is not showing first select “File” from the top menu and then choose “Navigator” or simply press Ctrl + N. In the Navigator click the “+” sign next to “Indicators” to show the list of available indicators. Find the indicator you want and drag it to the chart window. A pop-up window will open to allow customization of the indicator.

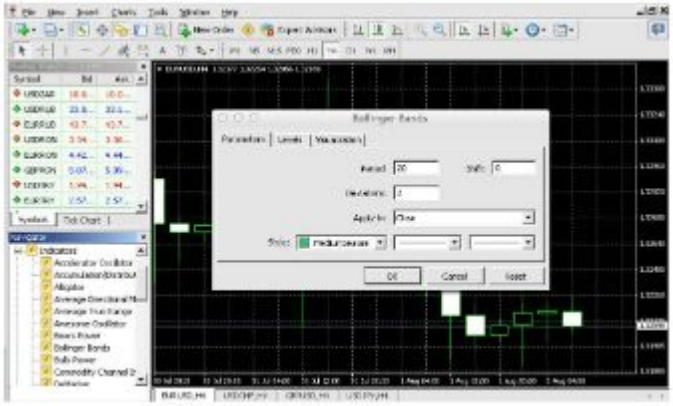


Figure 46: Loading an indicator in MT4.

24 - ADDING HISTORICAL DATA

MetaTrader will come with some recent data provided by your broker but you might want more for strategy back testing purposes. The amount of data you will be able to get for free will vary depending on the broker and the type of asset. To check it, select History Center from the Tools menu (or just press F2). Double click the asset that you plan to back test for. A list of time periods will appear below. Double click on the time frame that interests you to see the data available.

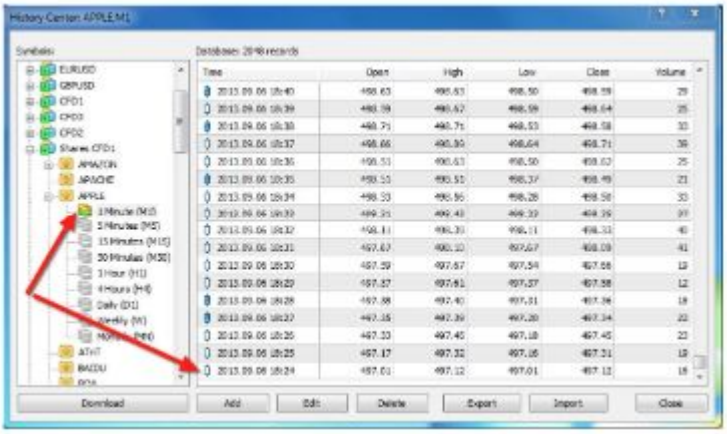


Figure 47: Apple: on September 16, 2013 there was approximately 10 days of data for the M1 (1 minute) timeframe.

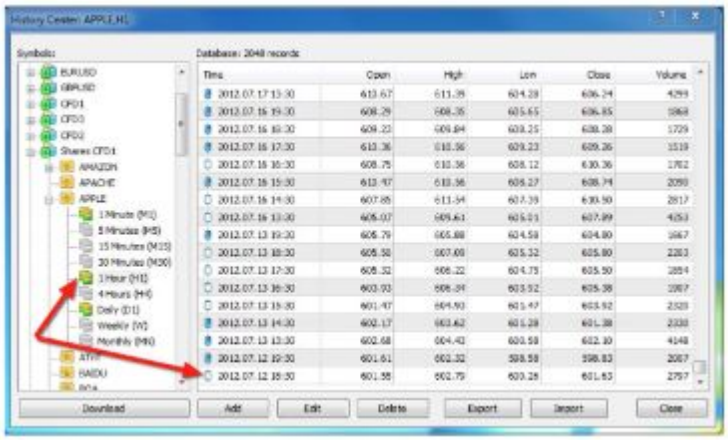


Figure 48: Apple: on September 16, 2013 there was more than one year of data for the H1 (1 hour) timeframe.

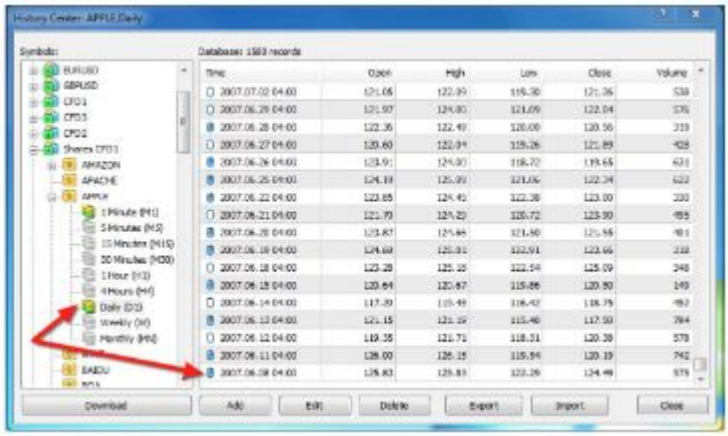


Figure 49: Apple: on September 16, 2013 there was more than six year of data for the D1 (1 day) timeframe.

Bear these different availabilities in mind later on when you think about new trading strategies. As you can see the History Center allows you to download and import data but of course that data has to be available somewhere. You might try the Download button from the History Center (it accesses the MetaQuotes Software Corp data center) but often there will be no other data available for you to download. There is no shortage of people who are very willing to *sell* you any kind of data, but getting it free might not be that easy. Yahoo

Finance is an excellent source of historical daily data for stocks and indices (but not for Forex). Unless you are technically savvy you might want to use a program to help you get the data downloaded. MLDownloader for Windows and StockXloader for Mac OS are two very reliable and inexpensive solutions.

Historic Forex data is much trickier since trading does not happen in a centralized exchange. Often data will vary depending on the data provider so to avoid frustration try to always use the same source. One good option is the free Tick Data Downloader software from StrategyQuant. For higher quality paid data go to Forex History Database. After you download the data (always use the M1 timeframe) click the Import button from the History Center, and then click Browse in the Import dialog to select the data file you downloaded. Press OK to import the data and then wait; it may take some time for the process to complete.

Figure 50: Importing GBPUSD M1 data from file after download.

To make use of the data you imported on other timeframes, you must first use the period_converter script supplied with MetaTrader. For that open a M1 chart window. Drag and drop the period_converter script from the Navigator to the chart, and set the

ExtPeriodMultiplier to the number of minutes to convert to. For M5, use 5; for H1, use 60; for H4, use 240, for D1, use 1440 and so on.

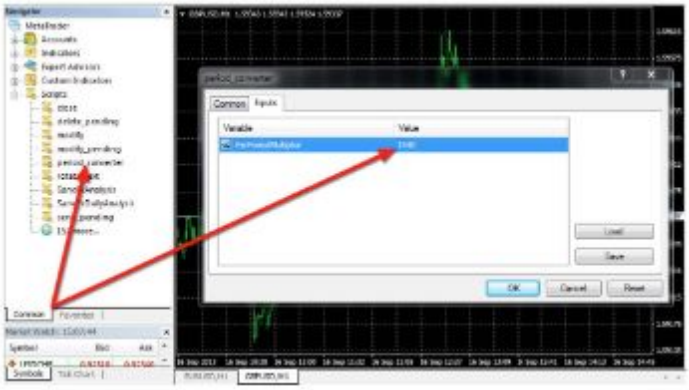


Figure 51: Applying the period_converter script to GBPUSD M1 (1 minute) data to get D1 (1 day) data.

DEVELOPING A STRATEGY

25 - Start by having a look at it

Experience taught me a few things. One is to listen to your gut, no matter how good something sounds on paper. The second is that you're generally better off sticking with what you know. And the third is that sometimes your best investments are the ones you don't make.
~ Donald Trump.

Suppose that you want to trade the EUR/USD with a High/Low binary option lasting one hour. How would you go about developing a strategy for it? What follows next is just for the purposes of illustrating a possible development path of a trading strategy so do not assume that you can take the final outcome and start making money with it. With that caveat, one common way to begin is to look for things that have worked in the past and that you assume will work again in the future. To start the process I suggest that you go to the MetaTrader platform, open a EUR/USD chart and set it to the H1 timeframe. Press F8 and select Candlesticks. Then click the magnifying glass icon several times to set the zoom to the maximum. You should end up with something similar to what is shown in the next chart.

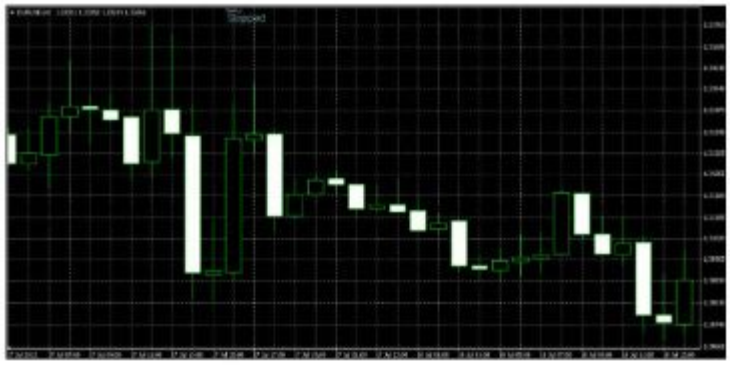


Figure 52: A 1-hour candlestick chart of the EUR/USD.

In this chart each candlestick represents the price action during one hour. White filled candlesticks are “down candlesticks” and the black filled ones are “up candlesticks”, meaning the price ended respectively down or up for that hourly period. If you hover the mouse above any of the candlesticks you will see at the bottom of the chart a detail of the price action for that hour:

Figure 53: The price action detail for the 10:00 − 11:00 GMT EUR/USD candlestick.

Now disable Auto Scroll by clicking on its icon (a green arrow in a chart to the right of the magnifying glass) and zoom out a little bit. Scroll backwards and try to get a feel of things. You might end up looking at a section of price action history like the one shown next.

Figure 54: The ups and downs of EUR/USD observed on a 1-hour candlestick chart.

This portion of the chart seems to suggest that when the EUR/USD is trending up most of the candles end up and when it is trending down most of the candles end down, doesn’t it?

Figure 55: The ups and downs of EUR/USD suggest a possible trading strategy.

Can you make something out of this? How would you translate this observation into a possible binary option strategy? The later question seems to be more easily answered: whenever an uptrend is in place you will buy a High option at the start of the hour; conversely, if EUR/USD is on a downtrend you will buy a Low option at the start of the candle. First though, you will have to come to terms with the insidious *Hindsight Curse*: after things have happened it is very easy to say what should have been done, but how do you know if you actually are in an uptrend or a downtrend? If you remember what was said in the Technical Analysis' Basic Concepts section, an uptrend is in place if a moving average of a shorter period is above the moving average of a longer period. So let's try that out with a 3 and 5 period moving average calculated over the typical price.

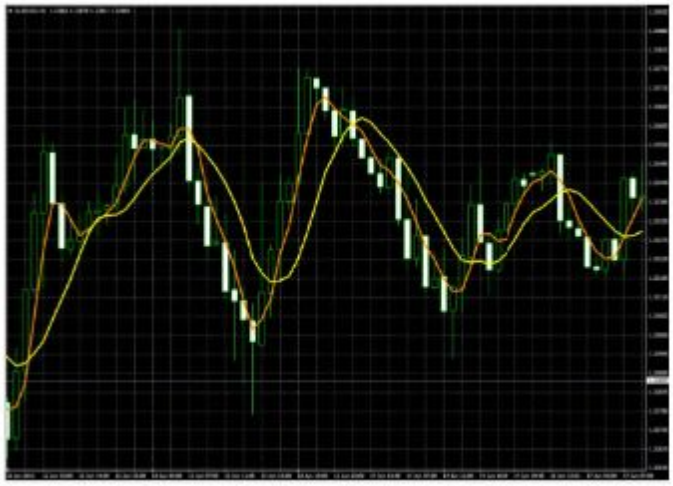


Figure 56: Determining the trend with a 3 (orange) and an 8 (yellow) period Moving Averages.

It does not seem that bad a match for a first try, wouldn't you say? It appears we have found something! Maybe there is something to say for that Technical Analysis gibberish after all!

26 - DIG DEEPER

Before getting all worked-up let's have a second look, this time at the cold numbers instead at a fancy graph. So turn to your MetaTrader platform and select History Center from the Tools menu. Select EURUSD and the 1 Hour (H1) time frame and click the Export button. A pop-up window will appear and you can now save a CSV (comma separated values) file containing the H1 data.

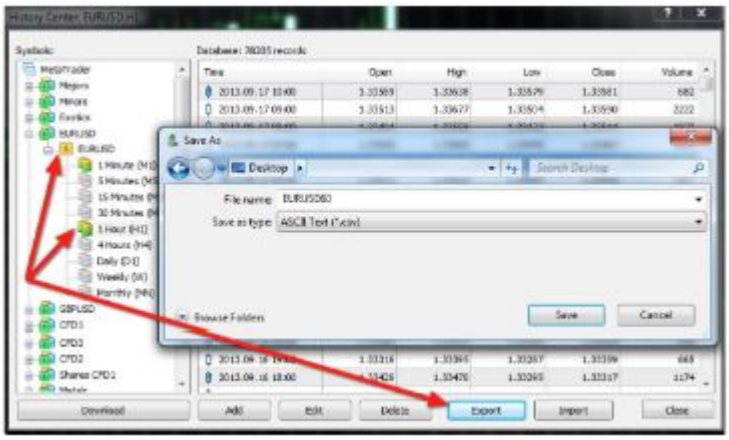


Figure 57: Exporting EURUSD H1 data to a CSV file.

CSV files are easily imported into Excel. Open Excel and select From Text in the Data menu. Locate your file and click import.

Figure 58: Importing a CSV file to Excel.

Click Next on Step 1 of the Text Import Wizard and on Step 2 change the Delimiters from Tab to Comma.

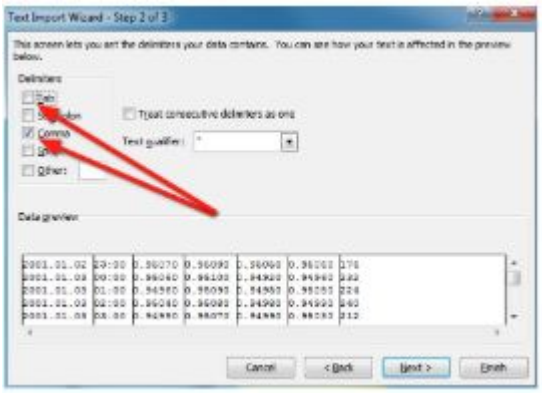


Figure 59: Marking Comma as the appropriate delimiter for a CSV file.

If you use a comma as your decimal separator you might adjust this setting by selecting the appropriate data fields and clicking the Advanced button on Step 3. You can skip the import of the last data column (volume).

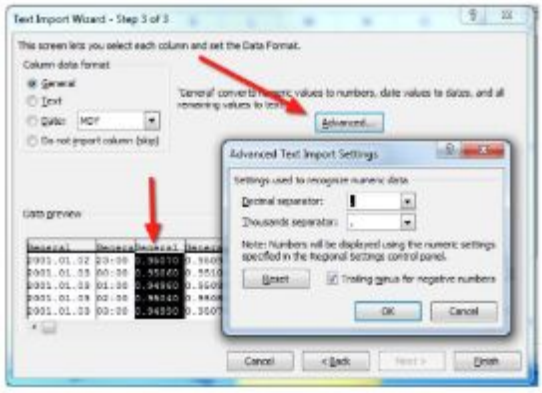


Figure 60: Adjusting Advanced import settings.

After the data is imported it is simple to add our chosen rules in Excel. Here is a look at the values for the first day in our graph, 2013/06/12:

Date	Time	Open	High	Low	Close	Typical	SMA 3	SMA 8	Signal	UpDown	Result
2013.06.11	23:00	1,33128	1,33135	1,33071	1,33108	1,33104667	1,331118889	1,330265833	Buy	Down	Lost
2013.06.12	00:00	1,33109	1,33151	1,33064	1,33146	1,33120333	1,331154444	1,33069125	Buy	Up	Won
2013.06.12	01:00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Buy	Down	Lost
2013.06.12	02:00	1,33081	1,33124	1,33058	1,33076	1,33086	1,331018889	1,331068333	Buy	Down	Lost
2013.06.12	03:00	1,33083	1,33137	1,33076	1,33102	1,33105	1,330967778	1,33107875	Sell	Up	Lost
2013.06.12	04:00	1,33101	1,33102	1,33008	1,33048	1,33052667	1,330812222	1,33099875	Sell	Down	Won
2013.06.12	05:00	1,33051	1,3306	1,32914	1,32941	1,32971667	1,33043111	1,33082625	Sell	Down	Won
2013.06.12	06:00	1,32999	1,3311	1,32929	1,33108	1,33049	1,330244444	1,330779583	Sell	Up	Lost
2013.06.12	07:00	1,3311	1,33333	1,33030	1,33052	1,33141333	1,33054	1,330781667	Sell	Down	Won
2013.06.12	08:00	1,33053	1,3308	1,3277	1,3296	1,32936667	1,330423333	1,330552083	Sell	Down	Won
2013.06.12	09:00	1,32957	1,32957	1,32722	1,32775	1,32818333	[illegible]	1,330202083	Sell	Down	Won
2013.06.12	10:00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Sell	Up	Lost
2013.06.12	11:00	1,32806	1,32831	1,32645	1,327	1,32725333	1,327657778	1,329585833	Sell	Down	Won
2013.06.12	12:00	1,32702	1,32963	1,32667	1,32895	1,32841667	1,327932222	1,329122083	Sell	Up	Lost
2013.06.12	13:00	1,32899	1,33133	1,32808	1,33133	1,33024667	1,328625556	1,329188333	Sell	Up	Lost
2013.06.12	14:00	1,33132	1,33411	1,33114	1,33356	1,33293667	1,330533333	1,329454167	Sell	Up	Lost
2013.06.12	15:00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Buy	Up	Won
2013.06.12	16:00	1,33529	1,33556	1,33360	1,33380	1,33435333	1,333018889	1,330461667	Buy	Down	Lost
2013.06.12	17:00	1,33382	1,33412	1,33090	1,33252	1,33251	1,33381	1,33035125	Buy	Down	Lost
2013.06.12	18:00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Buy	Up	Won
2013.06.12	19:00	1,33273	1,33356	1,3322	1,33290	1,33291667	1,332884444	1,332340667	Buy	Up	Won
2013.06.12	20:00	1,33301	1,33389	1,33295	1,33357	1,33347	1,333071111	1,332928333	Buy	Up	Won
2013.06.12	21:00	1,33356	1,33414	1,33286	1,33362	1,33354	[illegible]	1,33339	Buy	Up	Won
2013.06.12	22:00	1,33363	1,33378	1,33323	1,33375	1,33358667	1,333532222	1,33347125	Sell	Up	Lost
2013.06.12	23:00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Buy	Up	Won
2013.06.13	00:00	1,33432	1,33558	1,33409	1,3358	1,33549	1,334477778	1,333637083	Buy	Up	Won

Figure 61: A second look at the trend trading idea.

In this chart the first column has the date and the second one the starting time of each one-hour period. The price action for each one hour period is shown next in the Open, High, Low and Close columns. For example, for the one hour period starting at 00:00 hours of June 12, the price of EURUSD opened at 1.33109, climbed to a high of 1.33151 and dropped to a low of 1.33064, before finally closing at 1.33146. Adding the high, low and close prices and dividing the result by 3 obtains the typical price of 1.331154444. The columns labeled SMA-3 and SMA-8 show the simple moving averages of the typical price for 3 and 8 periods. The hypothesis is that an SMA-3 is higher than an SMA-8 is a Buy signal for the next period. If you now look at the period starting at 01:00 you will see an Up in the column labeled UpDown meaning the close price (1.33146) was higher than the open price (1.33109). If you had followed the Buy signal you would have Won your trade and that is what is shown under the Result column.

Unfortunately further analysis shows that the number of trades won is much less than what we had been hoping from our cursory look at the chart. The table below summarizes the weekly results that would have been obtained in June 2013 by following the SMA-3 above / below SMA-8 buy / sell signal. The first line shows the results for the days on display in the chart.

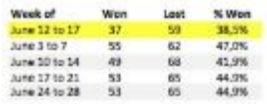
Week of	Won	Lost	% Won
June 12 to 17	48	48	50,0%
June 3 to 7	54	63	46,2%
June 10 to 14	57	60	48,7%
June 17 to 21	57	61	48,3%
June 24 to 28	55	63	46,6%

Figure 62: The grim reality appears.

What seemed a good idea turns out to be a looser and there is a valuable lesson here: never rely solely on the visible part of a chart to come up with a trading strategy. Always check a larger sample and do the math! As a minimum you need to know what your overall winning percentage is. Remember, you are building a strategy with a particular type of trade in mind. That trade has an average return and that average return determines the minimum winning percentage that your strategy needs to have for it to be worth trading. If you don't remember how to calculate that percentage go back and re-read the chapter What is a good trading strategy?. In any case as returns from a binary option trade are almost always below 100% as a general rule you will need a strategy with a winning percentage above 50%.

27 - TWIST IT OR TRASH IT?

You have tested your idea on a sample of historical data and it did not work. What do you do now? Basically you have two options: either you scrap it altogether or you twist it for a while until you either get where you want to be or you give up. By twisting I mean modifying, adding or deleting rules or technical indicators. For example, you could replace the 8-period simple moving average with a 21-period simple moving average. This is very easily done with our Excel spreadsheet and in a matter of seconds we have the trading results with the new parameters:



Week of	Won	Lost	% Won
June 12 to 17	37	59	38,5%
June 3 to 7	55	62	47,0%
June 10 to 14	49	68	41,9%
June 17 to 21	53	65	44,9%
June 24 to 28	53	65	44,9%

Figure 63: Trading results using SMA-3 and SMA-21.

Unfortunately this seems to have made things worse, not better. You could now test with different pairs of simple moving averages or even add a third moving average to the equation. Or you could add the rule that the closing price of the period has to be above (below) the short-term moving average for a buy (sell) signal to be triggered. Or maybe you want to stick with the original parameters and split the buy and sell signals? We do have them combined and who is to say that the overall results are not the combination of strong buy and weak sell signals? Let's have a look, again a simple task using our Excel spreadsheet:

Week of	Won	Lost	% Won
June 12 to 17	48	48	50,0%
June 3 to 7	54	63	46,2%
June 10 to 14	57	60	48,7%
June 17 to 21	57	61	48,3%
June 24 to 28	55	63	46,6%

all signals

Week of	Won	Lost	% Won
June 12 to 17	24	26	48,0%
June 3 to 7	38	35	52,1%
June 10 to 14	31	32	49,2%
June 17 to 21	22	34	39,3%
June 24 to 28	22	27	44,9%

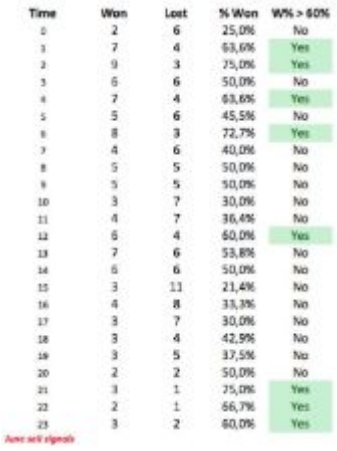
Buy signals

Week of	Won	Lost	% Won
June 12 to 17	24	22	52,2%
June 3 to 7	16	28	36,4%
June 10 to 14	26	28	48,1%
June 17 to 21	35	27	56,5%
June 24 to 28	33	36	47,8%

Sell signals

Figure 64: Buy and sell trading results using SMA-3 and SMA-8.

Trading outcomes between buy and sell signals are apparent but they are both still too low and lack the consistency needed for this information to be really useful for us. Nevertheless it is always a good idea to analyze a strategy by its simplest components and calculating buy and sell signals performance separately is a good practice. Do you have any ideas on how to proceed now? Since we are looking to develop an hourly strategy how about going a step further and scrutinize what the trading results are for these selling signals on a hourly basis for the entire month of June? We turn once again for Excel to do the heavy lifting for us:

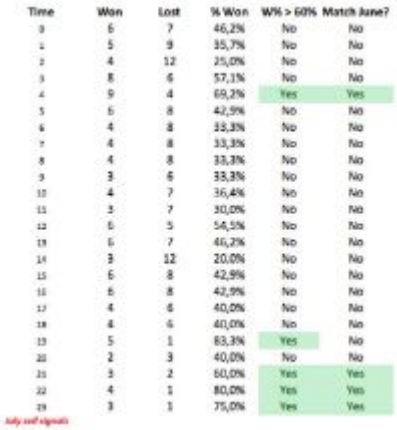


Time	Won	Lost	% Won	W% > 60%
0	2	6	25,0%	No
1	7	4	63,6%	Yes
2	9	3	75,0%	Yes
3	6	6	50,0%	No
4	7	4	63,6%	Yes
5	5	6	45,5%	No
6	8	3	72,7%	Yes
7	4	6	40,0%	No
8	5	5	50,0%	No
9	5	5	50,0%	No
10	3	7	30,0%	No
11	4	7	36,4%	No
12	6	4	60,0%	Yes
13	7	6	53,8%	No
14	6	6	50,0%	No
15	3	11	21,4%	No
16	4	8	33,3%	No
17	3	7	30,0%	No
18	3	4	42,9%	No
19	3	5	37,5%	No
20	2	2	50,0%	No
21	3	1	75,0%	Yes
22	2	1	66,7%	Yes
23	3	2	60,0%	Yes

June sell signals

Figure 65: June 2013 hourly trading results for sell signals using SMA 3 and SMA 8. Time is GMT.

I've highlighted the time slots in which the trading results were equal to or above 60%, which is a level that probably ensures that the strategy's expectancy is positive. Eight time periods fulfill that requirement (those starting at 01:00, 02:00, 04:00, 06:00, 12:00, 21:00, 22:00 and 23:00 GMT). You would need to be a night owl to consider trading this strategy, but since we are using it only for the purpose of illustrating the process, we are not going to worry about that. So is there money to be made here or not? Or, to put it in other words, will this work in the future (meaning after June 2013)? Let's try it out for July:



Time	Won	Lost	% Won	W% > 60%	Match June?
0	6	7	46,2%	No	No
1	5	9	35,7%	No	No
2	4	12	25,0%	No	No
3	8	6	57,1%	No	No
4	9	4	69,2%	Yes	Yes
5	6	8	42,9%	No	No
6	4	8	33,3%	No	No
7	4	8	33,3%	No	No
8	4	8	33,3%	No	No
9	3	6	33,3%	No	No
10	4	7	36,4%	No	No
11	3	7	30,0%	No	No
12	6	5	54,5%	No	No
13	6	7	46,2%	No	No
14	3	12	20,0%	No	No
15	6	8	42,9%	No	No
16	6	8	42,9%	No	No
17	4	6	40,0%	No	No
18	4	6	40,0%	No	No
19	5	1	83,3%	Yes	No
20	2	3	40,0%	No	No
21	3	2	60,0%	Yes	Yes
22	4	1	80,0%	Yes	Yes
23	3	1	75,0%	Yes	Yes

Figure 66: July 2013 hourly trading results for sell signals using SMA 3 and SMA 8. Time is GMT.

The chart above is similar to the previous one but shows the results for July. The last column labeled "Match June?" shows the hours for which trading performance exceeded 60% both in June and in July. One possibility therefore would be to go for it in August but only for these 4 matching time periods (04:00; 21:00; 22:00; 23:00) on the assumption that it is likely that the near future will be similar to the near past. You would then repeat the analysis in August that is you would find which time periods resulted in good

winning percentages both in July and in August and use that information to trade in September. You could perform your analysis on a weekly rather than a monthly basis but watch out for the number of trades that your decisions are based upon. As it is we have 50 trades in June and July for our 4 selected periods. That is certainly not a lot of data. We could include previous periods but there is a case to be made that the farther in the past you go the less relevant the data becomes to take future decisions so there is always a trade-off to be made.

So far this is what we have done:

- We selected to trade the EURUSD with a High/Low hourly binary option.
- Looking at a candlestick chart for June 12 to 14 we hypothesized that when the EURUSD is an uptrend the number of hourly candlesticks ending up is higher than the ones ending down. Conversely we hypothesized that if the EURUSD is on a downtrend the number of hourly candlesticks ending down is higher than the ones ending up.
- We decided to use two simple moving averages calculated on the typical price to determine the existence of an uptrend or a downtrend. Specifically, we assumed that when the 3-period SMA is above the 8-period SMA we are on an uptrend; and when the 3-period SMA is below the 8-period SMA we are on a downtrend.
- Our trading idea is to buy a hourly High binary trade when the previous hour period ends with the 3-period SMA above the 8-period SMA and to buy a hourly Low binary

trade when the previous hour period ends with the 3-period SMA below the 8-period SMA.

- We tested this strategy for several weeks in June and come up with unsatisfactory results.
- After twisting it a number of times we settled on the following strategy which produced a percentage of winning trades equal to or above 60% for the preceding two months:

  Buy an hourly Low binary trade when the previous hour ends with the 3-period SMA below the 8-period SMA.

  Trade only the hourly periods starting at 04:00, 21:00, 22:00 and 23:00.

If this were for real you would now have a seemingly workable idea that you just might want to trade. On the other hand, you might as well go for further improvements. Here are a few of the other things you could easily try with the data you have already imported into Excel:

- Change the calculations of the moving averages from the typical price to the close and/or median price;
- Change the number of periods of the fast and/or slow moving SMA;
- Add the condition that the period closing price has to be below (above) the fast (slow) SMA for a sell (buy) signal to be triggered;
- Change the calculations from simple moving averages to exponential moving averages;
- Check how often after N consecutive Up (Down) bars the next bar is Down (Up);

- Check if after a new low (high) of N periods the next bar is Up (Down);
- Check if after a new low (high) of N periods the next bar is Down (Up);
- Try different combinations of several of the above ideas to build trading signals.

As you can see the possibilities for twisting any trading strategy are endless. Mind you, we didn't even use any fancy technical indicators besides the simple moving averages. There is a reason for this: although Excel is very intuitive and an excellent analysis tool, which even has goal-seeking capabilities, it does not have any trading technical indicators built-in. This means that you would have to buy a third-party technical analysis pack to be able to apply those indicators. Instead, it is much simpler to turn to the MetaTrader platform, which already has all those indicators built-in. Furthermore it is easy to develop and test strategies using an Expert Advisor as we shall see next. Before that however, I assume that in spite of its purpose being only to provide a rough exemplification of how to develop a trading strategy, you might be wondering how the strategy we built fared in August. So here are the results:

Time	Won	Lost	% Won	W% > 60%	Match July?
0	5	7	41.7%	No	No
1	6	9	40.0%	No	No
2	8	5	61.5%	Yes	No
3	4	10	28.6%	No	No
4	8	6	57.1%	No	No
5	5	9	35.7%	No	No
6	9	4	69.2%	Yes	No
7	7	5	58.3%	No	No
8	5	7	41.7%	No	No
9	5	9	35.7%	No	No
10	8	6	57.1%	No	No
11	6	9	40.0%	No	No
12	6	10	37.5%	No	No
13	9	4	69.2%	Yes	No
14	4	9	30.8%	No	No
15	4	6	40.0%	No	No
16	3	7	30.0%	No	No
17	3	9	25.0%	No	No
18	5	5	50.0%	No	No
19	6	5	54.5%	No	No
20	8	1	88.9%	Yes	No
21	0	6	0.0%	No	No
22	3	3	50.0%	No	No
23	5	1	83.3%	Yes	Yes

August sell signals

Time	Won	Lost	% Won
4	8	6	57.1%
21	0	6	0.0%
22	3	3	50.0%
23	5	1	83.3%
	16	**16**	**50.0%**

August sell signals

Figure 67: August 2013 hourly trading results for sell signals using SMA 3 and SMA 8. Time is GMT. The table at the bottom summarizes the results for the four trading periods previously identified as the best ones to trade this strategy.

As you can see the strategy averaged a winning percentage of 50% in August and as we know this means it would have lost money if traded. The only time slot that matched July in having a winning percentage above 60% was the 23:00 one. Could the strategy be profitable again in September? Yes, but do you have the conviction needed to trade on it? As always it will be up to you to take that decision. Ask yourself if that would be a bet you want to take or if you would prefer instead to continue to twist this idea or even go for something completely different.

28 - Expert Advisors

An Expert Advisor (EA) is simply a program running on the MetaTrader platform that applies the technical indicators and trading rules that make up your strategy. Using EA's is a big help in the development and testing of trading strategies. Now, you probably do not feel the urge to start learning MQL, the programing language of the MetaTrader platform that allows the creation of Expert Advisors. Fortunately there are other very easy to learn programs that allow anyone to start creating Expert Advisors in a few minutes even without having a clue of what MQL is. Unfortunately most of these programs do not work for us because they will not close a trade based upon the time elapsed since its opening, and this is exactly how a binary option trade is closed. The one Expert Advisor creator that meets this requirement is EA Wizard. The full version will set you back USD 97 but EA Wizard also has a free version that lets you try the software to create your first expert advisors without cost. EA Wizard is very easy to use and it comes with good documentation and support so let's go forward and see how you install and test your EA once created.

It is really very simple, what you have to do is only to copy your EA which will be a file with the name you have chosen and the extension "ex4" and paste it to the folder "experts" inside your MetaTrader installation.

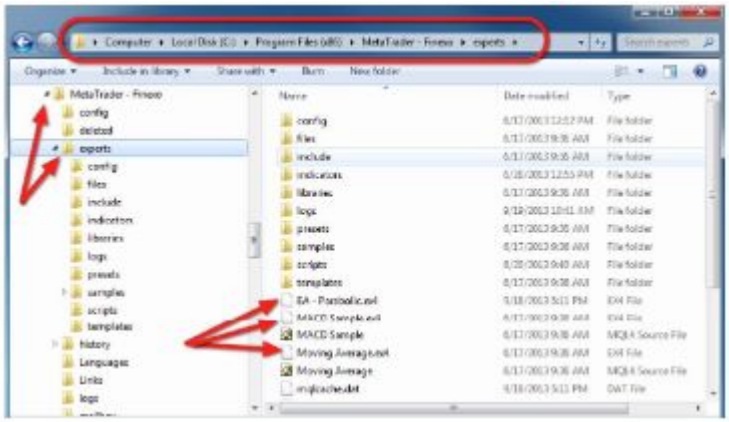


Figure 68: Expert Advisors, which are files with the “ex4” extension, go into the “experts” folder inside your MetaTrader installation.

After you have placed your EA’s into the experts folder close and reopen MetaTrader. Go to the Navigator and double-click Expert Advisors. Voilà! There they are ready for you to use!

Figure 69: Expert Advisors are greyed if only the “ex4” file is present. They are colored if the “mq4” file containing the source code is also in the experts folder.

Select the time frame you want and then drag and release the Expert Advisor into the chart: a pop-up window will appear, click OK to attach the EA to the chart (the EA name will appear in the upper right corner of the chart).

Figure 70: Dragging the expert advisor"Strategy2" into the H1 timeframe EURUSD chart. The Expert Advisor icon on the top shows it is stopped, meaning Expert Advisors will not do any live trading.

To test an Expert Advisor (which is to say to test the trading strategy it has built-in) press F6 with the EA already attached to the chart. The Strategy Tester will open up at the bottom. Press the Start button to start the testing.

Figure 71: Preparing to test "EA - Parabolic" on the H1 timeframe for EURUSD. Testing will be done for the period starting 2013/02/01 and ending 2013/02/28.

Once the testing completes select the bottom Report tab, right-click over the report area and choose "Save as Report". The built-in

report from MetaTrader does not help us very much so we are going to upload the report to a free program called EA Analyzer that will give us much more information.

Figure 72: Saving a report with the results of the test.

After installing the EA Analyzer open it and load the report you saved earlier.

Figure 73: Loading a test report into EA Analyzer.

There is a lot of information available for you to explore and gain insight on how to improve your strategy. For instance, in the Trade

analysis tab you can see the all-important %Wins and detailed results by weekday and hour.

Figure 74: EA Analyzer shows the all-important %Wins statistic.

Study the information carefully and use it to make changes to your strategy. You should probably begin by making only one change at the time and then test the results again. Take note of the changes and their outcome, you do not want to do duplicate work which is very easy to do if you don't write things down. Remember: your aim is only to maximize the %Wins! You are not concerned with the profit or loss figures that show up in the report because those are computed from buying and selling price levels. As you are trading binary options the only thing that matters is what your winning percentage is. If you get the %Wins above the minimum dictated by the average return paid by the type of binary option you will be trading you are OK. You should not trade the strategy before you get the %Wins above the required minimum.

Live Trading

Once you are satisfied with your trading strategy's performance it's time to enable live trading for the Expert Advisors in your DEMO

account. Click on the Expert Advisors icon on the top bar to enable live trading.

Figure 75: The Expert Advisors icon has a green play icon indication live trading is enabled.

Click the chart you are using and press F7 to open the Expert Advisors properties. Enable live trading here too.

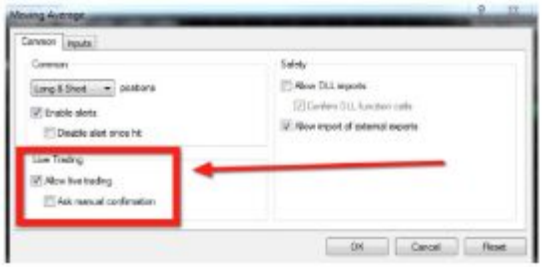


Figure 76: Enabling live trading for the Expert Advisor “Moving Average”.

If your Expert Advisor is running with live trading enabled it will sport a smiley face to the right of its name.

Figure 77: The smiley face next to the “Moving Average” Expert Advisor indicates it is trading live.

Your EA will monitor the price action and open new trades once the conditions set out in your strategy are met. When that happens turn to your binary broker platform and enter the same trade there (the amount of the trade will be discussed in the Money Management chapter). You can monitor the trades opened by your Expert Advisor(s) in the Journal tab of the Terminal at the bottom of MT4 (press Ctrl+T if it is not visible). Remember, you are only interested in knowing the time the trade was opened, the asset being traded, and if it is a buy or a sell. At this point you would turn to your money management system (discussed later), decide if you want to trade and if yes, how much to trade.

Figure 78: The Journal tab of the Terminal shows that the Expert Advisor “Moving Average” opened a sell trade on EURGBP at 11:20.

For greater convenience you can also install an Expert Advisor that will play a sound and pop-up an alert window each time a new trade is opened. The EA “Alerter” performs this function and is part of the free resources available to you as buyer of this book.

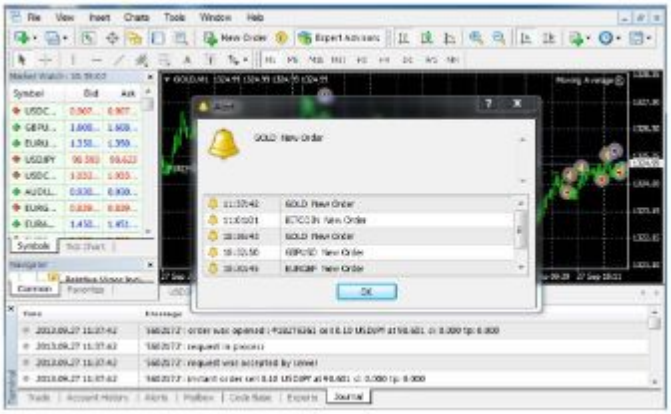


Figure 79: The Expert Advisor “Alerter” will play a sound and pop-out an alert window each time a new trade is opened.

29 - OVERVIEW

The figure below gives an overview of the strategy development process we have been studying. You decide on a type of binary option to trade and that of course depends on what your broker has available. The average return offered is a consideration since as you know by now the higher that return the lower your winning percentage has to be for you to make money. Of course this is a sort of Catch-22 since higher returns usually come with a lower success probability. You also want to check the minimum amount you have to trade and assess if that is a reasonable amount for you. You need to decide which asset you are going to trade, how long the trade will last and on which time frame your technical indicators will be applied. When it comes to testing you have to define a test data range and set the minimum acceptable winning percentage. If the strategy passes the criteria you should test it in an out of sample data to see if it holds. Finally you improve your strategy by modifying its components and adding and deleting technical indicators.

Figure 80: Overview of the strategy development process.

MONEY MANAGEMENT

30 - What is money management?

Rule number one of investing is never lose money. Rule number two is never forget rule number one.
~ Warren Buffet

Money management is the process of determining how much you should put into every trade with the ultimate aim of obtaining the maximum return over time from the money you have allotted to trading. No trading system is complete without a money management system and in fact many strategies end up being profitable because a sound money management system is in place. Others fail completely because they lack one. The core output of a money management system is *position sizing*, or how much money should you put into each trade. Notice that no system will tell you how much of your capital you should allocate to trading. This is of course a very individual decision that has to do with your net worth, your cash flow and your risk profile. We have gone over the minimum funding requirements for opening an account with several brokers and the only comment to add here is that if you find it difficult to meet those requirements you have no business trading binary options. On the other hand before you jump in with both feet and a lot of cash ask yourself:

-“If I cannot make money with EUR 1 000 is there really any good reason to believe that I can do it with EUR 50 000?”

Stick within your margin of comfort and let your bankroll grow as your trading skill and confidence increase.

The primal idea behind having a money management system is to avoid being wiped-out or severely crippled in a single or a few

trades. This can happen very easily regardless of the soundness of your trading system because you are bound to have stretches of several losses in a row from time to time. If you bet 10% of your initial capital in every trade and you suffer five consecutive losses you will end up with 50% of the amount you started. While not wiped-out, if your average return per trade is 70%, you will now need 7 consecutive wins to bring your capital to just 99% of what is was before the losses.

To have the emotional resilience to withstand the inevitable bankroll swings that occur in trading you must trust both your trading strategy and your money management system. That trust can only be achieved by understanding the system's principles and what you can expect from it in terms of the ups and downs in your bankroll. What follows is an overview of a number of money management systems. Going over it will give you the knowledge to be comfortable using them. Most of these systems have their origins in a gambling framework where both the returns and the success probabilities were known and constant. When trading binary options the returns are known beforehand and so that premise holds fairly well. On the other hand the constancy of your selected trading system winning probability is somewhat of a stretch so bear that in mind and always keep monitoring and fine-tuning it. Even with that caveat it is very much worthwhile investing your time learning the nuts and bolts of the various money management systems.

31 - The Gut Feeling System

The name says it all… meaning this is no system at all! You just trade on what your intuition tells you about the outcome of your next trade. If you feel you will lose you bet small and if you feel you are going to win you bet big. How small or how big depends on your "conviction" level and your bankroll, or what remains of it. If you are a psychic or have somehow acquired divinatory powers this should be your system of choice. You might at first think you do not qualify but judging only by the number of people who use this system it probably merits you give it a second consideration. If you want to improve your skills in this area you could do much worse than starting with the immensely readable "Wall Street and Witchcraft: An investigation into extreme and unusual investment techniques" by the late Max Gunther.

32 - The Martingale System

The Original Martingale

The Martingale system had its origins among betting enthusiasts in 18th century France. It was specifically developed for a coin flip bet in which a gambler wins his stake if he guesses correctly or loses it if he does not. The seemingly unbeatable Martingale system had a gambler doubling his bet every time he suffered a loss thus assuring that when the inevitable win round arrived he would recoup all his previous losses and win a profit equal to his original stake. Of course, this supposes that the gambler has unlimited funds so that he can withstand any string of bad luck that he might suffer. Due to the exponential growth of the bet this is by all means not certain. The system also supposes that there is no maximum bet limit, other assumption that does not hold nowadays neither in gambling not in a binary options trading context.

Martingale for Binary Options

To use the system with binary options you start by defining the initial amount you are going to trade, say EUR 50. If the trade wins, in your next trade you will also trade EUR 50. If you lose, you increase the amount so that if you win you recover all that you have lost before plus you make the same profit as you would have made if your first trade was a win. You calculate that amount by dividing the EUR 50 by the average return of the trade and adding EUR 50. If the average return is 70% you would bet EUR 122 (EUR 50 / 70% + EUR 50). If you win you go back to trading EUR 50, if you lose you

will trade EUR 296 [(EUR 50 + EUR 122) / 70% + EUR 50] and so on.

The idea here is that a stretch of losses will end sooner or later and when it does you will make all your money back plus win that original bet. Of course, this supposes that you have unlimited funds and that your broker does not have a maximum bet limit. In fact the brokers do have maximum bet limits: Banc de Binary has a EUR 3 000 limit, 24option.com a EUR 50 000 limit and Binary.com has a EUR 100 000 *payout* limit. Starting with a EUR 50 bet, a trading strategy with a winning percentage of 60% using the Martingale system will exceed those limits after five consecutive losses with Banc de Binary and eight consecutive losses with 24option.com and Binary.com. Surprised?

Trade #	Trade amount	Probability of # losses
1	50	40.000%
2	122	16.000%
3	296	6.400%
4	719	2.560%
5	1,746	1.024%
6	4,240	0.410%
7	10,298	0.164%
8	25,009	0.066%
9	60,736	0.026%
10	147,502	0.010%
11	358,219	0.004%
12	869,960	0.002%
13	2,112,760	0.001%
14	5,130,989	0.000%
15	12,460,973	0.000%

Figure 81: Evolution of the trade amount using Martingale for Binary Options with a 70% return and assuming losses in all trades. The probability of # consecutive losses for a trading strategy with a winning percentage of 60% is shown in the third column.

Check out in the third column the probabilities of striking 6 and 9 consecutive losses with a trading system that wins 60% of the times: a microscopically small 0.410% and 0.0256%! Surely that will happen once on a million years only, won't you say? At this juncture I somehow feel compelled to recall what happened on August 18,

1913, in a game of roulette at the Monte Carlo Casino. Gamblers started to flock in droves to one table where the ball was displaying a very unusual attraction to black. When it fell on black for the twentieth time the number of gamblers betting their entire bankroll plus whatever they could borrow on red was going through the roof. The premise was that such a long sequence of blacks must be about to end. At this time a great number of people had already lost all their money and so would most of those still placing their bets on red as the ball quietly proceeded to favor black for another six consecutive times. As uncle Murphy would postulate some decades later “if something can go wrong, it will go wrong!”.

33 - The Paroli System

Also known as the anti-Martingale, this system, which probably originated with the Faro card game, has you doubling your stake for a set number of times after you book a win. It was conceived with small (but lucky!) bankrolls in mind and it is designed to profit from winning streaks, again in a bet that pays a 100% return. Besides your initial stake there is one other element that has to be decided before starting to use the Paroli system and that is how many times you will double that initial stake. Many traders use three as a rule of thumb. So with that if your initial stake is EUR 10 and you book a win, your second trade will be for EUR 20; if you win the next time you stake EUR 40; if you win again you stake EUR 80 and then whatever the outcome is you go back to the initial EUR 10.

You can use probabilities to help you decide the number of your maximum winning streaks. For example, if your trading system gives you a 70% chance of winning the probability of winning four times in a row is 70% x 70% x 70% x 70% = 24%. In general, if W is the success rate of a trading system and N is the number of consecutive wins, the probability P of scoring N wins in a row is:

- P = W ^N (where ^ denotes exponentiation) or simply

P = W x … x W (W multiplied by itself N times)

Do I hear you ask what should be the minimum probability required for setting N? Wrong question my friend! The real question you should be asking yourself is:

- “How lucky do I feel today?”

Paroli for Binary Options

To adapt the Paroli system to Binary Options you simply add your wins to the previous stake:

- New stake in case of win = Previous bet amount + Previous bet amount x Average return of a trade

For example, if the average return is 70% and the initial stake is EUR 10, you would increase your stake by EUR 7 (EUR 10 x 70%) to EUR 17 if you win. If you lose you go back to betting EUR 10. If you win the “previous bet amount” is EUR 17 meaning your new bet would be for EUR 28.90 (EUR 17 + EUR 17 x 70%). Win again and you will bet EUR 49.13 on the next turn and so on.

34 - THE D'ALEMBERT SYSTEM

Attributed to Jean-Baptiste le Rond d'Alembert, a 18th century French mathematician and physicist, this system requires that you first define how much your basic trading amount or *unit* is. You then add one unit to your stake every time you lose and you decrease your stake by one unit ever time you win. There is also a variation of this system known as the Reverse D'Alembert where you increase the stake when you win and decrease the stake when you lose.

Suppose that your trading unit is EUR 5. Here is how the d'Alembert system would work:

1) You trade EUR 5 and you lose. Your stake increases by EUR 5.
2) You trade EUR 10 and you lose. Your stake increases by EUR 5.
3) You trade EUR 15 and you win. Your stake decreases by EUR 5.
4) You trade EUR 10 and you lose. You stake increases by EUR 5.
5) You trade EUR 15 and you lose. Your stake increases by EUR 5.
6) You trade EUR 20 and you win. Your stake decreases by EUR 5.
7) You trade EUR 15 and you win. Your stake decreases by EUR 5.
8) You trade EUR 10 and you win. Your stake decreases by EUR 5.
9) … and so on.

D’Alembert for Binary Options

Like the Martingale and Paroli systems this one was also developed for a coin flip bet in which a gambler wins his stake if he guesses correctly or loses it if he does not. We can likewise twist it to suit binary options by calculating the amount we are going to increase or decrease our stake as:

- Change in stake = Trading unit / Average return of a trade

For example, if the average return is 80% and the unit is EUR 20, if you lose you would increase your stake by EUR 25 (EUR 20 / 80%) to EUR 45. Lose again and the new bet would be for EUR 70 (EUR 45 + EUR 25). Win and your next bet amount is going to be EUR 45 (EUR 70 - EUR 25) and so on.

35 - The Fibonacci System

Leonardo Pisano Bigollo, known as Fibonacci, was a very important Italian mathematician of the 13th century, who introduced the Hindu–Arabic numeral system in Europe. He also spread the word about a sequence of numbers that came to be known as the Fibonacci numbers. In a Fibonacci sequence, the first two numbers are by definition 0 and 1 and afterwards each number in the series is the sum of the previous two numbers:

- 0,1,1,2,3,5,8,13,21,34,55,89,144,etc.

It seems this sequence was developed to answer the question of how many pairs of rabbits will result from one first pair in a year, if every month each pair produces a new pair which from the second month on becomes reproductive. Fibonacci numbers seemingly pop out throughout the natural world. Both the number of leaves in a plant and the number of petals in a flower tend to be a Fibonacci number. If you divide two consecutive Fibonacci numbers the result is approximately 1.61803, a number called "the golden ratio". Even the famous Pascal triangle has Fibonacci numbers all over it. There are reams of books about Fibonacci applications to trading. "Blockhead: The Life of Fibonacci" is a very interesting biographical look at the man itself.

As with the D'Alembert system, to use the Fibonacci system you start by defining what your basic trading amount or *unit* is (and you can also adapt this unit to your specific binary option trading strategy parameters as seen before). If you lose your bet you increase your stake following the Fibonacci sequence (ignoring the zero).

For example, suppose that your trading unit is EUR 50. Here is how it could go:

1. You trade EUR 50 and you lose. Fibonacci #1 is 1; your stake remains the same.
2. You trade EUR 50 and you lose. Fibonacci #2 is 1; your stake remains the same.
3. You trade EUR 50 and you lose. Fibonacci #3 is 2; your stake increases to 2 units.
4. You trade EUR 100 and you lose. Fibonacci #4 is 3; your stake increases to 3 units.
5. You trade EUR 150 and you lose. Fibonacci #5 is 5; your stake increases to 5 units.
6. You trade EUR 250 and you lose. Fibonacci #6 is 8; your stake increases to 8 units.
7. You trade EUR 400 and you lose. Fibonacci #7 is 13; your stake increases to 13 units.
8. You trade EUR 650 and …

When you win you cross out the previous last two numbers and stake a number of units equal to the number preceding the ones you just crossed. You proceed likewise until you are again trading with a stake of one unit:

8. You trade EUR 650 and you win. Cross out the last two numbers (13 and 8). Stake 5 units.
9. You trade EUR 250 and you win. Cross out the last two numbers (5 and 3). Stake 2 units.
10. You trade EUR 100 and you win. Cross out the last two numbers (2 and 1). Stake 1 unit.
11. You trade EUR 50 and …

Fibonacci for Binary Options

The same adjustment we did for the d'Alembert system works here:

- Adjusted trading unit = Trading unit / Average return of a trade

Now you just have to follow the rules as exemplified above using the adjusted unit.

36 - The Percentage of Bankroll System

A frequent way traders use to determine the amount to bet in any single trade is to arbitrarily select a percentage of your bankroll (the amount of money you allotted to trading). As a rule of thumb this percentage is usually set between 2% and 5% the choice depending on your trading style.

If you start with EUR 1 000 and adopt the 2% value, then you first trade would be for EUR 20 (EUR 1 000 x 2%). Assuming a 75% return, if you win your bankroll would increase to EUR 1 015 (EUR 1 000 + EUR 20 x 75%). Your next trade would therefore be for EUR 20.30 (EUR 1 015 x 2%). If now you lose your bankroll decreases to EUR 994.70 (EUR 1 015 - EUR 20.3). As your bankroll increases so does the size of your trades. If you suffer losses and your bankroll decreases, the size of your trades also decreases. This is better than having a fixed absolute value to trade because over time that fixed value will inevitably become either too small or too big in relation to your bankroll.

To illustrate the difference in results of the Percentage of Bankroll system versus a Fixed Amount system I ran a Monte Carlo simulation. This is a technique perfected during the course of the atomic bomb project in the Los Alamos Laboratory during the 1940's. It allows the estimation of the probabilities of uncertain outcomes by first modeling them and then play them out thousands of times on a computer. The nuclear scientists in the project were big fans of gambling and baptized the technique after the famous Monte Carlo Casino. At the time they used the gigantic ENIAC (Electronic Numerical Integrator And Computer) to run the calculations but nowadays any personal computer with Excel can do it, although it can take some time to perform the simulation. Check section

Running a Monte Carlo Simulation in Excel to learn how to perform your own simulations.

In my simulation I took the average of 10 000 series of 500 trades using a 65% winning percentage and a 70% win return. I set the initial bankroll at EUR 10 000, the fixed amount to trade at EUR 200 and the percentage of bankroll at 2%, so the first trade amount is the same on both systems. The table below shows the first 10 trades of one of the 10 000 series of 500 trades.

Trade #	Win/Loss	Bankroll	Fixed amount	Bankroll	% of bankroll
1	Win	10,000	200	10,000	200
2	Win	10,140	200	10,140	203
3	Win	10,280	200	10,282	206
4	Loss	10,420	200	10,426	209
5	Win	10,220	200	10,217	204
6	Win	10,360	200	10,360	207
7	Win	10,500	200	10,505	210
8	Win	10,640	200	10,652	213
9	Win	10,780	200	10,801	216
10	Loss	10,920	200	10,952	219

Figure 82: The first 10 of 500 trades of one of the 10 000 simulations I used to compare the Percentage of Bankroll System and the Fixed Amount System. The columns called “Bankroll” show the bankroll before the trade. On Trade #10, which ended up in a loss, the initial bankroll was EUR 10 920 for the Fixed Amount System and EUR 10 925 for the Percentage of Bankroll System.

The simulation showed that after 500 trades the average bankroll for the Fixed Amount System was EUR 21 083. For the Percentage of Bankroll System it was EUR 30 257, which is almost 44% higher. The average trade amount for the later was EUR 366 and that is 83% higher than the EUR 200 of the Fixed Amount System, so more money was put to work in a consistent and controlled way and that is why the ending bankroll is higher.

37 - The Kelly System

Developed by J.L. Kelly in the fifties the Kelly %, Kelly system, Kelly criterion or Kelly formula will do better than any other money management system if a bet with the same probability of winning or losing each time and the same payout ratio is entered repeatedly. Kelly's work was popularized by Professor Edward O. Thorp, the author of the famous "Beat the Dealer" blackjack book, inventor of the first wearable computer, and hedge fund manager extraordinaire among other accomplishments. Although not free from controversy (it is said that the late Economics Nobel Prize winner Paul Samuelson hit the roof at the mere mention of its name) the Kelly % is reputedly used today by many mainstream investment powerhouses such as Goldman Sachs and super successful investors as Warren Buffett of Berkshire Hathaway and Bill Gross of PIMCO. The Kelly formula looks innocent enough:

- Kelly % = [W x (R + 1) - 1] / R

Were W = the average winning percentage of the strategy and R = the average return of the trades. The output of the formula is a number, the percentage of the bankroll that you should use in your next trade. For example, with W= 60% and R = 70%, the Kelly % is 2.86% and if your bankroll is EUR 1 250 you should stake EUR 35.75 (EUR 1 250 x 2.86%).

Note that the Kelly formula seeks to maximize gains and may generate large drawdowns at times. If you want a quieter ride you may go for a "half Kelly" or even a "quarter Kelly" meaning you take only one half or one fourth of the Kelly %, (1.43% or 0.715% in the example above). Although you can and probably should bet less than the Kelly%, in no case should you go above it, as this will demonstrably result in you being wiped-out (a technical term used to describe your bankroll when it reaches zero).

38 - THE SYSTEMS COMPARED

To compare the six Money Management Systems I ran Monte Carlo Simulations for two strategies. I simulated 10 000 runs of 1 000 trades each. When the trade amount required by any system was superior to the existing bankroll, the entire bankroll amount was traded. The results are detailed next.

STRATEGY A

Average return = 70%; Average win percentage = 60%; Expectancy = 0.02; Starting bankroll = EUR 5 000; Default starting bet = EUR 100.

		Martingale		Feroli		d'Alembert		Fibonacci		% of bankroll		Kelly	
Trade #	Win/Loss	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet
1	Loss	5,000	100	5,000	100	5,000	100	5,000	100	5,000	100	5,000	143
2	Win	4,900	243	4,900	100	4,900	243	4,900	143	4,900	98	4,857	139
3	Win	5,070	100	4,970	200	5,070	100	5,000	143	4,969	99	4,954	142
4	Win	5,140	100	5,110	400	5,140	100	5,100	143	5,038	101	5,053	144
5	Loss	5,210	100	5,390	800	5,210	100	5,200	143	5,109	102	5,154	147
6	Loss	5,110	243	4,590	100	5,110	243	5,057	143	5,007	100	5,007	143
7	Win	4,867	100	4,490	100	4,867	386	4,914	143	4,907	98	4,864	139
8	Win	5,280	100	4,560	200	5,137	243	5,014	143	4,975	100	4,961	142
9	Win	5,350	100	4,700	400	5,307	100	5,115	143	5,045	101	5,061	145
10	Win	5,420	100	4,980	800	5,377	100	5,215	143	5,116	102	5,162	147

Figure 83: The first 10 of 1 000 trades of one of the 10 000 simulations comparing the six Money Management Systems for a strategy with an average return of 70% and average win percentage of 60%.

The average maximum consecutive wins and losses was 12.7 and 7, respectively. Below are the six systems ranked by their average ending bankroll. Also shown is the percentage of simulations that ended with a zero bankroll (wipe-out).

1) Kelly - Ending bankroll: EUR 10 777 (+116%); Wiped-out: 0%

2) d'Alembert for binary options - Ending bankroll: EUR 10 480 (+110%); Wiped-out: 24%

3) Paroli - Ending bankroll: EUR 9 922 (+98%); Wiped-out: 15%

4) Fibonacci for binary options - Ending bankroll: EUR 8 868 (+77%); Wiped-out: 9%

5) % of bankroll - Ending bankroll: EUR 8 548 (+71%); Wiped-out: 0%

6) Martingale for binary options - Ending bankroll: EUR 8 061 (+61%); Wiped-out: 40%

STRATEGY B

Average return = 70%; Average win percentage = 61%; Expectancy = 0.037; Starting bankroll = EUR 1 000; Default starting bet = EUR 10.

		Martingale		Paroli		d'Alembert		Fibonacci		% of bankroll		Kelly	
Trade #	Win/Loss	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankrol	Bet
1	Win	1,000	10	1,000	10	1,000	10	1,000	10	1,000	30	1,000	164
2	Win	1,007	10	1,007	20	1,007	10	1,007	14	1,022	31	1,118	183
3	Win	1,014	10	1,022	40	1,016	10	1,017	14	1,044	31	1,250	205
4	Win	1,022	10	1,050	80	1,022	10	1,027	14	1,066	32	1,397	229
5	Loss	1,029	10	1,108	10	1,029	10	1,037	14	1,089	33	1,562	256
6	Win	1,019	24	1,098	10	1,019	24	1,023	14	1,056	32	1,306	214
7	Win	1,036	10	1,105	20	1,036	10	1,034	14	1,079	32	1,460	239
8	Win	1,043	10	1,120	40	1,043	10	1,044	14	1,102	33	1,633	268
9	Win	1,050	10	1,148	80	1,050	10	1,054	14	1,126	34	1,825	299
10	Loss	1,058	10	1,206	10	1,058	10	1,064	14	1,151	35	2,041	334

Figure 84: The first 10 of 1 000 trades of one of the 10 000 simulations comparing the six Money Management Systems for a strategy with an average return of 70% and average win percentage of 61%.

The average maximum consecutive wins and losses was 14.6 and 6.2, respectively. Below are the six systems ranked by their average ending bankroll. Also shown is the percentage of simulations that ended with a zero bankroll (wipe-out).

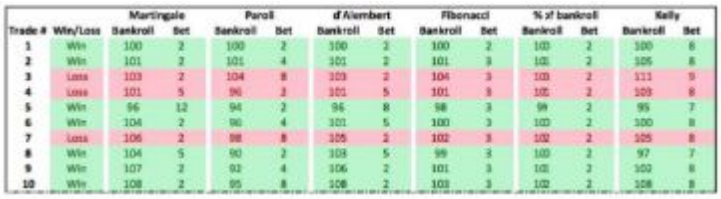
1) Kelly - Ending bankroll: EUR 10 100 (+910%); Wiped-out: 0%
2) % of bankroll - Ending bankroll: EUR 3 709 (+271%); Wiped-out: 0%
3) d'Alembert for binary options - Ending bankroll: EUR 2 263 (+126%); Wiped-out: 8%
4) Paroli - Ending bankroll: EUR 1 994 (+99%); Wiped-out: 1%
5) Martingale for binary options - Ending bankroll: EUR 1 826 (+83%); Wiped-out: 30%
6) Fibonacci for binary options - Ending bankroll: EUR 1 670 (+67%); Wiped-out: 2%

What can we learn?

A cursory glance tells us that the Kelly system is the hands-on winner, ranking #1 on ending bankroll both times and not suffering any wipeout. But if the race was a close call when testing the systems with Strategy A, there was no match to speak of when it came to Strategy B: the Kelly system zoomed past all others and ended with a bankroll only a fraction below the one it achieved with Strategy A, despite starting with 1/5 of the initial bankroll. We already knew that Strategy B was superior to Strategy A because its Expectancy is 0.037 and A's is only 0.02. Notice also that the wipe-outs decrease markedly for Strategy B. Is this all due to the slightly higher winning rate of Strategy B (61% vs. 60% of Strategy A)? Let's run a third batch of Monte Carlo Simulations using an even higher winning rate to find out.

STRATEGY C

Average return = 70%; Average win percentage = 62%; Expectancy = 0.054; Starting bankroll = EUR 100; Default starting bet = EUR 2.



		Martingale		Paroli		d'Alembert		Fibonacci		% of bankroll		Kelly	
Trade #	Win/Loss	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet	Bankroll	Bet
1	Win	100	2	100	2	100	2	100	2	103	2	100	6
2	Win	101	2	101	4	101	2	101	3	101	2	105	8
3	Loss	103	2	104	8	103	2	104	3	103	2	111	9
4	Loss	101	5	96	3	101	5	101	9	101	2	103	8
5	Win	96	12	94	2	96	8	98	3	99	2	95	7
6	Win	104	2	96	4	101	5	100	3	103	2	100	8
7	Loss	106	2	98	8	105	2	102	3	102	2	105	8
8	Win	104	5	90	2	103	5	99	3	103	2	97	7
9	Win	107	2	92	4	106	2	101	3	101	2	102	8
10	Win	108	2	95	8	108	2	103	3	102	2	108	8

Figure 85: The first 10 of 1 000 trades of one of the 10 000 simulations comparing the six Money Management Systems for a strategy with an average return of 70% and average win percentage of 62%.

The average maximum consecutive wins and losses was 13.3 and 6.6, respectively. Below are the six systems ranked by their average ending bankroll. Also shown is the percentage of simulations that ended with a zero bankroll (wipe-out).

1) Kelly - Ending bankroll: EUR 10 274 (+10,174%); Wiped-out: 0%
2) d'Alembert for binary options - Ending bankroll: EUR 393 (+293%); Wiped-out: 13%
3) Paroli - Ending bankroll: EUR 356 (+256%); Wiped-out: 6%
4) % of bankroll - Ending bankroll: EUR 329 (+229%); Wiped-out: 0%
5) Fibonacci for binary options - Ending bankroll: EUR 289 (+189%); Wiped-out: 4%
6) Martingale for binary options - Ending bankroll: EUR 282 (+182%); Wiped-out: 33%

The Kelly system has a staggering superiority when it comes to maximizing the bankroll and its advantage over other systems increases as the strategy Expectancy also increases. However, it does not provide a steady, stress-free journey to the top. The Kelly system has huge drawdowns and will test the nerves of the steeliest trader as you can see for yourself in the chart below:

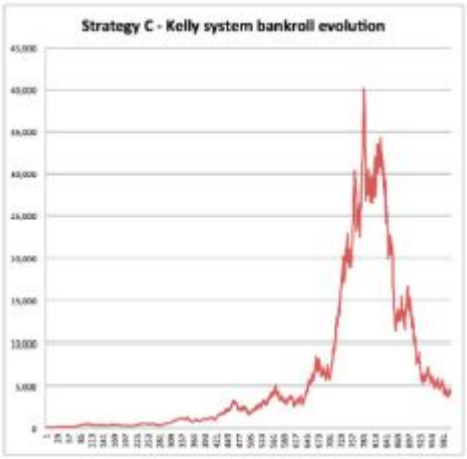


Figure 86: Example of the bankroll evolution of 1 000 trades on Strategy C using the Kelly system of money management. The bankroll rockets after trade #700 and then peaks at EUR 40 000 before initiating a dive to below EUR 5 000. It would have been a much smoother ride if half or a quarter of the Kelly % had been used.

39 - Trading Multiple Strategies

If you trade multiple strategies you can simply allocate a portion of your bankroll for each one of them. The obvious way to do that would be to distribute your funds according to the strategies expectancies, therefore allocating more money to the ones that will presumably return higher profits. I am talking about a virtual allocation here, there is no need to actually open a different account for each strategy that you trade although of course you can also do that. For example if you have a bankroll of EUR 3 000 and you trade four different strategies, with Expectancies of 0.2, 0.101, 0.05 and 0.035 respectively, you can simply distribute your bankroll proportionally to those expectancies:

Strategy 1: 0.2 / (0.2 + 0.101 + 0.05 + 0.035) = 52% or EUR 1 560

Strategy 2: 0.101 / (0.2 + 0.101 + 0.05 + 0.035) = 26% or EUR 780

Strategy 3: 0.05 / (0.2 + 0.101 + 0.05 + 0.035) = 13% or EUR 390

Strategy 4: 0.035 / (0.2 + 0.101 + 0.05 + 0.035) = 9% or EUR 270

40 - TAKE MONEY OUT

Whatever the system or variation of system you end up using consider taking money out of the table as soon as you double your initial stake. If you do that you will be “playing with the house money” and you won’t have much to regret later even if you proceed to lose it all. And why not take another chunk out whenever your profits pile up? Make that a rule and you cannot go wrong. Your bankroll will not grow as fast but it will be steadier and less prone to disaster losses. Remember, it is not yours to spend before you take it out of the table.

None of the previous simulations allowed for money being taken out but that is an easy feature to add. To illustrate here are the results of a Monte Carlo simulation for 10 000 runs of 1 000 trade batches with the following premises:

- Average return of a winning trade: 70%
- Average winning percentage of the trading system: 65%
- Money management system: Martingale for binary options
- Starting bankroll: EUR 1 500
- Starting bet: EUR 30
- Withdrawals are made when bankroll reaches: EUR 3 000
- Size of each withdrawal: EUR 1 500

So basically each time the bankroll doubles the initial amount staked is withdrawn and pocketed. The results of the Monte Carlo simulation were as follows:

- Average ending bankroll: EUR 336
- Average withdrawals: EUR 4 836

- Wiped-out: 42%

			Martingale	
Trade #	Win/Loss	Withdraw	Bankroll	Bet
1	Win		1 500	30
2	Loss	0	1 521	30
3	Loss	0	1 491	73
4	Win	0	1 418	177
5	Win	0	1 542	30
6	Win	0	1 563	30
7	Loss	0	1 584	30
8	Win	0	1 554	73
9	Loss	0	1 605	30
10	Win	0	1 575	73

Figure 87: The first 10 of 1 000 trades of one of the 10 000 simulations assuming that a EUR 1 500 withdrawal takes place whenever the bankroll doubles its initial amount.

Let's now look at the results of a similar simulation with the exact same premises but without ever taking money out:

- Average ending bankroll: EUR 7 434
- Average withdrawals: EUR 0
- Wiped-out: 23%

Summarizing, at the end of 1 000 trades when taking money out at every doubling of the initial bankroll you end up on average with EUR 5 172 (EUR 336 + EUR 4 836) most of which you get before the end of the trading run. You are wiped-out 42% of the times but you might already be showing up a nice profit when that happens. Let your money run and you end up on average with EUR 7 434. You are wiped-out only 23% of the times but those times really hurt because you lose everything you have put in. Which one is better? That is a matter of personal preference and you probably would like to dig in a little further and twist the premises and parameters of the simulation to better suit your trading style and risk profile before answering that question. Running a Monte Carlo Simulation in Excel is the section that explains how this can easily be done.

41 - MONEY MANAGEMENT WITH EXCEL

Setting up your chosen money management system with Excel is a very simple task. Below is an example:

Strategy name			MyFirstOne			
Average winning percentage			62,0%	Required return %		61,3%
Money Management System			Kelly			
Kelly factor (1=100%; 2=50%; 4 = 25%)			2			
Trade #	Date	Bankroll	Return	Kelly %	Bet	Result
1	4/11/2013	2 500,00 €	70,00%	3,9%	97,00 €	Win
2	4/11/2013	2 567,90 €	62,00%	0,4%	9,00 €	Win
3	4/11/2013	2 573,68 €	75,00%	5,7%	146,00 €	Loss
4	4/11/2013	2 427,68 €	68,00%	3,1%	74,00 €	Win
5	4/11/2013	2 477,80 €	70,00%	3,9%	96,00 €	Loss
6	4/11/2013	2 381,80 €	54,00%	-4,2%	0,00 €	No trade
7	4/11/2013	2 381,80 €	71,00%	4,2%	101,00 €	Win
8	4/11/2013	2 453,51 €	63,00%	0,8%	21,00 €	Loss
9	4/11/2013	2 432,51 €	78,00%	6,6%	162,00 €	Win
10	4/11/2013	2 558,87 €	70,00%	3,9%	99,00 €	Win

Figure 88: An Excel spreadsheet doing the calculations for the Kelly % money management system.

On the top of chart you have summary information about the strategy such as its name and its average winning percentage. From these parameters the spreadsheet automatically calculates the minimum required return %, which in this case is 61.3%. The chosen money management system is the Kelly % with a factor of 2, meaning only a “half-Kelly” is going to be used. For illustration purposes this example shows each trade with returns varying from 54% to 78%. So wide a variation is not to be expected in real trading; for the same type of binary option, you will seldom see a 5% difference between the highest and the lowest return offered.

The initial bankroll is EUR 2 500. The first bet pays a 70% return and the spreadsheet tells us that half the Kelly % is 3.9% or EUR 97. The Result column indicates this first trade was successful. The bankroll increases by EUR 67.90 (EUR 97 x 70%). The next bet gives a return of only 62% and the Kelly systems immediately reduces the amount to trade to EUR 9. Notice that on trade #6 the

Kelly % is a negative number indicating that no bet should be made. This is consistent with the required return percentage of 61.3%. Below that level you should not trade.

Strategy name		MyFirstOne			
Average winning percentage		62,0%	Required return %		61,3%
Money Management System		Martingale			
Initial amount to trade		50,00 €			
Trade #	Date	Bankroll	Return	Bet	Result
1	4/11/2013	2 500,00 €	70,00%	50,00 €	Win
2	4/11/2013	2 535,00 €	62,00%	50,00 €	Win
3	4/11/2013	2 566,00 €	75,00%	50,00 €	Loss
4	4/11/2013	2 516,00 €	68,00%	123,53 €	Win
5	4/11/2013	2 600,00 €	70,00%	50,00 €	Loss
6	4/11/2013	2 550,00 €	54,00%	142,59 €	Loss
7	4/11/2013	2 407,41 €	71,00%	250,83 €	Win
8	4/11/2013	2 585,50 €	63,00%	50,00 €	Loss
9	4/11/2013	2 535,50 €	78,00%	114,10 €	Win
10	4/11/2013	2 624,50 €	70,00%	50,00 €	Win

Figure 89: An Excel spreadsheet doing the calculations for the Martingale money management system.

This other example shows the Martingale money management system in action. The standard trade amount is EUR 50. The trade amount is increased whenever a loss is incurred by adding to the standard bet the previous loss divided by the new trade return. For trade #7: EUR 50 + EUR 142.59 / 71% = EUR 250.83.

To get these and other spreadsheets read the section Free Resources.

PUTTING IT ALL TOGETHER

42 - The Game Plan

I guess I should warn you, if I turn out to be particularly clear, you've probably misunderstood what I've said.
~ Alan Greenspan

Now you have a game plan! Never underestimate the importance of having one. If you follow it you will know what to trade, how much to trade and you will make decisions in a rational manner. Although this does not guarantee that you'll become a millionaire it should dramatically improve your trading performance. Also, most of what you know is also knowledge that you can apply to other markets and trading arenas such as the Forex and the stock markets.

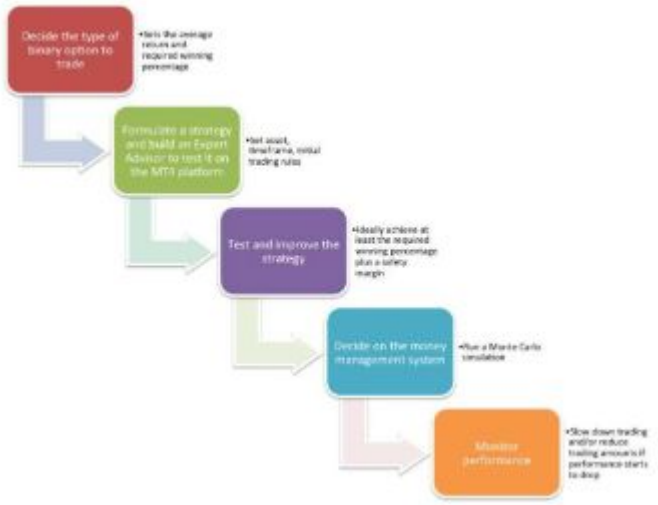


Figure 90: An overview of the game plan.

43 - FINAL SUGGESTIONS

I advised you repeatedly to test your strategies before trading them. More than good advice that is common sense and I stand by it. That does not mean however, that I recommend you trade in a *paper* or *demo* account. Once you have tested and are confident of your strategy's performance do some real trading! Do not jump in with both feet but allocate a portion of your capital until you feel confident that you have mastered the skills you need. Trade with real money because only in that way will you feel the pressure and stress that comes with sticking with your plan while facing a string of losses.

Record all your trades and monitor your strategies performance like a hawk. The money management spreadsheets can be easily adapted to show a strategy's running performance as the spreadsheet snapshot that follows shows:

Strategy name		MyFirstOne				
Average winning percentage		62,0%	*Required return %*			61,3%
Money Management System		Martingale				
Initial amount to trade		50,00 €				
Trade #	Date	Bankroll	Return	Bet	Result	Acc % Win
1	4/11/2013	2 500,00 €	70,00%	50,00 €	Win	100,0%
2	4/11/2013	2 535,00 €	62,00%	50,00 €	Win	100,0%
3	4/11/2013	2 566,00 €	75,00%	50,00 €	Loss	66,7%
4	4/11/2013	2 516,00 €	68,00%	123,53 €	Win	75,0%
5	4/11/2013	2 600,00 €	70,00%	50,00 €	Loss	60,0%
6	4/11/2013	2 550,00 €	54,00%	142,59 €	Loss	50,0%
7	4/11/2013	2 407,41 €	71,00%	250,83 €	Win	57,1%
8	4/11/2013	2 585,50 €	63,00%	50,00 €	Loss	50,0%
9	4/11/2013	2 535,50 €	78,00%	114,10 €	Win	55,6%
10	4/11/2013	2 624,50 €	70,00%	50,00 €	Win	60,0%

Figure 91: The running performance of the strategy is shown in the Acc % Win column. Conditional formatting shows the figures in red when the accumulated performance falls below 61.3%, the minimum required return.

You have to let the strategy run for a while before jumping to conclusions. After the first six trades the performance is only 50%. Should you be worried? Not after only six trades. Not if you have

tested the strategy as per the plan. You should be watching, not worrying! Remember, you can run a Monte Carlo Simulation to estimate what is the likelihood that a strategy with an average winning percentage of 62.0% has a running performance of 50% (or below 61.3%) after 6 (or N) trades. Use what you know!

Be aware of special situations that can impact the normal course of trading. You should probably avoid opening trades on days with significantly lower volume of trading such as bank holidays, extended weekends and around Christmas and New Year to name the most significant. Also watch out for days when major economic news is announced. Your broker will probably keep you aware of those dates and you can also check the free Economic Calendar at myfxbook.

Finally, remember to get your Free Resources. With that I end by wishing you many profitable and fun days of trading!

APPENDIXES

44 - DISCLAIMER

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45 - Running a Monte Carlo Simulation in Excel

> *The gap between theory and practice is not as wide in theory as it is in practice.*
> ~ Author Unknown

You do not need to be an Excel expert or have any special statistical knowledge to run a Monte Carlo Simulation. Let's build up a simple example from scratch to see how it is done.

Suppose you want to simulate a coin toss. There are two outcomes, Heads or Tails, each with a 50% chance. Start by entering the text "Toss #" in cell A1 and then enter the numbers 1 to 10 in cells A2 to A11. Next enter the text "Result" in cell B1. In each one of the cells from B2 to B11 enter the formula "=RANDBETWEEN(1;2)". Now whenever your spreadsheet is recalculated Excel will randomly and with a probability of 50% enter in each of the cells B2 to B11 either the number "1", which we will take to represent Heads, or the number "2" which we will take to represent Tails. In cell A13 enter the text "Heads =". In cell B13 enter the formula "=COUNTIF(B2:B11;"=1")". This will count the times the number "1" (Heads) came out in the 10 tosses. In cell A14 enter the text "Tails =". In cell B14 enter the formula "=COUNTIF(B2:B11;"=2")". This will count the times the number "2" (Tails) came out in the 10 tosses. You should now have something like this:

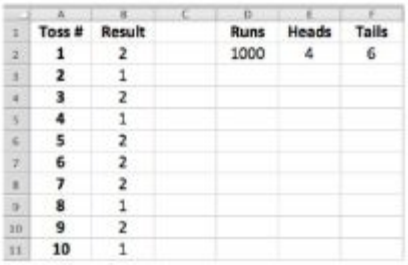
Toss #	Result
1	1
2	2
3	1
4	1
5	1
6	2
7	2
8	1
9	1
10	2
Heads =	6
Tails =	4

Figure 92: Using the Excel function RANDBETWEEN to simulate ten coin tosses, heads represented by the number “1” came out 6 times, tails represented by the number “2” came out 4 times.

What we have speedily constructed is a simple model simulating ten coin tosses where Heads and Tails come out with a 50% chance. When we repeat this simulation a large number of times we have what is called a Monte Carlo simulation. Notice that if you press F9 the spreadsheet will be recalculated and a new count of Heads and Tails will be displayed. So we could just go on and press F9 1 000 times and write down the count of Heads and Tails for each one of those times and then take the average and we would have our Monte Carlo simulation. I am sure that by now you are warming up to that prospect and have already started to flex your F9 pressing finger in anticipation. I am therefore almost sorry to have to let you know that there is a much easier way to do that chore. You just have to download a free Excel spreadsheet called MonteCarlito, then open the MonteCarlito spreadsheet and allow macros to run when prompted. The spreadsheet comes with easy to follow instructions that you should read and I will now illustrate how to use MonteCarlito to capture 1 000 simulations of our 10 coin tosses.

Start by entering the texts “Runs”, “Heads” and “Tails” in cells D1, E1 and F1 respectively. Now enter the number 1 000 in cell D2. This is the number of simulations that we will perform. The larger the number the more time it takes to perform the calculation. To be

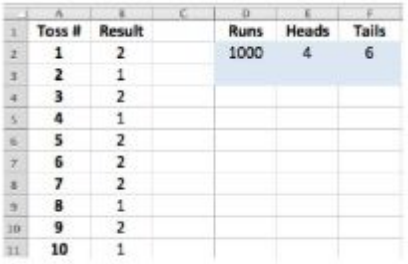
meaningful at least 100 iterations should be done. In cell E1 enter the formula “=COUNTIF(B2:B11;“=1”)” which as seen before captures the number of times Heads show up. In cell F1 enter the formula “=COUNTIF(B2:B11;“=2”)” to sum the number of times Tails show up.



	A	B	C	D	E	F
1	Toss #	Result		Runs	Heads	Tails
2	1	2		1000	4	6
3	2	1				
4	3	2				
5	4	1				
6	5	2				
7	6	2				
8	7	2				
9	8	1				
10	9	2				
11	10	1				

Figure 93: Preparing to run a Monte Carlo simulation of the coin tossing model with 1 000 iterations. The MonteCarlito spreadsheet must be opened and macros enabled.

Select the range that has on the upper left corner the number of simulations to run (in this case D2) and whose lower right corner is one row below the last formula you are interested in (F2 in this example).

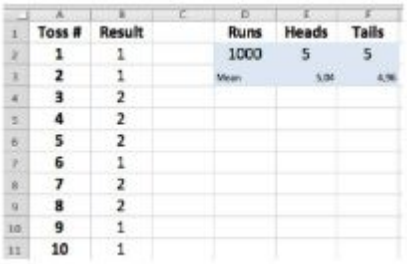


	A	B	C	D	E	F
1	Toss #	Result		Runs	Heads	Tails
2	1	2		1000	4	6
3	2	1				
4	3	2				
5	4	1				
6	5	2				
7	6	2				
8	7	2				
9	8	1				
10	9	2				
11	10	1				

Figure 94: The empty blue cells will capture the results of the Monte Carlo simulation.

To start the Monte Carlo simulation now press Ctrl + W. Depending on the number of iterations and your computer

performance it make take from some seconds to some minutes for the results to show up.



	A	B	C	D	E	F
1	Toss #	Result		Runs	Heads	Tails
2	1	1		1000	5	5
3	2	1		Mean	5,04	4,96
4	3	2				
5	4	2				
6	5	2				
7	6	1				
8	7	2				
9	8	2				
10	9	1				
11	10	1				

Figure 95: After Excel finishes its calculations the average counts of Heads and Tails of the 1 000 simulation runs is displayed.

Heads showed up 50.4% of the times and Tails 49.6% of the times which is pretty much in line with the theoretical 50% chance for each occurrence. Remember that in our first run Heads showed up in only 40% of the tosses: by running a large number of iterations we are able to better understand what is more likely to happen in the long run. This is all there is to it, you now know how to run a Monte Carlo simulation

46 - SUGGESTED READINGS

Outside of a dog, a book is a man's best friend. Inside of a dog it's too dark to read.
~ Groucho Marx

Listed in alphabetical order here are some reading suggestions for your knowledge seeking days or insomniac nights:

- Beat the Dealer by Edward O. Thorp
- Bringing Down the House: The Inside Story of Six M.I.T. Students Who Took Vegas for Millions by Ben Mezrich
- Busting Vegas by Ben Mezrich
- Enemy Number One: The Secrets of the UK's Most Feared Professional Punter by Patrick Veitch
- Live on the Margin by Patrick Shulte
- Market Wizards: Interviews with Top Traders by Jack D. Schwager
- Reminiscences of a Stock Operator by Edwin Lefevre
- Trade Your Way to Financial Freedom by Van Tarp
- Trader Vic. Methods of a Wall Street Master by Victor Sperandeo.
- Trading for a Living: Psychology, Trading Tactics, Money Management by Alexander Elder
- Trading Rules that Work: The 28 Essential Lessons Every Trader Must Master by Jason Alan Jankovsky
- Trend Following (Updated Edition): Learn to Make Millions in Up or Down Markets by Michael W. Covel
- Wall Street and Witchcraft: An investigation into extreme and unusual investment techniques by Max Gunther
- What I Learned Losing a Million Dollars by Jim Paul

47 - LINKS

Every man lives by exchanging.
~ Adam Smith

Companies, products and services mentioned in this book:

Binary Options Brokers

- Binary.com (formerly BetOnMarkets)
- Banc de Binary
- 24option.com

Secure online money transfer

- Skrill (formerly Moneybookers)

Sites where strategies are discussed and shared

- Strategy4Forex
- ForexStrategiesResources
- TradersLog
- EarnForex
- FxFisherman
- DailyFx
- BabyPips
- Forex-Strategies-Revealed
- ForexStrategyTraining
- Mayzus
- MQL4 / Automated trading Community

Magazines

- Traders
- Currency Trader
- Today's Trader
- Active Trader

Books

- Amazon Kindle shop

Spreadsheets software

- Excel
- Montecarlito

Trading Platform (used as research assistant and signal provider)

- AVATRADE
- MetaTrader 4 site

Stocks and Indexes historical price data downloader software

- MLDownloader (Windows)
- StockXloader (Mac)

Forex historical price data downloader software

- Tick Data Downloader software

Forex historical price database

- Forex History Database

Expert Advisors

- EA Wizard (to create Expert Advisors)
- EA Analyzer (to analyze EA's trading performance)

Economic events calendar

- Economic Calendar at myfxbook

48 - FREE RESOURCES

The best things in life are free (plus shipping and handling).
~ Author Unknown

To get the free resources available to buyers of *Trading Binary Options for Fun and Profit: a Guide for Speculators* simply send me an email with a copy of your receipt to TBOFFAP@morbat.com. Here is what you will receive:

I - An Excel workbook with six spreadsheets containing templates for the Martingale, Paroli, D'Alembert, Fibonacci, Percentage of Bankroll and Kelly money management systems. You can use or adapt them for your own trading needs.

II - The rationale for a number of trading strategies that backtested with winning percentages above 60% and that could eventually be considered for adaptation to binary option trading purposes.

- EURUSD - one strategy for each of one of the following timeframes: M1, M5, M15, M30, H1, H4, D1. Developed with data for the period 01.02.2013 to 31.05.2013, tested with out of sample data for the period 31.05.2013 to 31.07.2013.
- USDJPY - one strategy for each of one of the following timeframes: M1, M5, M15, M30, H1, H4, D1. Developed with data for the period 01.11.2012 to 06.02.2013, tested with out of sample data for the period 06.02.2013 to 29.03.2013.

Caution: these strategies are supplied for your further study only. There is no guarantee that these strategies performance will be similar to the one obtained in the backtests. If you decide to trade them you do so at your own risk. In any case always do your own testing before using any strategies in real trading.

III - The Expert Advisor "Alerter" which pops-out an alert window and plays a sound on MetaTrader each time a new trade is opened (see Expert Advisors).

49 - MEET THE AUTHOR

My problem lies in reconciling my gross habits with my net income.
~ Errol Flynn

José Manuel Moreira Batista is a private trader and investor and manages private concerns. He started trading circa 2 BC and was ~~lucky~~ savvy enough to sell all his positions before that fateful Monday in October 1987. He has held executive positions in several corporations – some still standing – and taught courses in Finance, Accounting and Real Estate. Of all places he lives in Cascais – Portugal, the Land of the Rising Tax. He can sometimes be reached at morbat.com.