



INTERACTIVE

**TRADING
BOOK**

ALL YOU NEED TO KNOW
TO START TRADING



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THE FOREX MARKET

STRUCTURE SPECIFICS

The Forex market is the largest financial market in the world. This is where the exchange between different currencies is conducted. More than 5 trillion US dollars are transacted through the FX market each day. Currencies are exchanged for all kinds of reasons – from an online purchase of goods from another country, to speculating on the price for profit. Speculation is what makes up the larger part of the daily forex volume.

The forex market is a modern creation. Although currencies have been exchanged for centuries, the concepts of the forex market were laid with the Bretton Woods agreement in 1944. Then 44 countries pegged their currencies to the US dollar and the gold. The accords established two institutions that are still operational today – the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD), which today is part of the World Bank Group.

In the period 1971-1973 the Bretton Woods system was ended, and the gold peg was abandoned. Many currencies became free-floating, which meant that supply and demand for the currencies were what defined their value.

The first step towards the digitalization of the forex market was the development of the electronic dealing platforms. In the beginning they were available to banks only, so investors were restricted to accessing the forex market via their bank provider. The rapid development of computer and communication technologies, however, gave rise to a decentralized over the counter (OTC) market, available to everyone, while requiring a little more than a good internet connection.

Today, a growing share of trades is carried out by independent investors who participate in the market, alongside the big players, to make use of this fast-evolving environment. The FX market is the ultimate place to speculate. Unlike other markets, like the stock market, you don't have to buy / own an asset in order to sell it. The forex gives the freedom to trade in both directions, and only the sky (and the funds in your trading account) is the limit.



The forex market is the most liquid financial market in the world. Liquidity is measured by the volume available for trading at any given moment. The more liquid the market is, the easier and better the trading conditions are. In more liquid markets volatility is lower, which means that prices are less likely to make sudden moves in some direction. This is because the sheer volume and the depth of the market (the outstanding buy and sell orders) reduce the influence of large orders on the prices.

There is no physical location for the forex market. It is comprised of a global network of computers, brokers and liquidity providers. There is no central authority to control the market participants, but there are regulations that govern the processes.


All this has led to the development of a competitive, ever-evolving market that provides easy access, comfortable trading platforms, plenty of products, fast order execution, reasonable costs and commissions.

TRADING HOURS

Trading is possible 24 hours during the weekdays. This is an advantage over centralized exchanges that have working time and close for a certain period of time.

- It is important to know the main trading sessions and the largest financial centers.
- Asian – main financial centers in this area are Sydney (working hours 11 p.m. to 7 a.m. GMT) and Tokyo (0 a.m. to 8 a.m. GMT);
 - European – main financial centers are Frankfurt and Zurich (both operating from 7 a.m. to 3 p.m. GMT) and London (8 a.m. to 4 p.m. GMT);
 - American – main financial center is New York (1 p.m. to 9 p.m. GMT).

Forex market sessions																									
GMT																									
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4		
			London																						
		Frankfurt, Zurich																							
								New York																	
																		Sydney							
																		Tokyo							



Fixings are another thing that you should keep in mind, besides the opening and closing hours of the major financial centers. They are primarily used by banks for expiration of options and forwards. The most important of those are:

- Tokyo fix – 0:55 GMT. It changes depending on daylight saving time, so it's either 0:55 a.m. or 1:55 a.m. GMT. Japanese companies have major import and export activity, so large flows of orders in Japanese yen pairs are generated around the Tokyo fix.
- Tokyo cut – 7 a.m. GMT. It is used for expiration of options and forwards by Japanese and other companies, though trading is not as active as it is around the Tokyo fix.
- ECB fix – 1:15 p.m. GMT. The main flows of orders are in euro.
- New York cut – 10 a.m. New York time, which is 3 p.m. London time (when switching to daylight saving time for a few weeks it is at 2 p.m.). Most forex options expire at the New York cut.
- London fix – 4 p.m. GMT. It is connected to the largest financial center, that is why it is actively used by market participants. Very large cash flows are generated around the end of each month during the London Fix and sometimes volatility is very high.

Different people are active throughout the working hours of the different financial centers. This could mean difference in the traded volume, as there are centers, significantly larger in size that, when active, provide more liquidity to the market. The overlapping of the trading sessions may also lead to an increase in liquidity.

Traded pairs are also dependent on the working hours of their native financial centers. While there are major currency pairs like the EUR/USD which are actively traded regardless of the active sessions, less liquid currencies tend to be most active during the working hours of the geographically closest financial center.

MARKET PARTICIPANTS

Knowing the market participants is also essential. Every one of them is on the market for a reason – some are there for speculative purpose, others for non-speculative (commercial) one. The latter use the forex market to exchange currencies, e.g. for the needs of import/export trades. They make up about 20% of the transactions in the market. The speculative participants trade for the sole purpose of making profits. Size also matters, and in that sense market participants can be classified into five groups.



CENTRAL BANKS AND GOVERNMENTS

They are the largest market players. Central banks are responsible for the monetary policy and they manage it through money supply, interest rate, quantitative easing/tightening, in accordance with their Government's ideology. Central banks do so by interventions in the forex market, sometimes with huge amounts.

For example, during periods of deflation, a central bank may decrease the value of its own currency by creating additional supply, which is then used for purchasing foreign currency. This effectively weakens the domestic currency, thus making exports more competitive in the global market.

The big purpose is to keep the native currency and the economy stable. Although there are central banks that have some liberty in their day-to-day activities, as a rule, they do not trade in the market to make profit, so they are non-speculative participants.


COMMERCIAL BANKS AND OTHER FINANCIAL INSTITUTIONS

Commercial banks are another big player in the FX market. A large percentage of the total currency trading is carried out by the commercial banks. They trade between each other through electronic networks in what is called the Interbank market. This is the top tier of the FX market available only to large banks. Transaction volumes are huge and can dictate the exchange rates.

Banks can act as dealers, facilitating currency transactions for their clients. In this case they profit from the bid-ask spread that they offer. But banks can also act as traders. They have proprietary dealing desks that trade for profit (they speculate). Some banks (e.g. investment banks) offer advisory and research services, by releasing research notes and articles with valuable information.

INVESTMENT AND HEDGE FUNDS

Pooled funds, portfolio managers and hedge funds are the other big team on the market. Investment funds typically manage large accounts on behalf of customers like pension funds and endowments, so they control massive amounts of money. They



usually have international equity portfolios and need to buy and sell foreign currencies on the spot market in order to pay for those foreign equities. Profiting from these transactions is not the funds main goal.

Of course, funds do take speculative positions in the market, especially hedge funds. They do so for the purpose of profit making or as part of their investment strategy.

COMPANIES AND CORPORATIONS

The companies and corporations that import or export goods and services are the other FX market participant that does not normally trade for profit (after Central banks). They make exchange transactions because they wire and receive payments in foreign currencies. The negative effects of a delayed delivery or unpaid wages, from their perspective, can be much larger than a few pips difference in the exchange rate.

Large corporations involve in forex trading also to hedge the risk associated with foreign currency transactions. If they are too exposed to a certain currency exchange rate, or as part of their financial policy, they could enter into a currency forward contract to lock in the exchange rates over a longer period of time. This adds security and predictability to the foreign currency cash flows.

INDIVIDUAL TRADERS

Individual traders are the smallest group on the FX market, in terms of market volume share. However, it is growing rapidly in recent years. With the development of technology and the margin trading, and thanks to the increased competition among brokers, the forex market is now open to all, and everyone can enjoy trading conditions that were unthinkable just a dozen years back.

Individual traders are in the market for the sole purpose of speculating on the price of currencies. Proper training is a must in this competitive environment. The advance of computer technologies regarding FX trading gives an edge that every trader should use. Machine learning and artificial intelligence algorithms give a much-needed advantage to individual traders against the big players.



After all, it's not always the biggest guy that takes the prize, it's the smartest.

TYPES OF TRANSACTIONS

Every transaction in the markets is a two-way deal consisting of a purchase of one currency (or asset) and a sale of another currency (or asset), at a given date. There are multiple variations for the parameters of the deal that give a wide range of opportunities for the trader. Knowing those characteristics is an important part of understanding the financial markets.

These are the most popular types of transactions:

SPOT

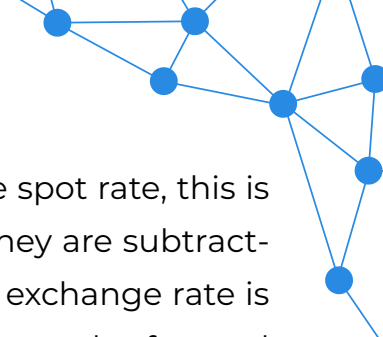
A spot transaction is the fastest way to exchange a currency. Because of its simplicity, no contract is signed for this transaction. The delivery (or settlement) date is within two business days. The spot price is the current market rate of the currency.

In an OTC market, buyers and sellers shape the spot price by posting their buy and sell orders. For liquid markets, such as the forex market, the spot price can change by the second, as orders get filled and new ones enter the market constantly.

The spot market is also known as “Physical market” or “Cash market” because of the immediate swap of the traded assets. The quote (or price) of the asset that is displayed on every trading platform is the spot price. The spot is the most widely used transaction by individual traders.

FORWARD

The forward is a binding OTC contract for exchanging one currency against another at a specific future date. The exchange rate is called forward exchange rate and is comprised of two components. The first is the spot price of the currency pair and the second is the so-called forward (or swap) points. They are determined by the interest rates of the two currencies and can be of positive or negative value. Typically, a higher yielding currency has negative points, while a lower yielding currency has positive points.



When the forward points have a positive value and are added to the spot rate, this is called a forward premium. When the forward points are negative, they are subtracted from the spot price and this is a forward discount. If the forward exchange rate is exactly equivalent to the spot rate, at the time of making the contract, the forward exchange rate is at par.

On the delivery date the forward is settled, and the contracted amounts are exchanged at the forward rate, no matter what the current spot price is. This makes the forward transaction very suitable for hedging and is actively used for this purpose by international companies, large corporations and banks.

FUTURES

Futures and forwards are similar in a way, as they both have a contracted future delivery date, amount and rate. The big difference is that, while forwards are customizable in terms of volume and date, futures contracts have fixed parameters and are traded on organized exchanges only.

A margin, set by the exchange, is required, for opening and maintaining the futures position. The clearing house of the exchange guarantees the transactions, so the probability for default is very close to zero.

Futures contracts are structured on commodities, currencies and exchange indices. The most popular commodities for futures contracts are crops (like wheat and corn), oil and gas.

The futures contracts are frequently used by speculators, who usually close out the contract prior to maturity. Thus, real delivery does not happen, and a cash settlement is said to have taken place.

Futures are marked-to-market daily, which gives speculators the option to settle the future at any date before the delivery date. The futures market is very liquid so entering and exiting is easy.



OPTIONS

The option is a contract that gives its holder the right (the option), but not the obligation, to buy or sell a defined quantity of the underlying asset (like a currency) at specified future date and price (called exercise or strike price). An option that gives the right to buy the currency is called a call option, and the option that gives the right to sell the currency is called a put option.

The act of buying or selling the underlying asset is called exercising the option. The buyer pays a price for the option, called premium. The premium is the price for the option contract and is different from the exercise/strike price, which is the price of the underlying asset.

The option premium is the maximum risk of the buyer, and the maximum profit for the seller of the option. The profit potential for the buyer and the risk potential of the seller of the option are unlimited.

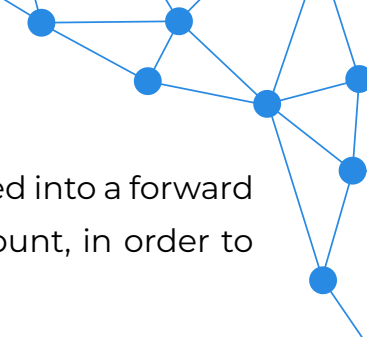
Option contracts are complex financial derivatives. There are many components that play a role in calculating the risk – market volatility, interest rate differentials, time to expiration, current price of the currency pair, etc.

SWAP

The swap is a two-part forex transaction used to shift (to swap) the value date of an existing position to another date. The two parts of the swap are called “legs” and are opposite to each other. The first leg (let’s say buy EUR/USD) is usually the part with the closer value date and the second leg (the opposite – sell EUR/USD) is usually the part with the new (further) date.

The price of the currency pair is calculated much like that of the forward, so it’s dependent on the net interest difference of the two currencies. This difference is also known as “carry”. On the two delivery dates, each leg is settled at the pre-defined price, regardless of the current spot rate.

Swaps are mainly used to roll an open forex position forward or backward in time. For



example, a company that hedges its sales or purchases and has entered into a forward contract that expires at a certain date, might need to swap the amount, in order to adjust the delivery date to the hedged cash flow.

CONTRACTS FOR DIFFERENCE (CFD)

CFDs offer traders the opportunity to profit from price movements without actually owning the underlying asset. This is a popular form of derivative trading, that allows traders to speculate on the change in the prices of fast-moving financial instruments, like indices, commodities, shares, currency pairs, treasuries, etc. This type of transaction is not available to US investors.

The contract for difference is an agreement between the investor and the CFD broker to exchange the difference in the value of an asset, between the time the contract is opened and the time the contract is closed. Although the contract reflects the price of the underlying asset, the CFD investor never actually owns the asset.


CFDs allow investors to easily take a position in both directions. If traders expect the price to rise, they can open a long position (buy). If they expect the price to fall, they can open a short position (sell). The open position can be closed at any time by an offsetting trade. The net difference between the purchase price and the sale price is credited to/debited from the investor's account.

This type of derivatives provides high leverage, which means traders need to deposit only a small percentage of the full value of the contract in order to open the position. The deposit is also known as a margin.

Brokers profit from the spread – traders pay the ask price when buying and take the bid price when selling. So, for a position to be profitable, it needs to cover the spread first. This fact is compensated by the access to the underlying asset at a lower price (compared to buying the asset outright).

TYPES OF ORDERS

When trading in the forex market one should have good knowledge of the different



types of orders and how and when to use them. The order reflects the trader's intentions for entering and exiting the trade, so their precision can mean the difference between a profit and a loss.

Multiple actions can be included in the same order, for example a level for entry and rules for exit. There are many types of orders, offered by the different forex brokers, but these basic types can be considered most common.

MARKET ORDERS

Market orders are the simplest order type. It means buying or selling the currency pair at the current ask or bid price (respectively). They are executed immediately, at the best available price.

Depending on the market liquidity and volatility, these orders can be subject to slippage. This means that the execution price might be different (better or worse) than the market price at the moment of the order placement.

BUY ORDER

The Buy order is an order to immediately buy the currency pair, at the best available price. This order opens a long position and because it is a market order, it can be executed with slippage.

SELL ORDER

The Sell order is an order to immediately sell the currency pair at the best available price. It can be used for opening a short position and because it is a market order, it can incur slippage.

PENDING ORDERS

Pending orders are the most commonly used order type. They are not directly executed, like market orders, but rather give instructions for opening an order at a price level, defined by the trader.

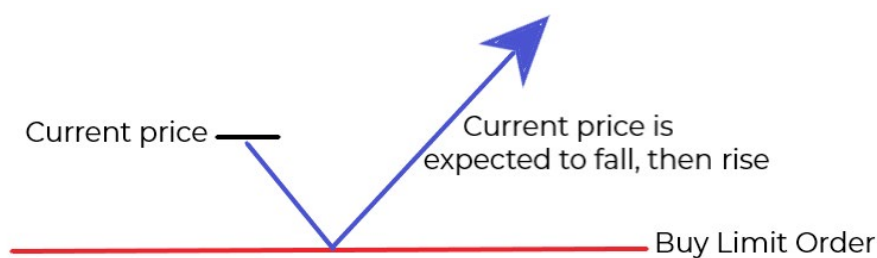
If the price does not reach the pre-defined level of the pending order, it will not be executed.

Most trading platforms make it very simple and intuitive to enter a pending order. There are four main types available on all platforms.

BUY LIMIT ORDER

The Buy Limit is used to buy a currency pair at a level below the current price. It is an opportunity to open a long position at a better price compared to the present.

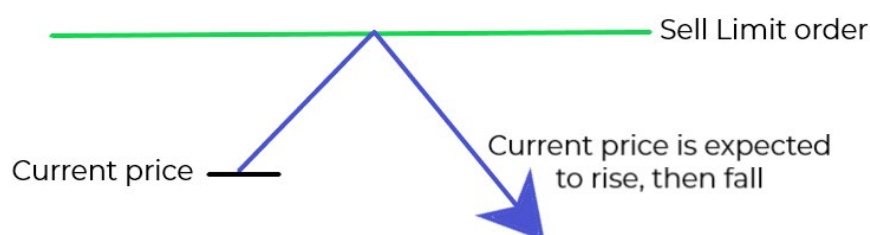
A Buy limit order is placed below the current market price when you expect it to fall to the limit order level and then to start rising.



SELL LIMIT ORDER

The Sell Limit is used to sell a currency pair at a level above the current price. It is an opportunity to open a short position at a better price compared to the present.

A Sell limit order is used when you expect the current market price to rise to the limit order level and then to start falling.

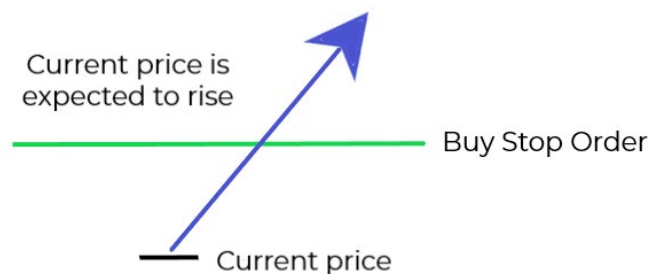


BUY STOP ORDER

The Buy Stop is a pending order to buy a currency pair (open a long position) at a level, which is above the current price. This order gives instructions to open a position at a price worse than the present, so it is used when the trader expects the price to continue up.

A typical situation to use the Buy Stop is at a breakout of a resistance level, when it is expected that the upward price move will continue.

Once the Buy Stop is reached by the market price it is executed as a market order, at the best available price.



SELL STOP ORDER

The Sell Stop is a pending order used to sell a currency pair (open a short position) at a level, which is below the current price. A Sell Stop order gives instructions to open a short position at a price worse than the currently available.

A typical situation to use the Sell Stop is at a breakout of a support level, when it is expected that the downward movement will continue.

Once the Sell Stop is reached by the market price it is executed as a market order, at the best available price.





TAKE-PROFIT AND STOP-LOSS ORDERS

There are variations of the market orders, that serve for managing the position. These are the Stop-Loss (S/L) and the Take-Profit (T/P). Their main purpose is to limit the losses and protect the profits of an open position.

TAKE-PROFIT ORDER

The Take-Profit order is a variation of the Buy/Sell Limit order, that closes out an open position for a profit. It marks the profit size that the trader expects from that open position.

If the market price rises (in a long position) to the take-profit point, the Take Profit (T/P) order is executed and the position is closed for a profit. If you have an open short position and it is developing well (meaning the price is falling), the T/P order will close the position for a profit, once the take-profit level is reached.

STOP-LOSS ORDER

With a long position, the Stop-Loss defends the buy order, should the price turn the wrong way (down) and reach the level of the S/L order.

If the stop-loss price is reached, the order is triggered and executed at the best available price, thus closing the long position and limiting the losses. Because of its market nature, the execution price is not guaranteed and may incur slippage.

With a short position the Stop-Loss serves to protect the open sell order. If the market price turns the wrong way (up) and touches the stop-loss price, the S/L is triggered and executed at the best available price, thus ending the short position. Because it's a market order, the execution price is not guaranteed and may incur slippage.

The Take-profit and the Stop-Loss orders should be used together, so that the open position is optimally managed. The difference between the market price and these two points helps define the risk-reward ratio of the trade.

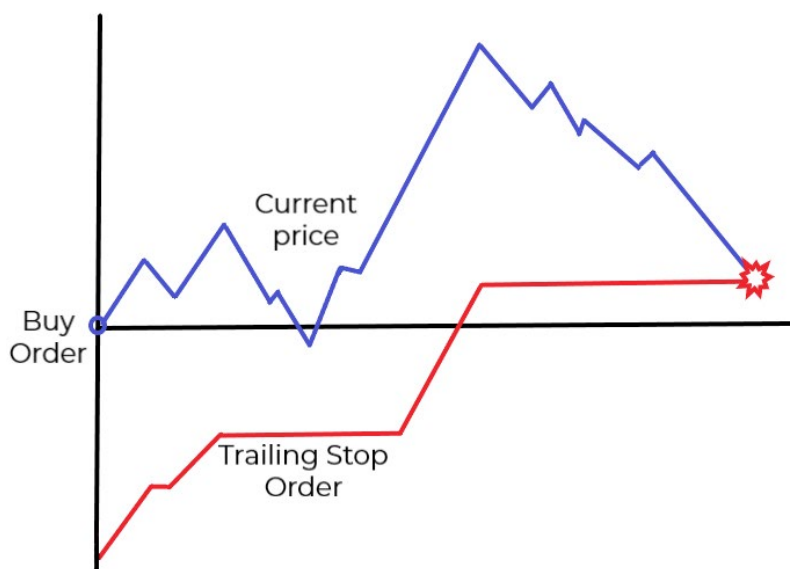
TRAILING STOP ORDER

The Trailing Stop order is similar to the stop-loss order but is more flexible. The stop price of this order is not fixed, instead it moves in relation to the market price. It is set to a fixed percentage or a fixed amount from the market price and as long as the market price moves in the desired direction, the trailing stop order follows (or trails) behind.

If the market price pulls back in the opposite direction, the trailing order stops in place. If the price continues its path and hits the stop, it is executed as a market order.

The trailing stop order is placed above the market price to protect a short position and below it when it protects a long position.

It is essential to correctly determine how far away from the market price to set the trailing stop. Putting it too close to the price means any minor correction would trigger the stop and end the position prematurely. Too far away on the other hand means it may never serve its protective purpose.



LEVERAGE AND MARGIN

Leverage is the use of borrowed money in the forex market in order to open larger positions. This is called leverage trading or margin trading. Margin is the amount the



trader deposits to the broker for the opening of the leveraged position.

The forex market offers the highest leverages, compared to other financial markets. In fact, many choose to participate in this market for this precise reason. These high levels are possible for several reasons.

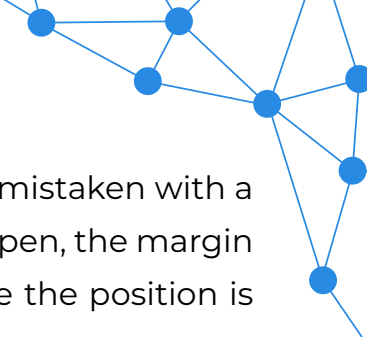
The forex market is the most liquid market in the world and the normal intraday volatility for the main currency pairs is relatively low (about 1%). This means two things. One, to make high enough profit, traders need large positions. And two, from the broker's perspective, it's relatively safe to give this "loan", as long as the margin is there, to cover the losses, if any.

Another favorable reason is that, again thanks to liquidity, it's easy to enter and exit a trade at the desired level, in comparison with other less liquid markets. So, a properly managed leveraged trade has more than good risk parameters.

Leverage is widely used by traders. It increases the buying power of the trader, at the same time using only a part of his equity. Different brokers provide different leverages and new trading accounts can sometimes be allowed smaller leverage, adding a layer of security for both trader and broker. Because although dealing with leverage is an excellent opportunity, it must be used properly and with a very good degree of understanding.

The leverage ratio provided by brokers in the forex market is normally up to 30:1 for European and 50:1 for US brokers. A 10:1 leverage ratio means that for every \$1 (or any other currency) in the trader's account, he can open a position worth \$10. So, if that trader decides to risk \$5 (that would be the margin), he opens a position for \$50 on the market. In other words, with his \$5 the trader opens a position 10 times larger. In still other words, the \$50 position that the trader opens, has a 10% margin (his \$5).

Leverage Ratio	Margin requirement
10:1	10 %
50:1	2 %
100:1	1 %
200:1	0.5 %



The margin is deposited with the broker as collateral. Margin is often mistaken with a fee or a cost of the transaction, but it is not. While the position is still open, the margin is blocked by the broker and the trader cannot use it. However, once the position is closed, the margin is released and is available to the trader.

It may sometimes be confusing to calculate all the elements for the leveraged trade. Thankfully, technology has advanced enough to eliminate the need for the sheet of paper and the pencil. The smart way today is to use leverage and margin calculators that do the math for you, this way facilitating trading and giving you the opportunity to change an element and have the others recalculated in a matter of seconds.

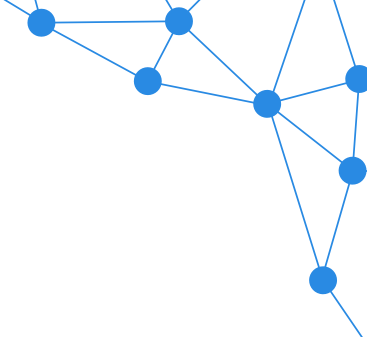
It is possible to leave a leveraged position opened overnight. For the purpose FX swaps are used. Unlike regular loans where you always pay interest, the swap can sometimes be favorable for the trader, adding to the profit of the position.

Although margin trading provides opportunities for significant profits, leverage can also work against traders. If the price of the currency pair moves in the opposite direction, leverage can amplify the potential loss. To minimize the chance of something like this happening, proper management should be applied, including the placement of a stop-loss and a take-profit order. Traders must learn to risk as much as they're prepared to lose for a given position.

Brokers also have a way of defending their position. After all, as the trader only provides a small percentage of the whole amount of the position (the margin), the broker is at risk too. The so-called "margin call" is his emergency brake. In short, if the open position generates large enough loss (within the margin value) the broker closes it at the current market price. This, on the one hand, limits the loss, though, on the other, it means that the position is definitely closed for a loss.

The forex market monitors the smallest of change in the price of the currency pairs. One pip is just 1/100 of the cent, which means that when a pair (like EUR/USD) moves 100 pips (and that is a lot) the price has moved just 1 cent.

This is the reason why currency transactions must be carried out in sizable amounts, to allow these minute price movements to be turned into larger profits. Leverage is a



unique tool, but it must be used wisely.

QUOTES AND MAIN CURRENCY PAIRS

All currencies in the forex market are expressed in pairs. In order to value one currency, it needs to be compared to the value of another. This is what the quote presents. It is the price of one currency in terms of another. Or, the quote shows how many units of one currency is worth one unit of the other currency.

Financial markets require every currency to be presented as a standard 3-letter code. It typically stands for the country (the first two symbols) and the first letter of the native currency (the third symbol). For example, USD (US dollar), GBP (Great Britain pound), JPY (Japan yen), etc.

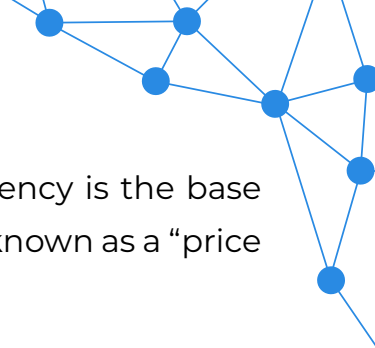
Of course, there are some exceptions to this rule. EUR (EURO zone), ARS (Argentine peso), MXN (Mexican peso) and the quite interesting story of CHF (Switzerland franc), where the country-part of the code (the first two letters) references the old Roman name for Switzerland, “Confederatio Helvetia”.

Two codes make a currency pair. The first currency is called the base currency and the second one is the quote (or counter) currency. The pair shows how many units of the quote currency can be bought with one unit of the base currency. Or, in an example, if EUR/USD is 1.1234, then 1 euro is worth (can buy) 1.1234 US dollars.

DIRECT AND INDIRECT QUOTES

Quotes can be expressed in two ways – direct and indirect. The difference between them is the position of the native currency. In order to determine whether a currency pair is directly or indirectly quoted, we need to know which currency is the domestic and which – the foreign, or we need to have a geographical location as a starting point.

The quote is direct when the price of one unit of the foreign currency is expressed in terms of the domestic currency. It indicates how many units of the domestic currency are needed to buy one unit of the foreign currency. In other words, it's the domestic currency price for 1 unit of the foreign currency.



A direct currency quote is a currency pair in which the foreign currency is the base currency and the domestic currency is the quoted currency. It is also known as a “price quotation”.

The indirect quote is essentially the opposite of the direct quote (1 / direct quote). It presents the price of one unit of the domestic currency, expressed in terms of the foreign currency. In other words, it shows how many units of the foreign currency are needed to purchase one unit of the domestic currency.

In the indirect quote the domestic currency is the base, while the foreign currency is the quoted currency. The indirect quotation is also known as a “quantity quotation”.

For example, if an American trader is checking out the EUR/USD rate, he is looking at the direct quote and USD/EUR would be an indirect quote for him.

The opposite would apply for a European citizen, visiting our American trader. For him EUR/USD would be the indirect quotation, as his native currency is the Euro, while the USD/EUR would be a direct quote.

CURRENCY PAIRS

MAJORS

There are currency pairs that are more important than the rest. They are called Major currency pairs. They are the native money of the most powerful and influential world economies. Because they are traded globally, the forex pairs that they form are extremely active in the market.

Currency pair	Currencies
EUR / USD	Euro / US dollar
GBP / USD	British pound / US dollar
USD / JPY	US dollar / Japanese yen
USD / CHF	US dollar / Swiss franc
NZD / USD	New Zealand dollar / US dollar
USD / CAD	US dollar / Canadian dollar
AUD / USD	Australian dollar / US dollar

MINORS

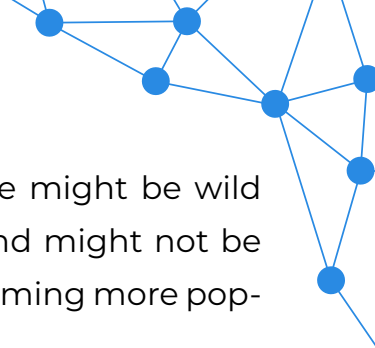
Then there are the Forex Minor pairs. These pairs are formed from the major currencies, but they don't include the US dollar. They are also called Cross pairs or Crosses. Minors are not as actively traded as the Majors but still have very good liquidity.

Currency pair	Currencies
EUR / GBP	Euro / British pound
EUR / AUD	Euro / Australian dollar
GBP / JPY	British pound / Japanese yen
CHF / JPY	Swiss franc / Japanese yen
NZD / JPY	New Zealand dollar / Japanese yen
GBP / CAD	British pound / Canadian dollar
AUD / JPY	Australian dollar / Japanese yen
EUR / CAD	Euro / Canadian dollar
GBP / CHF	British pound / Swiss franc
EUR / CHF	Euro / Swiss franc
EUR / JPY	Euro / Japanese yen

EXOTICS

Last, we have all the remaining pairs. They are referred to as the Exotic currency pairs. They account for a small percentage of the total forex turnover and are less liquid. Here is just a small part of them:

Currency pair	Currencies
USD / HKD	US dollar / Hong Kong dollar
GBP / ZAR	British pound / South African rand
AUD / MXN	Australian dollar / Mexican peso
USD / THB	US dollar / Thailand baht
USD / RUB	US dollar / Russian ruble
USD / SEK	US dollar / Swedish krona
USD / MXN	US dollar / Mexican peso
USD / CNH	US dollar / Chinese yuan
USD / NOK	US dollar / Norwegian krone



The markets where exotic pairs are traded are less stable and there might be wild price swings and much wider spreads. They are much less liquid and might not be available with every broker. Despite all this, some exotic pairs are becoming more popular and ever more investors are trading them.

THE NICKNAMES

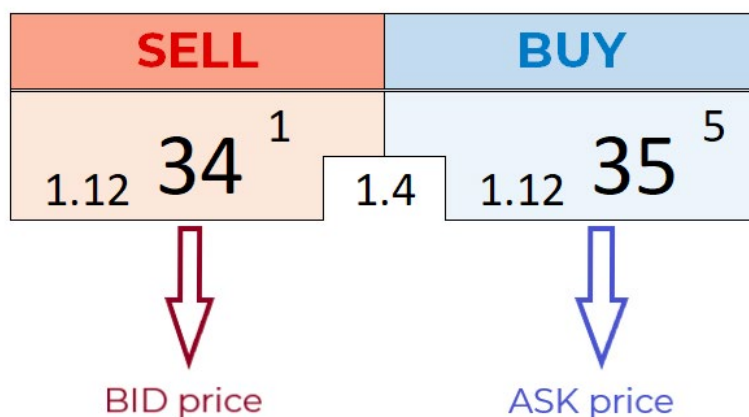
To make things more fun, some currencies and currency pairs have nicknames.

Currency (pair)	Currency (pair) name	Nickname
USD	US dollar	Greenback
CAD	Canadian dollar	Loonie
AUD	Australian dollar	Aussie (or Ozzie)
NZD	New Zealand dollar	Kiwi
GBP	British pound	Sterling
EUR	Euro	Fiber
CHF	Swiss franc	Swissy
GBP/USD	British pound / US dollar	Cable
EUR/GBP	Euro / British pound	Chunnel
USD/RUB	US dollar / British pound	Barnie
EUR/RUB	Euro / Russian rubble	Betty
USD/JPY	US dollar / Japanese yen	Ninja

READING THE QUOTES

Now, after we've learned how to call the pairs, let's learn to read the quotes.

The quote always has two currencies. When we make a trade, we buy one of the currencies by selling the other, or the other way around. When we're buying the currency pair, we're actually buying the base currency (the first) by selling the quote currency (the second). When we're selling the pair, we're selling the base currency (the first) by buying the quote currency (the second).



The diagram shows a trading platform interface. It consists of two main columns: 'SELL' (orange) and 'BUY' (blue). Below these columns are two boxes. The 'SELL' box contains the text '1.12 34¹' and a red arrow pointing down to the label 'BID price'. The 'BUY' box contains the text '1.12 35⁵' and a blue arrow pointing down to the label 'ASK price'. A small white box with the number '1.4' is positioned between the two main boxes, with a black arrow pointing down to the label 'Spread'.

SELL	BUY
1.12 34 ¹	1.12 35 ⁵
BID price	ASK price

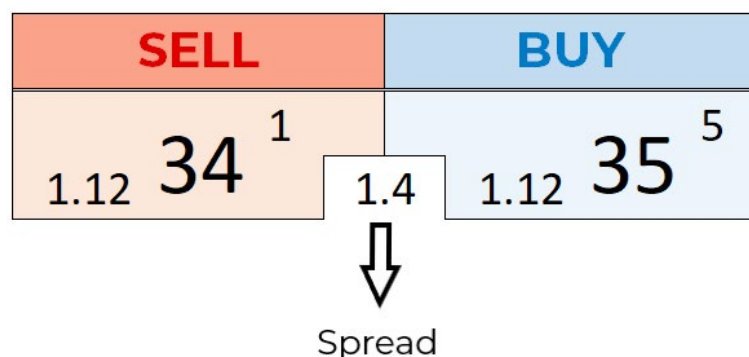
There are always two prices on the trading platform for a currency pair. It's a bit confusing at first, but keep in mind that the prices are from the perspective of the broker. The lower of the two is the Bid (Offer). This is the price at which the broker would buy from you. This is the price that he is offering to you. It is your sell price (for opening short positions).

The higher price is the Ask. It is the price that the broker would sell to you. This is what he would ask you to pay. This is your buy price (for opening long positions).

You always buy at the higher price and sell at the lower, so you, in a way, always start with a little loss, that you need to overcome in order to have a winning position. It is a kind of cost or commission for the transaction. This commission is the profit of the broker. It is known as spread.

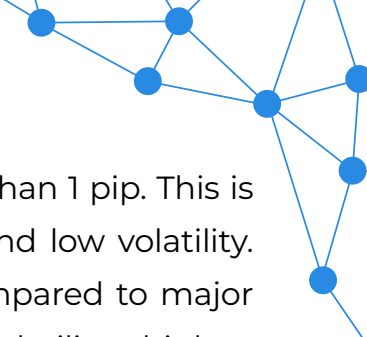
THE SPREAD

The spread is the difference between the Bid and the Ask price at a given moment. It is not just the brokers' earning, but a valuable piece of information. It is a telltale of how liquid and how volatile the market is.



The diagram shows a trading platform interface. It consists of two main columns: 'SELL' (orange) and 'BUY' (blue). Below these columns are two boxes. The 'SELL' box contains the text '1.12 34¹' and the 'BUY' box contains the text '1.12 35⁵'. A small white box with the number '1.4' is positioned between the two main boxes, with a black arrow pointing down to the label 'Spread'.

SELL	BUY
1.12 34 ¹	1.12 35 ⁵
1.4	
Spread	



Major currency pairs tend to have narrower spreads, sometimes less than 1 pip. This is because these markets are very liquid, with huge trading volume, and low volatility. Emerging currency pair markets generally have a higher spread compared to major currency pairs. This is because liquidity in those markets is lower, and volatility – higher.

Spreads can vary, even throughout one trading day. Big news events, or the release of important economic data can cause turbulence in the markets. Just like retail traders, large liquidity providers prefer to play it safe in times of uncertainty. That is why they look to offset some of their risk by widening the spreads. When all the dust settles, spreads return back to normal.

Spreads are usually kept fairly reasonable as a result of the stiff competition between the numerous market makers. Although there may be differences between the brokers, spreads are usually the same or almost the same.

PIP AND PIPETTE

In the physical world where you can touch the money, the smallest you can have is one cent (if we take the US dollar). You cannot have less than that. In the digital forex market this is simply not enough. Prices are typically quoted to the 4th decimal place, with the exception of JPY pairs, that are quoted to the 2nd decimal place. The pip is the digit in the last position. It is in the 5th position, if counting the digits of the quote.

EUR / USD = 1.1234



Pip

USD / JPY = 104.04



Pip

Pips may be unusual to the physical world, but this is a very common feature of the foreign exchange market. This is the norm for measuring changes in the price of the currency pairs.

For example, if the EUR/USD price moves from 1.1234 to 1.1236, it has moved up by 2 pips. If the price then moves from 1.1236 to 1.1224, it has moved down 12 pips.

The spread is also measured in pips. If the EUR/USD bid price is 1.1234 and the ask price

is 1.1235, then the spread is 1 pip. The short way to present this is EUR/USD = 1.1234/35.

The last few years paved the way to an even smaller measure unit – the pipette. It's a tenth of a pip and with its introduction the quotes started showing 5 decimal digits (3 decimal digits for the JPY pairs). The pipette is in the 6th place (the last) of all the digits in a quote.

EUR / USD = 1.12345

↓
Pipette

USD / JPY = 104.041

↓
Pipette

Trading platforms usually show the pips via larger digits, while the pipettes are a small digit to the right of the pips.

SELL		BUY	
1.12	34 ¹	1.12	35 ⁵


THE BROKERS

There are two levels in the forex market. The first is the interbank market. The biggest banks trade with each other there and although there are few members of this tier, the transaction volume is huge. The second level is the over-the-counter market. This is where all other market participants operate through brokers.

The broker is a financial service company that provides traders with the tools to execute forex transactions. Or simpler, the broker provides a trading platform where traders buy and sell currency pairs. Brokers can operate based on different business models. Depending on the way they handle transactions and execute orders, they are most generally divided into two groups.

MARKET MAKERS

Market makers are brokers that “make” a market for their clients. These are the classic



type of brokers. Back when individual traders did not have access to the forex market, it was the market maker brokers that made it possible. Nowadays, the Dealing Desk brokers (DD), as they are also called, facilitate trading for investors, by providing a comfortable trading environment.

One of the benefits a market maker provides for his investors is a user-friendly, easy to use platform. They offer plenty of free support in the form of live online charts with a variety of tools and charting applications, market news feeds and commentaries.

The DD brokers manage to maintain lower volatility for their prices. This is possible because of the way a DD broker operates. The market maker broker accepts the risk of holding a certain number of forex positions on his books for a particular currency pair. By doing this, the broker provides some liquidity to the market.

The market maker sets both the bid and the ask prices and is prepared to honor a buy or sell order from a client at these levels. As a market maker, he takes the other side of the trade and sells if the dealer is buying or buys if the dealer is selling. A basic forex market principle states that at a given price level, there will be both investors willing to buy and those willing to sell.

When executing a trade, the broker has one of the following options. He could match (or net) short and long positions within the market. This manages the trades within the system. Another option is to pass on a trade, or some net amount to a liquidity provider. That would minimize his risk on that position, as he would profit from the spread, without taking the opposite side of the trade. Or, in some cases, he simply takes the other side of the trade.

The market makers profit from the bid/ask spread that they offer. The competition between brokers is strong, so spreads are kept reasonably low. Some brokers even provide fixed spread, which facilitates trading.

Market makers have a reputation for manipulating currency prices, setting wide bid/ask spreads, or trading against investors. Certainly there are brokerage firms with questionable reputation, but it is a matter of research that every prospective investor must do before choosing a broker. Furthermore, this industry is highly regulated, and



when the Commodity Futures Trading Commission (CFTC) and the National Futures Association (NFA) are on the watch, investors should be safe.

ELECTRONIC COMMUNICATION NETWORK (ECN)

The electronic communication networks provide direct access to the interbank tier of the forex market. ECNs are trading platforms that connect investors directly with each other. There is no dealing desk to manage the transactions, that is why this type of brokers is called No Dealing Desk, or NDD.

ECN brokers use top technology servers, ensuring lightning fast trade execution. The advanced price aggregation means increased transparency and lower spreads.

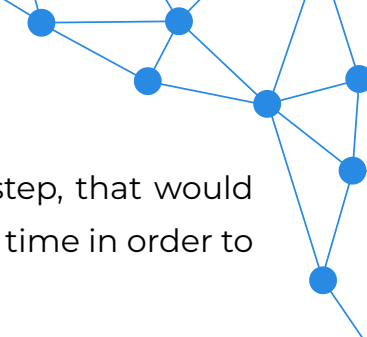
ECN brokers consolidate price quotations from liquidity providers (including major banks and other financial institutions), matching trades with the best possible prices and lowest possible spreads without considering the source. That way they can generally offer their clients tighter bid/ask spreads than would be otherwise available to them. ECN brokers do not interfere throughout the process of trade execution, rather just funnels it through directly to the liquidity providers.

Because this type of brokers does not filter the prices in any way, there may be wider fluctuations in the prices, so volatility in the ECN markets is higher. This is not all bad, of course. Scalping strategies and automated trading thrive in these conditions.

Spreads in the most liquid ECN markets are very narrow, sometimes even hitting the zero. That is why, Electronic networks typically charge a fixed commission, which is the cost for their services. For investors trading with large positions this is a very good option, compared to the spread, which is a percentage of the traded amount. For investors trading smaller amounts, though, it may not be the best offer.

Trading platforms are less user-friendly and take some time and effort to get acquainted with. Most ECN brokers do not provide their clients with integrated charting software or news feeds, so investors need to do this on their own.

The bottom line is that every investor needs to decide for himself what type of broker



best suites his needs and expectations. As this is a very important step, that would affect all aspects of the trading process, it is advisable to take enough time in order to make the right choice.

THE COMMITMENT OF TRADERS REPORT

The forex market is decentralized, and investors can't easily obtain reliable information about the positions of the market participants. A very practical way to understand the dynamics of the market is to analyze the Commitment of Traders report (COT).

It was first published by the U.S. Commodity Futures Trading Commission (CFTC) in 1962 and covered 13 agricultural contracts. Its purpose was to provide information about the current situation on the futures markets. In the beginning, the data was presented once a month. Since 2000, the information has been published weekly (at 3:30 p.m. Eastern Standard time, every Friday, with data compiled on Tuesday same week) on the Commission's website.

The COT report is a great way to provide information about the market positions in currency futures and to add some transparency to these complex markets. It helps traders identify the current trend and determine whether they should take short or long positions in their trades. It does not categorize individual traders' positions because of legal restraints. According to the Commission, this is confidential business practices.

The COT contains four main types of reports:

LEGACY

The Legacy report shows the market of a commodity split into long, short, and spread positions. The market participants are divided into two main categories, non-commercial and commercial traders. It shows the total open interest, as well as changes in the open interest.



SUPPLEMENTAL

The Supplemental report covers 13 selected agricultural commodity contracts for combined futures and options positions. The report gives information on the open interest positions for the market participants, divided into three categories, non-commercial, commercial and index traders.

DISAGGREGATED

The Disaggregated report is divided into the following categories: agriculture, petroleum and products, natural gas and products, electricity and metals, and other physical contracts. These reports have a futures-only report and a combined futures and options report.

The market participants are split into more detailed categories. The commercial traders are divided into producers, merchants, processors, users and swap dealers. The non-commercials are divided into managed money and other reportables. This is meant to give a clearer and more detailed picture of the way different groups see the market.

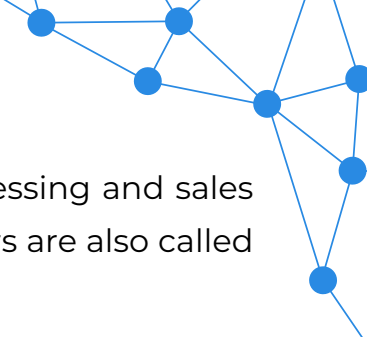
TRADERS IN FINANCIAL FUTURES (TFF)

Since 2010 the Commodity Futures Trading Commission has been publishing the Traders in Financial Futures (TFF) report. This report separates large traders on the financial markets into these categories – dealer, intermediary; asset manager, institutional; leveraged funds; other reportables.

The TFF report separates the financial futures market participants into two major “sell side” and “buy side” categories. The first one includes the dealer/intermediary group, while the second is comprised of the other three categories (asset manager/institutional, leveraged funds and other reportables).

COT TERMS

To better understand the Commitment of Traders report here are some useful terms:



Commercials – all traders who are engaged in the production, processing and sales of a product, and who use futures to manage some risk. These traders are also called hedgers.

Non-commercials – large financial institutions, traders or funds that use futures for speculative purposes. These traders are also called large speculators.

Non-reportable positions – traders with positions that are below the minimum required by the limits of the Commodity Futures Trading Commission for position reporting.

Reportable Positions – all positions at or above the reporting level of the Commodity Futures Trading Commission in any single futures month or option expiration.

Open interest – the total number of the option or futures contracts that are currently not closed by offset operation, delivery or exercise.

Short report - shows open interest separately for reportable and non-reportable positions.

Long Report - in addition to the information from the short report, it contains data on the concentration of the positions of the largest traders.

The COT report is a very useful tool in the financial markets' jungle and traders can extract a wealth of information from it. Knowing how to interpret the COT data properly can certainly help position size traders to forecast new trends, which is the ultimate benefit of the report.

SUMMARY

The forex is a global market of endless opportunities, where traders of all shapes and sizes are welcome. The digitalization of the market has enhanced the trading experience and has made it as accessible and convenient as it can be. You don't need to go to New York, or London, or anywhere else to reach this market. All you need is in your hands.



THE CRYPTO MARKETS

CRYPTOCURRENCY

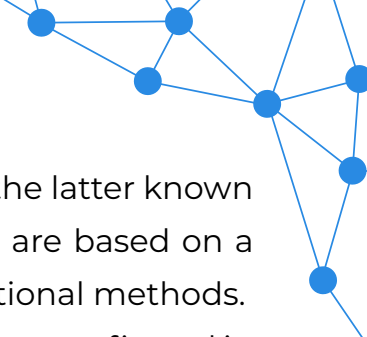
Cryptocurrency is a form of digital or virtual currency, that has no central issuing or regulating authority. Instead it uses a decentralized system to record transactions and manage the issuance of new units and relies on cryptography to prevent counterfeiting and fraudulent transactions. This ledger that exists in the form of computerized database is called blockchain.

Cryptocurrencies are used as a medium of exchange or a store of value. They are an alternative to standard national currencies. Cryptocurrencies have no physical form and exist only in the digital space. Digital cryptocurrency “coins” can be traded on specialized exchanges around the world and can be bought, sold, and converted back to fiat money.

The first successful cryptocurrency (Bitcoin) was introduced in 2008 by a person, or a group of people, using the name Satoshi Nakamoto. The aim was to create a “purely peer-to-peer version of electronic cash (allowing) online payments to be sent directly from one party to another without going through a financial institution”.

The most important feature of cryptocurrencies is that they are decentralized, meaning they are not issued (controlled) by a central authority. There is a network of equally privileged participants that validate and update transactions in a shared ledger. Cryptocurrencies operate independently from banks and that makes them popular in countries where banking institutions are unstable. Being this alternative, cryptocurrencies provide people with full control over their money, in oppose to relying on banks to keep their money safe. There are no restrictions for where, when or how much crypto “money” are sent. Once a transaction is confirmed, it is irreversible.

Another important aspect of cryptocurrencies is privacy. No personal data is used, accounts are not connected to real identities. Every account has an address, comprised of a chain of about 30 random characters. Transactions are not untraceable though, as every block of the chain is available to all nodes in the network.



Every account address, or “wallet”, has a public key and a private key, the latter known only to the owner. The private key is used to sign transactions. Both are based on a cryptography system, providing security by far exceeding the conventional methods. Cryptocurrency transfers are done directly between two parties. They are confirmed in minutes, regardless of the physical location of the two parties. There is no middleman between the sender and the receiver, e.g. a bank or a digital payment service and that means minimal fees are charged.


It is falsely believed that the blockchain technology is not open to the public, but available only to its network of common users. In fact, everyone with a computer or a smart phone can download the free software and see the transactions in real time. Access to cryptocurrencies is easier than to banks, so the potential of digital commerce is not to be underestimated.

BLOCKCHAIN

The blockchain is an immutable record of encrypted data managed by a cluster of computers. There is no central server, or any other single entity, owning the computing power or the data. Instead, every participating computer is an equal member of the network – the so-called peer-to-peer system. The data is organized in blocks, each secured using cryptographic principles.

The information in the blockchain system is stored in a shared and continuously updated database. This database has no physical single location. There is no original version that is being broadcasted throughout the network. Every computer (node) has the same version of the database, meaning there are millions of copies. The information is available to everyone on the internet. This gives a level of transparency never seen before in a financial system.

The blockchain technology is a simple but ingenious way of passing information from one person to another in a fully automated and safe manner. It all starts with an initial transaction that is immediately taken by miners competing to validate the accuracy of the information using a cryptographic protocol. Once validated, the information is added to a block, along with other transactions. The usual size of one block is about 1 MB, the time it takes to validate it is about 10 minutes (through solving a complex



mathematical problem) and, once approved, the containing information becomes immutable.

When the block is ready, it goes to join the chain. This always happens in a chronological manner, so this block is added to the “end” and gets a number. This number that refers to the position of the block in the blockchain is called “Height”. The block is assigned a hash code, containing the exact parameters of the data inside. It keeps information about the date, time, amount, participants (not their names, but their identifying digital signature), etc. What’s really important is that it stores the hash code of the preceding block. That is an ultimate safeguard system.

Hashes are cryptographic codes created by special algorithms. They are extremely sensitive to all kinds of change (a Capital letter to Small letter gives a completely different set of characters), so even the slightest alteration would change the hash drastically. If a hacker tries to tamper with something in the block, the hash would change and would not correspond to that, saved in the next block. He could fix that, but there would be a next, and a next, and a next block. Besides, there are millions of copies of the blockchain, containing the original of that block. So, hacking the blockchain is not exactly impossible, it’s simply not worth it.

Because of the direct way every transaction is made, the cost for it is minimal. This is a great advantage for the blockchain technology over the current bank transfers, for example.

Other business models that rely on a middleman can soon be outdated, too. The so-called “smart contracts” are on the rise with blockchain. These are simple contracts with defined conditions that the users have agreed to. When the conditions are met, the computer code executes them automatically. Blockchain is good for supply chains, file storage, elections, crowdfunding, the applications are endless.

MINING

Mining, in the scope of blockchain technology, is the process of adding new blocks of data to the distributed public ledger of existing transactions, or the blockchain. The people who run mining operations on their computers are awarded for their work



with crypto coins.

Mining serves two main purposes. First, new units of the cryptocurrency are generated at a controlled pace, and second, and most important, the transactions are validated. In the decentralized cryptocurrency blockchain trust is a must. That is why validation is key to the functioning of the system. In the process of mining, the data is encoded using strong encryption and then distributed over the entire network.

Each computer keeps an updated copy of the blockchain. The computers (or nodes) communicate using a software protocol that checks for consistency. If someone tries to manipulate the data in a block, the other nodes would reject the change, in accordance with the consensus protocol. This is a procedure through which all nodes reach a common agreement about the present state of the distributed ledger. The purpose is to make sure that the new block that is added is the one and only version of the containing data. Mining is employed in many blockchain technologies, but the term is widely associated with Bitcoin.

When a Bitcoin is sent from one address to another, the transaction is taken by the nodes for a checkup. It is compared to previous transactions associated with these addresses, the purpose being to prevent double spending. Every existing Bitcoin is unique, so it can be identified, and its history can be tracked. The verification process encrypts the data using an algorithm that produces a number, called a “hash” and compiles it in a new block.

A hash value from the previous block must also be included in the block-to-be in order to link them securely in the blockchain. Then miners need to solve a complex mathematical problem called “Proof of work” (PoW), which is difficult, time-consuming and costly (hardware, energy).

The way the system works, a block is mined once every 10 minutes on average. This speed is automatically controlled so that the blockchain develops in a predictable fashion. If too many miners join the network, meaning the mining speed increases, a number called “target value” decreases. This increases the mining difficulty, thus reducing the mining speed. The target value is adjusted once every 2016 blocks, or about once every 2 weeks and is a part of the mathematical problem that miners solve



in the Proof of work system.

To solve the complex puzzle, a number (generated using SHA-256) must be found. In short, a nonce is added to the hash of the new block and the header of the latest block of the blockchain. The resulting number must be lower than the target value. If it is not, the computation starts again, using an incremented number for a nonce. The solution to the puzzle is difficult to find but easy to verify (you compare the target value and the solution value). Once the solution is found, the new block is added to the chain and propagated to the network.

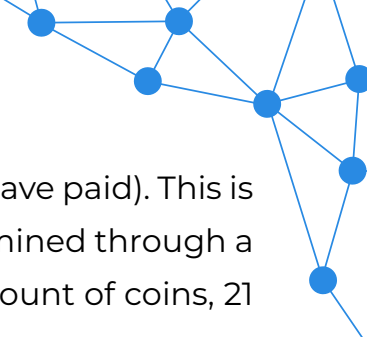
There are other consensus algorithms used with other cryptocurrencies blockchain networks. Ethereum, for example, has shifted from PoW to PoS (Proof of Stake). In this type of algorithm, miners invest coins instead of buying expensive hardware. These coins are locked up as a stake, giving them the right to mine the blocks. Other protocols include the Proof of Burn, Proof of Capacity, Proof of Elapsed Time, etc.

The decentralized nature of blockchains needs the participants to be able to come to an agreement as to the shared state of the blockchain. Unanimous consensus amongst the network nodes results in a single blockchain containing verified data (transactions) that the network asserts to be correct. There are times, however, when the nodes in the network can't reach a unanimous consensus. In such a case more than one valid chain forms. They are known as "blockchain forks".

There are three types of blockchain forks: Soft Fork, Hard Fork and Temporary Fork. The first two occur after a software update. The Soft Fork would allow the use of both new and old protocols, while the Hard Fork would mean the new rules are mandatory for all nodes.

When a block is mined by more than one miner (or a group of miners) at approximately the same time, which would result in two or more valid blocks with identical data and height, the network may not agree on the same block. This is eventually resolved when more nodes choose one of the blocks, leading to the other chains to die out. This is the Temporary Fork.

When the new block is added to the blockchain the miner is awarded a certain num-



ber of Bitcoins (plus the fees that the users sending the transactions have paid). This is the only way new coins are generated. The size of the reward is determined through a schedule set by Satoshi Nakamoto, meaning there will be a finite amount of coins, 21 million, calculated to be reached by 2140.

HALVING

With every 210 000 blocks mined, or approximately every 4 years, the reward given to Bitcoin miners, along with the creation rate of Bitcoins, is cut in half. These events are known as “halvings”.

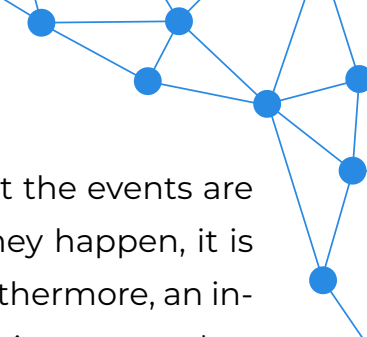
The process is hard-coded into the Bitcoin blockchain and as it is open-source, anyone can see the few command lines that determine the halving rules. The initial subsidy for mining a block was set with the Genesis block (the very first block of the chain) at 50 Bitcoins. The first halving (2012) reduced it to 25 BTC. Halvings happen once every 4 years. Once 32 halvings occur, the process will stop, and no more Bitcoins will be created. At that point the pre-defined maximum of 21 million coins will be reached.

The fixed number of Bitcoins contrasts with traditional currencies. The system was developed amidst the global crisis of 2007-2008 and was an opposition to the flaws of the current financial system. Through the halvings, Bitcoin prevents price inflation. There is no easy way to introduce more supply to the system, a process known as quantitative easing in the conventional financial systems.

Nakamoto never explicitly explained the reasons behind halvings. The system is designed to create more coins at the beginning, which may have been meant as an incentive for people to join the network and start mining new blocks.

The halvings bring into play the basic economic principle of supply and demand. When the supply drops, given the demand remains the same, the price (value) rises. Halvings reduce the creation of new coins by half, while demand typically remains steady. The less Bitcoins created, the more valuable those in existence are. The halvings have so far lead to some of the biggest runs of Bitcoin.

But because of the decentralized and semi-anonymous nature of Bitcoin it is difficult



to attribute specific things to specific events. For example, given that the events are pre-programmed in the code and everybody knows exactly when they happen, it is not unlikely that they get reflected in the price before the halving. Furthermore, an increase in the coin value may lead to users holding Bitcoin as a speculative asset rather than using it as a medium of exchange.

Halvings strongly affect the miners, as their reward is drastically reduced. Mining is a very costly process, so if the revenue is not enough to cover the expenses, miners will be forced out – something that may reduce the computing power of the network significantly. In the end, mining is a business and it is only normal that miners would make some adjustments to their business models as each new halving nears.

Furthermore, there is a backup plan if prices don't increase as a result of the short supply. This is the process that reduces the mining difficulty, which can be a stimulus for the miners to keep working.

Once all the blocks are mined and all the coins are created, transaction fees will pay miners for keeping the network going and secure. If the blockchain system develops well, the growing number of transactions will make up for the lack of new coins.

Halvings are a new way of introducing money in a financial system. Bitcoin is an inflationary currency, but unlike any other currency, the inflationary rate decreases, in a predictable and pre-defined manner. In the long run, scarcity is what might make Bitcoin a safe haven against currencies that are vulnerable to devaluation during times of economic crisis.

TYPES OF CRYPTO COINS

Today, there are thousands of different cryptocurrencies with various functions and specifications. Basically, they can be divided into three types of cryptos.

BITCOIN

This is the first ever decentralized cryptocurrency. It is up to now the most popular and the most widely accepted coin. It is the largest cryptocurrency in value (or market



cap), leading the second in the ranking with 10 times higher value.

ALTCOINS

As the name suggests altcoins are alternatives to the original (Bitcoin). The first altcoins appeared in 2011 when Bitcoin users started noticing flaws in the Bitcoin system. The new solutions were designed for better speed, anonymity and security. Some of them are hard forks of Bitcoin, while others are completely new currencies with their own blockchains.

ETHEREUM

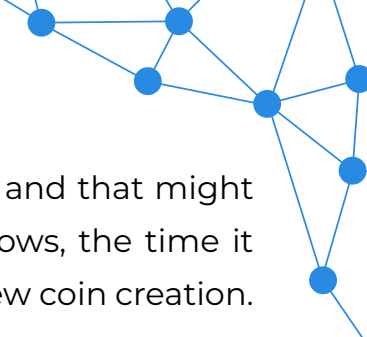
Ethereum is a programmable blockchain-based platform. This means that Smart contracts and Decentralized applications (DApps) can be built and deployed on top of the blockchain. The code written on the Ethereum blockchain can't be altered, tempered, or hacked. The smart contracts and DApps are not managed or censored by any third party and run without any downtime.

It takes about 14 seconds to complete an Ethereum block and its size defers, depending on the complexity of the smart contracts in it. Most blocks are around 2 MB. This leads to a fast growing blockchain that, at one point, would become difficult to manage.

One proposed solution to the problem is called "Sharding". This would divide the chain between groups of nodes and not everyone on the network would be verifying and recording everything.

The cryptocurrency asset Ethereum uses is Ether (ETH). This is the fuel to everything on the network. ETH is sought mostly by developers who need it to develop and run applications inside the platform, but there are other uses of it, too. ETH can be streamed to pay or receive funds in real-time or traded against other tokens.

At launching Ethereum, 72 million Ether were initially released and from there on 5 ETH are awarded for each new block. There is no cap to the amount of ETH that would be released, so theoretically it can go forever.



Some fear that at one point the supply would outgrow the demand and that might decrease the value of ETH. Others point out that as competition grows, the time it takes to solve a block would increase, thus decreasing the speed of new coin creation.

RIPPLE

Ripple is a global payment system that aims to replace the outdated systems for international payments that are both slow and expensive. It was developed by Ripple Labs Inc., a for-profit company. Its structure is a bit different from the standard blockchain technologies. It uses a common ledger managed by validating servers. Those servers are permissioned and authorized by Ripple (the company) to confirm transactions and update the ledger. This means instantaneous validation at low cost for the users and less computing resources for the validating nodes.

XRP Ledger is designed to move large amounts, so it best serves the needs of banks and other financial institutions. This happens through the gateways of the RippleNet (a digital network based on the Ripple Transaction Protocol). RippleNet processes 1,500 transaction per second (compared to BTC – 6, ETH – 15). Each transaction is validated in 5 – 7 seconds. The platform hosts 3 different products: xCurrent (the primary product), xVia (a payment interface and suite of APIs) and xRapid (the liquidity solution).

The cryptocurrency of Ripple is XRP. It is not created through mining. Instead all coins were issued with the launch of the network. The total amount is 100 billion coins and according to Ripple protocol no more coins can ever be created. 41 billion XRP are currently in circulation, the rest is held by Ripple Labs.

Transactions are paid for using XRP, which is destroyed (burned) in the process. The Proof-of Burn consensus mechanism that is used means XRP supply will decrease over time. This might raise the XRP value in the future, compensating other factors that could keep it low.



TETHER

Tether is the most famous member of a group called “Stable coins”. They are designed to follow tightly the value of a fiat currency, like the US dollar. This pegging to the US dollar is achieved by maintaining dollar reserves amounting to the number of USDT in circulation. In other words, every USDT coin in the crypto market is backed by 1 USD (or EUR, for the EURT), as far as the company owning Tether claims.

Tether doesn't have its own blockchain but operates on top of other cryptocurrencies' blockchains (like Bitcoin and Ethereum, for example), using their security algorithms. There is no hard-coded limit on the total number of coins. It is rather a matter of company policy. According to Tether (the company) every time a coin is created, one dollar is put aside to ensure the coin is completely backed by cash.

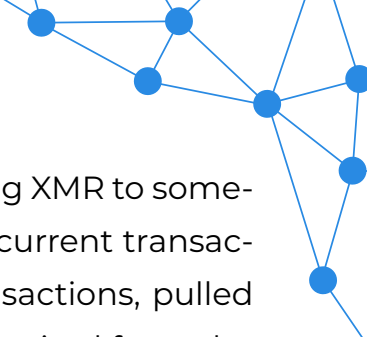
To have a coin like USDT in the volatile crypto market is a great benefit. It builds a bridge between crypto and fiat currencies. Many crypto exchanges that do not deal in fiat money offer USDT in the trading pairs. Tether is considered by some a safe haven, because in times of high volatility in the crypto markets they can keep their portfolios safe through Tether without having to completely cash out into USD.

There are many concerns, though, that need to be mentioned. One of the biggest is that the cryptocurrency is privately owned, so it's completely centralized. Another big issue is a number of controversies regarding the validity of Tether's claim about their USD reserves. Many fear that the company is not completely fair and transparent, considering the fact that the reserves have never been fully audited by an independent third party.

MONERO

The Monero blockchain is all about anonymity. Its cryptography obfuscates the sending and receiving addresses, as well as the transacted amounts. Security updates are often and mandatory (Hard forks) for the network. Monero is a private and secure system, where transactions are executed in a completely unlikable and untraceable way.

To ensure all of that, Monero uses rings of signatures and stealth addresses. Ring sig-



natures are a way of concealing the sender. In a nutshell, when sending XMR to someone, the sender would first choose a “ring size”. This means that the current transaction will be packed with several (the ring size) additional decoy transactions, pulled from the Monero network (executed valid entries, no permission is required from the participants involved). When signed and sent for validation, it is impossible to tell the true from the decoy transactions, and at the same time, it’s unambiguously recognizable to the validation algorithm (thanks to something, called “key image”).

The stealth addresses add to the opacity. The sent XMR do not directly go to the receiver’s wallet. Instead they are transferred to a one-time public address. The receiver then scans the network for this address and retrieves the coins. Because every transaction is completely untraceable, along with the history of any one XMR coin, Monero is considered fungible. This means that there is no difference between the coins.

Monero blockchain uses the Proof-of-Work consensus protocol (like Bitcoin), but the algorithm aims to favor the use of consumer-grade PCs for mining, rather than large mining pools that use specialized, high-performance mining hardware. Despite that, a few mining pools have formed, that hold much of the hashing power.

The blocks don’t have a fixed size. When demand increases, the size of the blocks increases respectively. When it shrinks, the block size decreases as well. To prevent malicious activities, a median of the last one hundred block sizes is calculated and compared to the new block size. If it is bigger, miners get penalized through a reduced reward (the bigger the difference, the bigger the penalty).

A block is mined in about 2 minutes and the reward miners currently get is 4.99 XMR. The total amount of XMR is topped at 18.4 million Monero coins, though once reached there will be further creation of coins at a rate of 0.3 XMR/minute to ensure the miners rewards and to keep them incentivized to mine.

OTHER ALTCOINS

The list of altcoins goes on, of course. Some of them are quite successful, like Litecoin (the silver to Bitcoin’s gold), Dash, Zcash, EOS and more. Each has its own specifics but they all (altcoins and Bitcoin alike) serve a similar purpose – be an alternative to the old ways.



TOKENS

Tokens represent a tradable asset or utility. They are created in the context of a specific business idea and in order to have value, they need to be accepted by a community. Tokens are issued on top of an existing cryptocurrency blockchain, most often – the Ethereum blockchain, and cannot function on their own.

They are quite easy to make. Certain rules and pre-defined templates are to be followed to create a smart contract that would distribute tokens. A unified solution is the ERC-20 Token Standard. This is a protocol, or a step-by-step guide to lead you through the process.

Tokens are distributed in an Initial Coin Offering (ICO). While the ICO is active, the people interested in the project buy the tokens, usually paying with cryptocurrency coins. Tokens can be classified into two sections: security and utility tokens.


Security tokens represent a share in some external asset or enterprise. They are a subject to the same regulations as the standard stocks. Even though they are issued on a blockchain, they grant legal contract-binding ownership right over an asset to the investor.

Utility tokens are different. They grant the holder access to a future product or service, something like a pre-order. Utility tokens are a way to bypass traditional investors and raise funds directly from the future customers. They are not an investment in the developing business and do not grant any share of it.

Utility tokens can only be used within the issuing platform. A good example of utility tokens is those used in some gaming platforms. The tokens can be bought with crypto or fiat money and can be used within the game to purchase things or give them to other players. Utility tokens are a popular fundraising method and a good way of providing funds to innovative or interesting business ideas.

TYPES OF ORDERS

To be able to trade in the crypto markets, you need to know what kind of orders you can place and what are each order's specifics. Orders, in the context of financial mar-



kets, are instructions given to the exchange to buy or sell. Each crypto exchange offers a different set of order types. There are those that are typical and basal for all crypto markets. Depending on their way of execution orders are divided into market and pending orders.

MARKET ORDERS

The market order is executed immediately at the best available price. This is the simplest way of putting an order. The trick is, depending on the liquidity and volatility of the crypto market, the buy market order or sell market order may be filled with slippage.

This is because market orders are matched with the best available order in the opposite direction. If its volume is not enough, the order book takes the next order, with the next best price. This difference in the price of these two orders is what makes up the slippage.

BUY ORDER

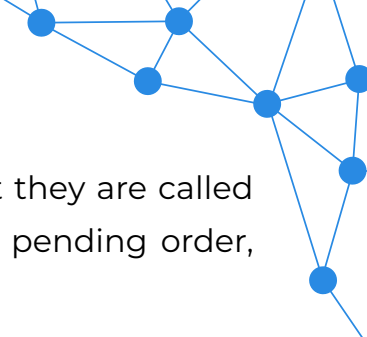
The market Buy order is the fastest way to buy, as no conditions are to be met in order to execute the order. Because it needs to be filled immediately, the market buy order is known as “taker” as it takes part of the available market liquidity. That is the reason why it is charged higher fees.

SELL ORDER

The market Sell order is an order that is executed immediately, as no conditions are to be met. Because it needs to be filled immediately, the market sell order is known as “taker” as it takes part of the available market liquidity. That is the reason why it is charged higher fees.

PENDING ORDERS

Pending orders are those that are initially just added to the order book of the crypto market, to wait for execution. They hold some conditions that need to be met before



the order can be filled. Because they provide liquidity to the market they are called “makers”. Lower execution fees are usually charged for executing a pending order, compared to executing a market (or “taker”) order.

BUY LIMIT ORDER

Limit orders are “maker” orders. They wait to buy or sell an asset at a specified price or better. They cannot be filled at worse price levels than the limit price (so no slippage can occur). When submitted, limit orders enter the order book, thus providing liquidity to the market.

Buy limit orders are placed below the current market price. The time till the execution of the order is not fixed, but a matter of whether the market will reach the specified price level. In that sense, the buy limit order can remain untouched by the price, respectively not filled.

SELL LIMIT ORDER

Sell limit orders must be placed above the current market price. Just like the Buy limit the execution is not guaranteed. The sell limit order can remain untouched by the price, respectively not filled.

BUY STOP ORDER

The Buy Stop is a pending order to buy (open a long position) at a level, which is above the current price. This order gives instructions to open a position at a price worse than the present, so it is used when the trader expects the price to continue up.

A typical situation to use the Buy Stop is at a breakout of a resistance level, when it is expected that the upward price move will continue.

Once the Buy Stop is reached by the market price it is executed as a market order, at the best available price.



SELL STOP ORDER

The Sell Stop is a pending order used to sell (open a short position) at a level, which is below the current price. A Sell Stop order gives instructions to open a short position at a price worse than the currently available.

A typical situation to use the Sell Stop is at a breakout of a support level, when it is expected that the downward movement will continue.

Once the Sell Stop is reached by the market price it is executed as a market order, at the best available price.

TAKE-PROFIT AND STOP-LOSS ORDERS

There are variations of market orders that have the purpose of giving extra advantages to an open position, thus enhancing its risk/reward ratio.

TAKE-PROFIT ORDER

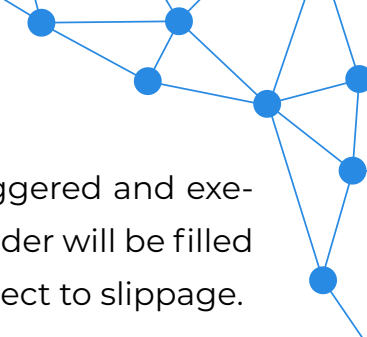
Take-profit orders are used to keep the profits. The price is set by the trader and is called a profit price. It represents the profit he plans to achieve. The take-profit order is placed below the current market price when it is used with a short position and above the current market price when it would close a long position.

Once the take profit price is reached the order is executed as a market order, at the best available price. So, it could be filled with slippage.

STOP-LOSS ORDER

Stop-loss orders are designed to minimize the loss if the price changes unfavorably, hence the name. The trader sets the price for the order, called “stop price”. Stop-loss orders that protect a short position are placed above the current price and stop-loss orders that protect a long position are placed below the current market price.

Though the stop-loss order is a somewhat pending order, it is not added to the order



book. When the market price reaches the stop price the order is triggered and executed as a market order. This means that there is a chance the stop order will be filled at a different price than the stop price, in other words – may be a subject to slippage.

TRAILING STOP ORDER

The trailing stop order works like the stop-loss order but in a more flexible manner. The stop price of this order is not fixed, instead it moves in relation to the market price. It is set to a fixed percentage or a fixed amount from the market price and as long as the market price moves in the desired direction, the trailing stop order follows (or trails) behind.

If the market price pulls back in the opposite direction, the trailing order stops in place. If the price continues its path and hits the stop, it is triggered and executed as a market order. The trailing stop buy order is placed above the market price and the trailing stop sell order is placed below it.

It is essential to correctly determine how far away from the market price to set the trailing stop. Putting it too close to the price means any minor correction could trigger the stop and end the position prematurely. Too far away on the other hand means it may never serve its protective purpose.

There are many more types of orders available on the crypto markets, of course. These were just the basic ones, but as every building needs a sound foundation, you need to work your way up step by step, starting from floor 1.

CRYPTO EXCHANGES

Cryptocurrency exchanges are web-based platforms for exchanging cryptocurrencies against other digital or traditional currencies. They usually work 24/7, giving a constant access to trading. Depending on the characteristics of the exchanges they can be divided into three types.



CENTRALIZED CRYPTOCURRENCY EXCHANGE (CEX)

CEX are quite like normal stock exchanges. They have a central authority that governs and overlooks the transactions. Personal information is required in order to register and be able to trade. Registered users must hold accounts with the exchange.

Typically, fees are charged for the transactions. CEX have high liquidity and trading volume. Some (but not all) allow fiat-to-cryptocurrency trades, while most allow crypto-to-crypto pairings. These are the most widespread type of exchange. CEX comes in different forms.

TRADITIONAL


The traditional crypto exchanges are much like the traditional stock exchanges where buyers and sellers trade based on the current market prices of cryptocurrencies. The exchange serves as the middleman. The platform matches the buyers and the sellers automatically.

DIRECT

The direct trading platforms offer direct peer-to-peer trading. In other words, buyers and sellers trade directly with each other. This type of cryptocurrency exchange doesn't use a fixed market price. Buyers and sellers set the exchange rate at which they are willing to make the trade and when the expectations meet, the trade is executed. The matching is manual as buyers and sellers decide the user they would trade with. For better protection of its users the platform holds the traded amounts in escrow until both parties have fulfilled their contractual requirements.

BROKER

The cryptocurrency brokers are websites that anyone can visit to buy or sell cryptocurrencies. The price is set by the broker and includes a small commission for each transaction. Cryptocurrency brokers are similar to foreign exchange dealers. The exchange is between the buyer/seller and the broker. The brokers websites aim simplicity and user-friendly interfaces and that is the reason why they are preferred by novice crypto traders.



Some of the largest centralized cryptocurrency exchanges are Binance, Huobi Global, Kraken, Coinbase PRO, Bittrex.

DECENTRALIZED CRYPTOCURRENCY EXCHANGE (DEX)

DEX is the type of exchange that aims to be in line with the original idea of Bitcoin. This is a peer-to-peer network that does not depend on any centralized service or organization. A decentralized exchange does not store assets or personal data. There is no one to monitor the transactions, which are executed by an automated Smart contract. This is basically an agreement in the form of computer code that runs on the blockchain and is automatically executed once its conditions have been met.

The completely decentralized functioning of the system means better protection from hacks and cyber-attacks. The funds are in the hands of the owners so crypto traders have full control over them.


There are some disadvantages to DEX. One is the lower volatility and trading volume compared to CEX. Another is the lower execution speed, which depends on the confirmation speed of the blockchain.

Some of the most popular decentralized exchanges are Uniswap, IDEX, Waves DEX, Bisq DEX and Stellar DEX.

HYBRID CRYPTOCURRENCY EXCHANGE

The hybrid exchanges aim to merge the advantages of both CEX and DEX, while avoiding their disadvantages. More specifically they combine the liquidity and functionality of CEX with the security and privacy of DEX. They are a next generation crypto exchange. The first ever hybrid crypto exchange is Qurrex and was launched in 2018.

As every exchange (whatever the type) has its specifics, a checkup is advisable before doing any trading. One way to get to know an exchange is to go through reviews. Questions and posts from both individual users and websites can provide valuable information.



Different exchanges offer different trading fees and exchange rates, and they can differ substantially. There are different payment methods available with the exchanges. All this information is usually provided on the exchange website.

A very important thing is the verification requirements, which is the personal data required for the registration. A thing to consider is also the country restrictions, as some practices are not allowed in every country.

SUMMARY

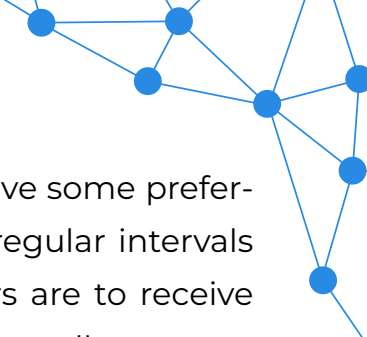
Many experts believe that cryptocurrencies and blockchain will disrupt many industries, including finance and law. Some see limitless potential, while others see nothing but risk. What the future holds for this fast-evolving technology is yet to be seen, but one thing is for certain – it has become a global phenomenon in the recent years and it's here to stay.

THE STOCK MARKET

The stock market is a market where traders and investors buy and sell stocks, along with other securities in a safe, controlled and regulated environment. One of its main purposes is to ensure fair and transparent pricing of the stocks. This market is not one place, although many often call it Wall Street. It is rather a global network of exchanges that are linked together electronically to facilitate and expand trading opportunities for their clients.

Stocks (or shares) are issued by companies (specifically corporations) that choose to fund themselves by giving away bits of ownership of their company in exchange for money. This is a way of accumulating capital to expand their business. People who buy those shares are called shareholders. They expect the company to make profits and pay dividends.

There are two main types of shares – common and preferred. Common shares give their owners voting rights. They enable the shareholders to participate in corporate meetings and take part in things like the election of the Board of directors. The more common shares one owns, the more voting power he has.



Preferred shares do not grant voting rights to their owners, but do give some preferences, as the name implies. They pay an agreed-upon dividend at regular intervals and are less risky. In the event of liquidation, preferred shareholders are to receive assets before the common shareholders. The downside is they offer a smaller return.

HISTORY

The stock market has a long and interesting history. The first stock exchange in Europe was founded in Antwerp, Belgium in 1531. Stock markets were later opened in Amsterdam, London, New York.

The largest stock market in the world is the New York Stock Exchange (NYSE). Its story began more than 200 years ago, in 1792, when 24 New York brokers signed the Buttonwood Agreement. In 1817 the New York Stock Exchange was housed in a rented room on Wall Street N°40 and although it later moved out, the name stuck.

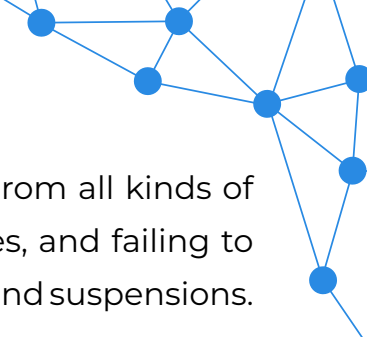
Trading was conducted in trading pits, where orders were communicated face to face. Traders used the so-called Open outcry system, where hand signals and shouts made in a particular way and sequence would convey trading information in the trading pits.

Nowadays, the advent of technology has helped upgrade the level and the Open outcry system is replaced with a faster, more secure, more efficient way of conducting stock trading. The stock exchanges of the digital today bring together thousands of market participants who wish to buy and sell shares, this way offering higher liquidity and transparent pricing.

MAIN OBJECTIVES

The development of the stock markets is governed by the principles of fair pricing, effective matching of orders and balanced regulations. They provide the market participants with instant access to the available buy and sell orders. Transparency in the process of matching the orders is also an important task.

Other things that stock markets do is to support a fair price for the listed shares. The immutable law of supply and demand shapes the prices, but other factors need to be



reflected as well. For this purpose, business reports, as well as data from all kinds of economic sources is being maintained. Rules are strict for companies, and failing to provide timely reports, for instance, may lead to disciplinary measures and suspensions.

The market needs to support all types of participants. While some buy shares to hold them for many years, others are on the market to try to make a quick profit. There are those who own a wealth of shares, and those who only have a small amount to invest. All should be able to operate however they feel appropriate, within the regulatory rules of the market.

STRUCTURE

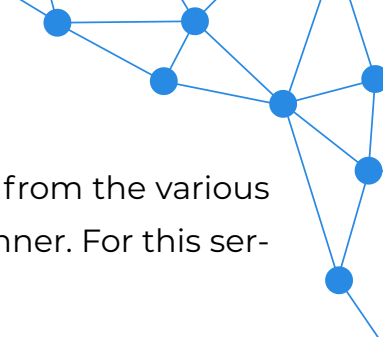
The stock market facilitates two general activities related to shares and so it is divided to Primary market and Secondary market.

The primary market allows companies to issue and sell their shares to the public in a process called Initial public offering (IPO). This is the moment when a private company takes the decision to issue public shares. The stock exchange, through its primary market, provides the marketplace for the IPO, where traders and investors interested in the company can buy the shares. For this service, the exchange receives a fee. The IPOs provide benefits for investors and companies, as they both trade in a regulated and secure environment.

The IPO is a part of the listing process. Listing refers to the admission of the securities of a company for trading on the stock exchange. Only listed shares are quoted on their electronic platforms. Listing is beneficial for the company, because it provides liquidity to the shares, as well as effective control and supervision.

There are some drawbacks to being listed on a stock exchange, of course. Regulations are heavy and a company needs to comply with them at all times. The pursuit for higher share price might change the focus of the company. Besides, there are costs associated with listing, compliance and reporting.

Once listed in the books of the stock exchange the company's shares can be bought and sold by investors in the tier referred to as the secondary market. This is an orga-



nized stock trading exchange that manages the sell and buy orders from the various market participants by matching them in a fair and transparent manner. For this service, of course, it charges a fee.

The IPO is a one-time offer, but companies do have the option to develop their profile further. If they're willing to issue more shares, they can do so at any time through follow-on offers. Or they may decide to buy back or de-list part or all their shares. All this happens in the secondary market.

It is important to understand that companies listed on the exchange do not buy or sell their own shares (normally). So, when buying shares, traders are not buying them from the company that has issued them, they are buying them from someone who owns those shares (a legitimate shareholder). And the other way around. When a trader is selling shares, he is not selling them to the company, but to someone else on the market.

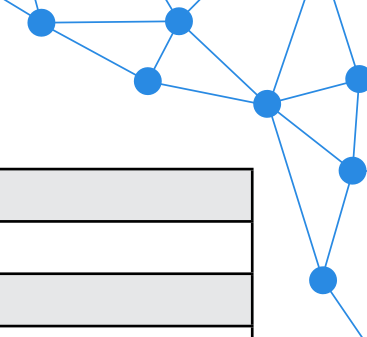
STOCK CLASSIFICATION

Stocks can be classified in a number of different ways. Two very common classifications are by market-cap and by sector.

Market capitalization is the total market value of a company's shares on the market. It is derived from the total number of shares multiplied by their current price. This classifies the companies to large-cap companies with market capitalization of \$10 billion or more, mid-cap companies with market cap between \$2 and \$10 billion and small-cap companies with capitalization between \$300 million and \$2 billion.

The classification system by sectors divides the companies to 11 sectors:

1	Energy
2	Materials
3	Industrials
4	Consumer Discretionary
5	Consumer Staples
6	Health Care



7	Financials
8	Information Technology
9	Communication Services
10	Utilities
11	Real Estate

Some sectors are considered more defensive than others. They are preferred by investors for their better price stability and attractive dividends. Such sectors are health care and utilities. More aggressive investors choose the riskier sectors, such as technology, energy and financials.

STOCK PRICES

The issue price is the price at which the company sells its shares during the IPO. From there on, it's mostly supply and demand that shape its price. If the demand is higher than the supply, the price rises, and the opposite leads to a fall. A trade transaction happens when a buyer accepts the ask price or when the seller accepts the bid price of the stock.


The difference between the ask and the bid is the spread. The narrower the spread, the better the liquidity in the exchange. If there are many buyers and sellers who have posted orders with different prices, the market is said to have good depth.

TYPES OF ORDERS

There are different types of orders to meet the needs and likes of all market participants. The main orders in the stock market are the market and the pending order.

MARKET ORDERS

The market order is the most basic type of order. It executes an immediate buy or sell trade at the best available price. If you are buying stocks, you will pay the ask price (or a price near the ask) and if you are selling, you will receive the bid price (or a price near the bid).



The price of execution may be different from the last traded price, especially in more volatile markets. The market order is often executed with some slippage, though in a market that deals with thousands of orders daily, it is rather small.

PENDING ORDERS

Pending orders are instructions to the exchange to buy or sell at a pre-defined level. The trade will be activated when the price reaches the limit price and will only be executed at a price equal to or better than the limit price.

There are 4 main types of pending orders.

The Buy limit order is placed at a price level below the current market price and will buy the security at a price better than the current.

The Sell limit order is placed above the current market price and will sell a security at a price above the current.

The Buy stop order is an order that is placed above the current market price. As it gives instructions to buy at a level that is worse than the current, it is used when a rise in the price of the security is expected.

The Sell stop order would sell a security at a price lower than the current market price. Accordingly, it is used when it is expected that the price of the security will fall.

It is good to know these common types of orders. Each of them gives a different perspective in the market and broadens the opportunity for profitable trades.

STOCK MARKET INDICES

Apart from monitoring the prices of individual stocks, investors are really interested in the stock market indices (also called indexes). These are aggregated prices of different stocks where the movement of the index price is the net movements of the different components in it.



A very important index is the Dow Jones Industrial Average (DJIA). Other very popular indices are the US S&P 500, the German DAX 30 and the UK FTSE 100.

Indices measure the stock's market performance. Most market indices are market-cap weighted, which means that they are based on the total market capitalization of the components within it. Some, like the DJIA are price weighted. This means that a price-per-share value is calculated for each stock within the index and then they are averaged to form the value of the index.

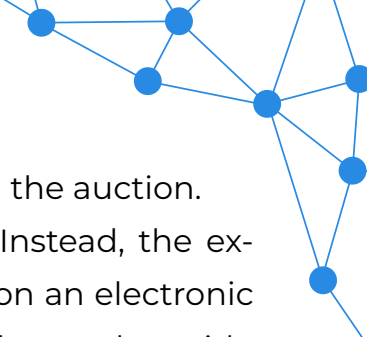
STOCK EXCHANGES

The largest stock exchanges in the world are the New York Stock Exchange (NYSE) and the Nasdaq, based on the total market capitalization of their listed companies.

This is a list of some of the largest stock exchanges in the world.

Exchange	Location
NYSE	U.S.
Nasdaq	U.S.
Japan Exchange Group	Japan
Shanghai Stock Exchange	China
Euronext	France
Hong Kong Exchanges and Clearing	Hong Kong
LSE Group	U.K.
Shenzhen Stock Exchange	China
TMX Group	Canada
Saudi Stock Exchange (Tadawul)	Saudi Arabia
BSE India Limited	India
National Stock Exchange of India Limited	India
Deutsche Boerse AG	Germany
SIX Swiss Exchange	Switzerland

NYSE remains one of the world's leading auction markets, although some of its functions have been already transferred to electronic trading platforms. This means that there are real flesh-and-blood specialists present on its trading floors. Each of them



specializes in a particular stock, and in buying and selling the stock in the auction. The Nasdaq is an electronic exchange. It has no physical location. Instead, the exchange is a network of computers and all of the trading takes place on an electronic platform. There are dealers (or market makers) who interact with traders and provide liquidity to the market. They post the bid and ask quotes for the stocks they are willing to trade.

A developing type of exchange that exists as a part of the exchange structure is the ECN (electronic communication network). It connects buyers and sellers directly, bypassing the market maker. Both NYSE and Nasdaq have ECNs, thus offering this alternative way of trading to their clients.

WORKING TIME

The stock exchanges have fixed working time. For example, NYSE is based in New York and is open from 9:30 a.m. to 4 p.m. EST, unless there's an early close due to a holiday. The Nasdaq normal trading day begins at 9:30 a.m. and ends at 4 p.m. EST. Pre-market trading is available from 4 a.m. to 9:30 a.m. EST, and the after-hours trading is from 4 p.m. to 8 p.m. EST.

SUMMARY


Stocks are a profitable investment. They generate profit through capital gains and dividends. The stock market is open to everyone willing to try. It creates good opportunities for all parties as it provides companies with the means to accumulate the resources they need in order to expand their businesses.

With proper management of course, in the end, everybody can be a winner.

THE OPTIONS MARKET

OPTIONS AND THE OPTIONS MARKET

Options are contracts that give an investor the right, but not the obligation to buy or sell the underlying asset, at a certain price, over a certain period of time. They are a



derivative financial instrument because their price is based on the price of the underlying asset, which could be a security, ETF or even an index. Options are traded on the options market.

Option contracts usually represent 100 shares of the underlying security, and the buyer pays a premium fee for each share. An investor may choose to buy an option or to sell an option. The option itself can give to the investor the right to buy the underlying asset, or to sell it.

Buying an option does not grant ownership of the underlying asset. It gives the investor the opportunity to buy or sell it, but only if he chooses to. He may do so by the expiration date of the contract. If the investor does not exercise his rights, the option becomes worthless at the expiration date. Until that date, the holder may choose to sell the option.

Trading options is a bit like betting on the price of the underlying asset to go up or down. If the trader thinks the price of the stock (for example) will rise, he buys a call option. He is said to be bullish on the price of the underlying asset. If he thinks the price will fall, he can buy a put option. He is then bearish.

THE OPTION PRICE

The price of the option is called premium. Because options are derivative financial instruments, the premium price is derived from the price of the underlying asset, also referred to as intrinsic value. There is one more component that plays a significant role in determining the premium – the time value, also called extrinsic value.

The price of the underlying asset within the option is called strike price. It is the price at which the holder could exercise the option (buy or sell the underlying asset) if he chooses to. The difference between the current and the strike prices makes up the intrinsic value of the premium.

The time value (the extrinsic value) is a monetary representation of the influence that the remaining time till expiration has on the premium. The more time there is until the expiration date, the more likely it is for the option to become profitable. In that



case, the time value is higher.

Over time, the time value decreases as the expiration date approaches and reaches zero at expiration. This process of decreasing is known as time decay.

If the intrinsic value is bigger than the extrinsic value (intrinsic + extrinsic = premium), that means that the profitability of the option is more dependent on the price moves (the volatility) of the underlying asset. High extrinsic value implies the opposite – that the option is not so sensitive to the volatility of the underlying asset (basically because there is much time till expiry).

PROFITABILITY

During their lifetime the options can move from profitable to losing, round and round. There are terms describing the profitability of an option.

IN THE MONEY

If an option is in the money (ITM), this means that it has intrinsic value. In other words, the strike price of the underlying asset is in a favorable position, compared to the current market price.

For a call option this would mean that the strike is lower than the current market price, while for the put option it means that the strike price is above the current market price.

This is not enough to call the option profitable. Other expenses, such as commission fees need to be put into the equation first.

OUT OF THE MONEY

Out of the money (OTM) option is one that only has extrinsic value. For a call option this is when the strike price of the underlying asset is higher than the current market price. The put option is OTM when the strike price is below the current market price.



AT THE MONEY

At the money (ATM) is a situation where the strike price is identical to the market price of the underlying security. ATM options have no intrinsic value, but they still have some time value.

ATM options usually cost more than OTM options, because there is still time for them to become ITM and the likelihood of that happening is greater than that of the OTM options.

THE GREEKS

The market price of an option reflects the probability of the option to be in the money at expiry and depends mainly on three factors:

- The relationship between the strike and the current price of the underlying asset. The more an option is out of the money, the less likely it is to be in the money at the expiry, so the current market price is lower.
- Volatility of the market. The greater the volatility of the market, the more likely the option is to be in the money at expiry. Therefore, the options have higher prices when the underlying asset is with higher volatility.
- The remaining time to expiry. The more time there is to the expiry of the option, the more likely the price of the underlying asset is to reach the strike and be in the money.

The impact of these three factors on the market price of the option are analyzed by the so-called Greeks. The most important of them are the following.

DELTA (Δ)

Delta measures the sensitivity of the option price to the price of the underlying asset. It represents the rate of change between the option's price and the underlying asset's price. The Delta of a call option has a range between zero and one, while the delta of a put option has a range between zero and negative one.



VEGA (\mathbf{v})

Vega measures the changes in the premium of the option price depending on the market volatility. It represents the rate of change between an option's value and the underlying asset's implied volatility (expected volatility). A rise in volatility correspondingly increases the value of an option. Conversely, a decrease in volatility affects negatively the value of the option.

THETA (Θ)

Theta measures the changes in the premium of the option depending on the passage of time (time decay). It represents the time sensitivity of an option. Theta increases when the option is at the money and decreases when it is in/out of the money.

Options closer to expiration have accelerating time decay. Long call and long put options usually have negative Theta, while short calls and short puts usually have positive Theta.

GAMMA (Γ)

Gamma measures the rate of change of delta depending on the price of the underlying asset. This is called second-order (second-derivative) price sensitivity. Gamma is used to determine the stability of an option's delta. High gamma values mean that the delta could change dramatically in response to even small movements in the underlying asset's price.

Options that are at the money have higher Gamma and options that are in/out of the money have lower Gamma. Gamma values are lower when the date of expiration is further away and increase as the expiration approaches.

RHO (ρ)

Rho measures the sensitivity of the option price to the interest rates. Rho has the highest values for at the money options with long time until expiration. Call options price generally rises as interest rates increase and put options price generally decreases as



interest rates increase. Call options have positive rho, while put options have negative rho.

TYPES OF OPTIONS

Options have two variations regarding the way they can be exercised. The European option can be exercised only at the expiration date. The American option can be exercised at any time prior to expiry. Regarding the rights they give for the underlying asset, there are two types of options – call and put.

CALL OPTIONS

BUYING CALL OPTIONS

A call option gives the investor the right (without the obligation) to buy an asset, at a strike price, until a certain date. It is an agreement that the buyer of the option makes with the seller of the option, and for that the buyer pays the seller the premium (the price of the option).

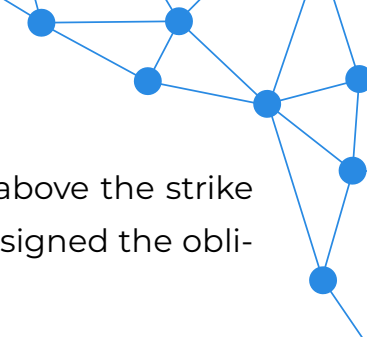
If you're buying a call option, it means that you are expecting the price of the underlying asset to rise. If the option becomes profitable, you can exercise it and buy the asset at the strike price. That means you'll now own the asset at a price, lower than the current market price. You can sell immediately and take your profit.

If the call option doesn't become profitable, you would not exercise it and it would simply become worthless at the expiration date. Your loss would be the premium paid to the seller of the option.

SELLING CALL OPTIONS

The other way to exit a call option is to sell the contract itself. This is called writing a contract and the seller is called writer.

If the price drops and the option is not exercised by the buyer, your profit (as a writer) would be the price you received from the sell. You can even profit from the remaining time value of the contract, if there is any left.



Things look a bit different for the writer in case the current price is above the strike price. If a buyer decides to exercise the option, the writer could be assigned the obligation to deliver the terms of the options contract.

In that case, you would have to sell the underlying asset (say shares) to the buyer at the strike price. If you have those shares in your portfolio holdings, you can sell them to him (at an unfavorable price, as the strike price is lower than the current).

If you don't have them, you must buy from the market (at the current higher price) and sell them to the buyer (at the strike price). Both mean that you would incur a loss. The bright side of it is you do receive the premium. Also, there is a good chance that you won't be assigned. This is a random process and the average probability for assignment is about 17 %.

PUT OPTIONS

BUYING PUT OPTIONS

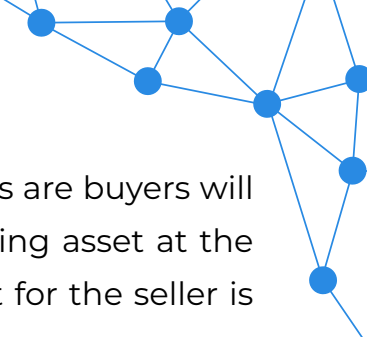
The put option is a contract that gives the investor the right (without the obligation) to sell the underlying asset, at a strike price, until a certain date. You buy a contract that gives you the option to sell the underlying asset. For that you pay the premium (the price of the option).

When you're buying a put option, you are expecting the price of the underlying asset to drop. If the market price falls below the strike price, you can exercise it and sell the underlying asset for a profit.

If the price instead rises, you could let the option expire, without exercising it. At expiration date it would be worth zero and your loss would be the premium paid.

SELLING PUT OPTIONS

A holder of a put option may decide to sell it if he believes the price of the underlying asset will stay the same or increase.



If the market price stays around the strike price or increases, the odds are buyers will not exercise their right (because they don't want to sell the underlying asset at the lower strike price) and will let the option expire worthless. The profit for the seller is the received premium.

However, if the current price of the underlying asset drops below the strike price, buyers might choose to exercise their put option by selling the asset (e.g. shares). The writer may be assigned the obligation to deliver the terms of the options contract and to buy the underlying asset at the higher (than the current market) strike price.

The put writer can either hold the shares and hope the stock price would rise back above the purchase price or he can sell them immediately and take the loss.

Of course, the bright side – he does receive the premium. Besides, there is a good chance that he won't be assigned. This is a random process and the average probability for assignment is about 17 %.

The bottom line here is that an investor needs to enter into a contract with a clear view of the parameters of the trade and the possible exits. Neither buying, nor selling a contract is a bad thing, you just need to be prepared.

WHY TRADE OPTIONS

Options are traded for several reasons. It is considered safer to trade options than to trade the actual asset because you can withdraw the contract at any point if you choose to. Leveraged positions can be held at lower cost so a trader is able to profit from the price moves of the underlying asset, but at the same time to not get involved in the actual asset. Investors also use options to hedge or reduce the risk exposure of their portfolios. These are excellent choices that provide an advantage in the diverse world of trading.

THE COMMODITY MARKET

COMMODITIES AND COMMODITY MARKETS

A commodity is a raw material or a primary agricultural product that can be bought and sold. Not all materials and products qualify for a commodity because there are some conditions that need to be met.

The item must be standardized and for the industrial and agricultural commodities – it must be “raw”. Then, it must be usable upon delivery. And, its price must vary enough to justify developing a market for that commodity.

There are four main categories of trading commodities:

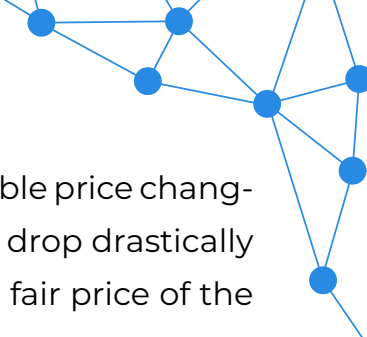
- Energy – oil, natural gas, gasoline (petrol), crude oil and heating oil, etc.
- Metals – gold, silver, platinum, nickel, zinc, copper, etc.
- Livestock and Meat – feeder cattle, live cattle, poultry, eggs, etc.
- Agricultural products – wheat, corn, sugar, coffee, cocoa, cotton, rice, etc.

Energy and Metals are also called Hard commodities, while Livestock and Agricultural products are referred to as Soft commodities.

Different countries specialize in producing different commodities based on the availability of natural resources. Commodities play an essential part in the overall functioning of the economy. In the end, there are few things in our household that haven't, at some stage, been on the commodity market.

The sale and purchase of commodities are usually carried out on exchanges through futures contracts or in the spot (cash) market. The latter is where buyers and sellers complete their transactions immediately based on an agreed upon price.

The futures contracts are derivative instruments. They are standardized contracts between the seller and the buyer to state that at a specific future date the seller must provide a certain quantity of the commodity to the buyer, whereas the buyer must pay the contracted price to the seller. Every commodity has a trading symbol, expiry months labeled by letters, and standardized quantities.



This provides to both the seller and the buyer stability against unfavorable price changes. It acts as a kind of insurance to the seller, that the price would not drop drastically by the time he is ready to deliver the good. The buyer gains from the fair price of the contract and the predictability that it offers.

Prices are not set by the exchanges in any way. Exchanges are simply the marketplace where supply and demand shape the day-to-day prices of the commodities. Some exchanges have an open-outcry session and an electronic session, extending their total working time to 22 hours a day.

Exchange members engage in the open-outcry auctions in the trading pits on the exchange floors. During these sessions, buyers and sellers announce their bids and offers. When two parties agree on a price, the trade is sealed both on paper and electronically. The exchange then posts the price information to news services and other reporting agencies around the world.


There are clearing members in the exchange who are responsible for managing the payments between the buyer and the seller. These are usually large banks and financial services companies. They require traders to make good-faith deposits (called margins) in order to ensure that they will not default on the trade.

There is one more type of players on the futures market. They are the speculators who buy and sell futures contracts with the sole purpose of making profit. Many commodity markets are very liquid and quite volatile and that provides perfect opportunities for intraday traders. They usually trade on the electronic trading platforms offered by the commodity exchanges.

EXCHANGES

Commodity exchanges are about 50 and are scattered around the world. The New York Mercantile Exchange Inc. (NYMEX) is the world's largest physical commodity futures exchange.

Different exchanges trade different commodities. The Chicago Board of Trade (CBOT) for example, offers trading of corn, soybeans, wheat, oats, rice, gold, silver and etha-



nol. The Chicago Mercantile Exchange (CME) commodities include milk, butter, feeder cattle, cattle, pork bellies, lumber, and lean hogs. The New York Board of Trade (NYBOT) trades coffee, cocoa, sugar, orange juice, and ethanol.

Competition between the various centers for futures trading has increased steadily. While the exchanges in Europe are still strengthening, new trading products are being created in the US. They are very important for the overall competitiveness.

Commodity exchanges are highly regulated. The Commodity Futures Trading Commission (CFTC) regulates commodity futures and options markets in the USA and in Europe this is the Markets in Financial Instruments Directive (MiFID). Their objective is to promote competitive, efficient and transparent markets and to protect consumers from fraud, manipulation and unscrupulous practices.

THE BOTTOM LINE


The advantages of the futures contracts are their standardization, low cost, speed of order execution, transparency of prices and the guarantees by the clearing house. They can ensure the prosperity of these markets. The introduction of the CFDs made the commodities available for the retail traders. Now they can afford much smaller lots and diversify further the asset classes. This lowers the overall risk and provides new trading opportunities.

EXCHANGE TRADED FUNDS (ETF)

ETF EXPLAINED

ETFs are a basket of assets pooled together into one fund, that you can trade without having to buy all the components individually. These are funds that can be traded on an exchange, just like a stock (hence the name), and their price changes throughout the day.

It all starts with a fund provider who owns the underlying assets. He designs a fund to track their performance and then sells shares of that fund to investors. Shareholders own a portion of the ETF, but they don't own the underlying assets in the fund. Nev-



ertheless, if the ETF tracks a stock index, for example, investors receive dividend payments for the stocks that make up that index.

ETFs are not limited to the stock markets, of course. They can also invest in currencies, options, bonds, commodities or a mixture of assets.

ETFs have unique ticker symbols so that their price activity can be tracked. Some fund providers have put their sense of humor in those tickers. The SPY is one of the ETFs that track the S&P 500, HACK is a cyber-security fund, GAMR is a Game Tech ETF and FONE is focused on smartphones.

TYPES OF ETF

ETFs come in a variety of shapes and sizes. An ETF can own hundreds of stocks across various industries, or it could be focused on one particular industry or sector.

Exchange traded funds can be managed passively, which means the manager does not need to decide neither what securities to buy for the ETF, nor the weight of each security in it. This is pre-determined by the index that the ETF would track.

ETFs can also be managed actively, which means that it's the manager who chooses what securities would be included in the basket of the ETF.

Other criteria divide the ETFs into the following groups:

- Index ETFs - they track the price moves of a stock index. The most popular are SPDR S&P 500 ETF Trust (SPY), Vanguard Total Stock Market ETF (VTI), Invesco QQQ Trust (QQQ).
- Industry ETFs - they cover stocks from one industry, for example technology, consumer staples, pharmaceutical, financials, energy, agriculture, etc.
- Commodity ETFs - track the prices of various commodities. They can be used to trade crude oil or wheat, as an alternative to the commodities futures or CFDs.
- Bond ETFs - track the prices of various bonds issued by governments, corporations, state and local authorities.
- Currency ETFs - track the performance of some currency pairs.

- 
- Inverse ETFs - a very interesting type of ETFs. Instead of shorting stocks with all the associated requirements, you can just buy an inverse ETF.
 - Volatility ETFs - track volatility indices such as VIX (CBOE Volatility Index). Some of the most popular VIX ETFs are iPath S&P 500 Dynamic VIX ETN (XVZ) and ProShares VIX Short-Term and Mid-Term Futures ETF (VIXY and VIXM).

ADVANTAGES AND DISADVANTAGES

Buyers should be aware that exchange traded products differ from one to another quite drastically. They need to be studied well, before diving in their pools. But once mastered they reveal excellent opportunities.

ETFs provide diversification to the trader's portfolio. Some of them have hundreds of components, which would require quite a lot of time and money to obtain piece by piece. By buying the ETF it delivers the benefits of them all in just a single click.

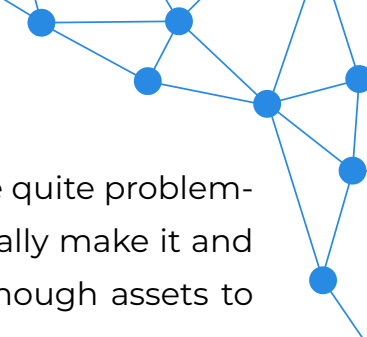
Diversification also means risk management. ETFs can be used to spread risk as instead of buying shares in just one company, the ETF grants a little piece of a bunch of companies.

ETF pricing is as transparent as it gets. Anyone can check the price activity for an ETF on an exchange. In addition, ETFs report their underlying securities daily, which means investors always know what they are holding.

ETFs offer lower costs and fewer broker commissions than those when buying the stocks individually, as investors only need one transaction to buy and one transaction to sell. Brokers usually charge a commission for each trade. Some low-cost ETFs are even not charged, and this reduces the costs even further.

Commissions on the actively managed ETFs can be higher, though. This is because managers put in time and effort in buying and selling shares of companies and changing the holdings within the fund. Fees can also vary widely from fund to fund, depending on the issuer.

ETFs have a wide range of liquidity. The most popular ETFs are constantly traded, with



tens of millions of shares per day being bought and sold but it can be quite problematic to sell if the ETF is not as frequently traded. Some ETFs never really make it and need to close. This could happen when an ETF does not bring in enough assets to even cover its administrative costs. Investors, in this case, need to sell as soon as possible and often at a loss.

ETFs provide great possibilities and advantages when you use them right. The level of diversification that an ETF offers is hardly reachable otherwise. As with all financial derivatives, there should be some caution when choosing what to trade.

FUNDAMENTAL ANALYSIS

The fundamental analysis is a method for analyzing and evaluating different types of assets. It aims to calculate its fair price and compare it to the current market price. This kind of analysis is most suited for evaluating stocks, although it is very useful for other types of financial classes, like bonds and forex, as well.


The fundamental analysis study all kinds of publicly available data, from macroeconomic factors, such as the state of the economy, to microeconomic factors, like the quality of the company's management. It examines everything from external events that may influence the price of the asset to the financial reports of the companies.

The various fundamental factors can be grouped in two general categories – quantitative and qualitative.

Quantitative factors are the hard numbers derived from all kinds of indicators. This includes the financial statements of companies. The most important of them are the balance sheet, the income statement and the cash flow statement.

Qualitative factors are less tangible. They evaluate things like the business model of the company, the management, the quality of the relationship between managers and workers, or managers and shareholders. Qualitative analyses also assess competition, market share, regulations and business cycle.

The fundamental analysis is usually done from top to bottom (top-down analysis). This



means that a broader view of the economy is taken first, by analyzing the entire market, then it is narrowed to the sector, the industry, and down to the very company (when analyzing shares).

A bottom-up analysis is also possible. It does the opposite. It starts from analyzing the company, then works its way up to consider all macroeconomic factors that have influence on the price.

The end goal is to arrive at a number that can be compared to the present price of the asset. The resulting value is considered to be fair, because fundamental analysis gives an objective assessment of the factors that have influence on the asset. This fair price is sometimes referred to as the “intrinsic” value of the asset.

If this intrinsic value is lower than the current market price, the asset is considered overpriced. It is reasonable to assume that the market price would fall. If the intrinsic value is higher than the current market price, it is considered underpriced and would be expected to rise.


Fundamental analysis finds these discrepancies in the prices and gives the opportunity to take advantage of them. The price always catches up with the fundamentals in the long run. The trick is, it may take a while.

THE ECONOMIC CALENDAR

The economic calendar gives information about the scheduled data releases and events related to the financial markets. They can affect the prices, so fundamentalists always keep a watchful eye on the calendar. Traders use that data to plan future trades or protect open ones.

The economic calendars are available throughout the internet, though it is important to note, that some focus on a certain area of interest and do not show all pending events. Nevertheless, there are websites that have very well-developed economic calendars, and there are even those, where you can customize a calendar of your own.

The calendars focus mainly on the scheduled releases of different economic reports.



These are interest rate decisions, regular reports from the central banks, weekly jobless claims, latest non-farm payroll numbers, etc. There can be more than a dozen different events on a given day.

The economic calendar includes information about the hour of release (mind the time zone), the currency that is associated to this particular report, the previous, forecasted and the actual figures.

For convenience the reports are ranked, according to their influence and importance to the financial markets. The ranking style may vary depending on the website, but typically the events are divided into three groups.

Minor events are expected to have minimal or no influence on the markets. These are marked as “Low” meaning “Low impact” and can be presented by 1 (of 3) dots, or 1 (of 3) stars, or a color (e.g. blue).

Events that may influence the prices to some extend are marked as “Medium” and have 2 (of 3) dots, 2 (of 3) stars or a color (e.g. yellow).

The most important events that are expected to have significant impact on the prices are marked as “High”, 3 (of 3) stars or 3 (of 3) dots and usually the color red.

Traders should pay attention to Medium ranked events and be on the alert for any moves in the markets. What they must never underestimate are the High ranked events. They often enough lead to volatile movements, regardless of whether the data comes out above, below, or in line with the market expectations.

As traders are aware of the volatility preceding these events, they may take measures to reduce their risk by canceling their pending orders and managing their open orders. This may lead to a drop in the market liquidity and sudden moves may be more likely to occur. It may take some time before the price settles and chooses a direction.

Knowing the economic calendar means more trading opportunities and less risk. Every trader should take the time to go through it every day so that he knows what's ahead and get prepared.



INTEREST RATE

The interest rate is the amount of interest due per period, as a proportion of the amount lent, deposited or borrowed. In general, the interest rate is the price charged by central banks for lending money to the private banks. It is a major factor that affects the fundamentals of the currency pairs.

The interest rates are determined by the central banks and are part of their monetary policy. Commercial lending rates follow closely the central banks' interest rates, since private banks cannot lend money cheaper than they borrow. This strong connection is what makes interest rates a tool for regulating the economic performance and the inflation of a country.

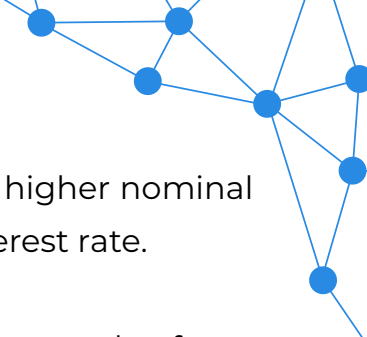
If the economy's pace is beginning to slow down, central banks can reduce the interest rates. In doing so, they decrease the borrowing cost and loans become more accessible to companies and investors. The incentive for saving decreases as well, and people begin to invest their money, rather than save them.

This leads to an overall economic boost, driven by the increase in the investment rate and the development of the production sectors, as well as the rise of the personal income and spending.

As the money supply increases, the inflation rate follows. But too much inflation can harm the economy. So, in order to control it, the central banks increase the interest rates, which in turn increases the borrowing cost and the people's incentive to save, rather than spend their money.

This interest rate cycle influences the value of the currencies in the foreign exchange market. Higher interest rate levels mean more attractive currency, since its value is higher, compared to other foreign currencies. And the other way around, lower interest rates decrease the value of the currency and weakens it against the others.

It is important to distinguish between nominal (or base) interest rate and real interest rate. The nominal rate is the official figures that we see but traders and investors need to be aware of the real interest rate behind it. It is calculated when you remove the



influence of the expected inflation on the nominal rate. In the end, a higher nominal interest rate might be very much due to inflation, rather than real interest rate.

Another thing to consider is that although central banks regulate the supply of one currency, it is political and economic stability that dictates the demand for it. A stable economy would increase the confidence of investors as well as their willingness to use the currency as a reliable financial asset, while high interest rate accompanied by high inflationary levels would do the opposite.

The interest rate does not change every day. It does so in a generally predictable enough manner, with central banks usually notifying the public beforehand in press conferences, to avoid unnecessary market turmoil. That is why all changes are usually “priced” in the currency pairs by the time they happen.

What forex traders should watch out for are the expectations for upcoming changes. Because a change in expectations can lead to a change in speculation, gaining more momentum as the expected change nears. And while the interest rates change gradually, sometimes all it takes for the market sentiment to change is one report.

GROSS DOMESTIC PRODUCT (GDP)

The Gross Domestic Product (GDP) is a summary of the overall economic activity of a country. It represents the total value of all goods and services produced in an economy for a given period.

GDP is published annually, but there are also monthly and quarterly publications. It can be calculated using different methods, but the most widely used is the Expenditure approach, which calculates the sum of final goods and services.

$$GDP = \text{Consumption (C)} + \text{Investments (I)} + \text{Government Spending (G)} \\ + [\text{Exports (X)} - \text{Imports (M)}]$$

From the fundamental analysis perspective, the rate of change of GDP can give fair information about the “health” of the economy. Forex participants pay close attention not so much to the figures themselves, but rather to the change in respect to the



previous period.

An increase in the GDP compared to previous periods points to an increase in the supply of goods and services, the employment rate and the money supply in the system. The economy is considered growing and its currency – stable and attractive to forex players.

Of course, too much of a good thing is never good news. There is a “goldilocks” zone for the increase of the GDP, different for every economy. In common, a rise between 1.5% to 3% per year is considered healthy for developed economies, such as the US or the UK, while for developing countries, like China, the normal rate can be more than 6% per year.

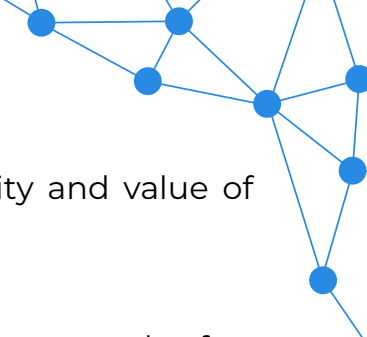
Values beyond that comfort zone are a source of concern about growing inflation or unsustainable economic bubbles. Slower growth, on the other hand, would lead to concerns about stagnation and declining economic standards.

Negative values would indicate that the economy is shrinking. This would mean business cutbacks, rise in unemployment rate, less money in the economy. Two consecutive quarters with negative GDP growth is typically viewed as a recession.

GDP is the one indicator to give an overall estimate of a country's economy. This is helpful, as it provides a net value of a whole lot of different components. But being so general means that some important characteristics may be obscured. To compensate for that and to add to the value of GDP there are additional indicators derived from it.

One of the most important are the GDP per capita. When comparing the GDP of two countries it is easy to say which economy did better, but it does not necessarily mean higher living standard for its people. If we divide GDP by the number of the citizens, we get the GDP per capita, or how much of the total economy income can be attributed to each individual citizen.

Another common adjustment is to extract inflation from GDP. This is called Real GDP. It is a measure that reflects the true value of all goods and services produced by an economy in a given year, expressed via base-year prices. The comparison of the Real



GDP of consecutive years can give information for both the quantity and value of goods and services.

GDP is an indicator that is calculated retrospectively. The figures come out only after the period is over. In contrast, the forex market is forward-looking, so it is often affected by the expectation of a future change.

Expectations are usually priced in the value of the currencies before the actual figures are calculated. Still, sometimes expectations defer from reality and that can lead to volatile movements in the markets.

As a rule of thumb, lower than expected GDP would lead to a sell off of the domestic currency, as it is expected to weaken against the other currencies. Higher than projected GDP would strengthen the underlying currency compared to other currencies. GDP reports do not always have the same effect on the markets. Sometimes expectations are fully reflected in the prices so the markets might not react at all.


INFLATION

Inflation shows the rate of increase in the prices of the goods and services in an economy over a period of time. When prices increase, purchasing power (currency value) decreases. A certain amount of money then buys less than it used to.

Deflation is the opposite of inflation (a negative inflation). It means lower prices and higher purchasing power (currency value). Although it sounds tempting, it harms the economy in the long run.

Inflation is all about money supply. As the Central bank of a country is responsible for the monetary policy, it is the authority that controls inflation. It does so by introducing more money into the system at a controlled pace. From there on, different mechanisms can drive the inflation. They can be classified into three types – Demand-pull inflation, Cost-push inflation and Built-in inflation.

We have Demand-pull inflation when the demand for goods and services increases more rapidly than the production capacity. The higher demand leads to a shortage,



or a demand-supply gap. Naturally, the response is an increase in the prices. The Demand-pull inflation is a type of inflation that is caused by a shift in demand.

Cost-push inflation is the result of an increase in production cost. This is when the prices of the raw materials increase, thus making the production more expensive. To remain profitable, producers increase the end price of the goods or services they offer. So, the Cost-push inflation is a result of a shift in supply.

The Built-in inflation relates to the future expectations for a rise in prices. Seeing the prices rise (as a result of Demand-pull or Cost-push inflation) and expecting them to continue to rise, workers demand higher wages to keep their living standard. This raises the cost of production and respectively the price of the final product or service. And the spiral goes on and on. Because of this circular dependency, the Built-in inflation is sometimes referred to as the wage-price spiral.

The common understanding is that mild inflation (in the range 2-3%) is healthy for the economy. A steady monetary policy is also beneficial, as businesses can plan for the future, knowing what to expect.

There are many indices that measure the effects of inflation. The most popular is The Consumer Price Index (CPI). It is calculated monthly by the Bureau of Labor Statistics (for USA). It examines the weighted average retail prices in a basket of goods and services that are primary to the consumers. This includes things like food, transportation and medical care. The CPI measures the average change of those prices. Comparing it to previous levels shows the change in the cost of living for the consumer.

The Consumer Price Index is very important in periods of rapid decrease or increase in the interest rates. In general, higher inflation leads to higher interest rates, and hence a more expensive currency.

The Producer Price Index (PPI) is another indicator for measuring the inflation. It measures the change in the selling price received by domestic producers of intermediate goods and services. It is calculated in the same way as the CPI, but from the sellers' perspective. This index measures the price pressure on producers and differs from the consumer index, because of the potential this pressure to be transferred to the end



users or reduced by trade discounts, increased productivity or other measures.

LABOR MARKET

The labor market refers to the supply of and the demand for labor, where employees provide the supply and employers – the demand. The labor market is a key factor for the well-being of the economy. A high employment rate means stable income for the citizens, high living standard, sustainable purchasing power and all that translates to prosperous economy and high GDP.


From a macroeconomic point of view, the labor market is influenced by the educational level and the age of the population, immigration, etc. On a microeconomic level the factors that affect the labor market are working hours, wages, working conditions, benefits, etc.

There are a number of fundamental indicators that help evaluate the state of the labor market. They measure its “health” and mark the changes in the employment conditions. Because the US economy is the world’s biggest, its employment data is monitored closely.

One of the most important reports is the Employment Situation Report, which is published monthly, at 8:30 a.m. EST on the first Friday of the month and includes information about the previous month. The jobs report (as it is known) is considered a good tool for gauging the current state of the labor market via its indicators.

The Non-farm Payrolls is the single most widely followed piece of data from the jobs report. It represents the number of new workers (or jobs) added for the period, excluding farm employees, government employees, private household employees and employees of nonprofit organizations. The NFP also provides data on the unemployment rates, details on hours worked and average hourly earnings, and other.

The expectations for the next NFP report are often priced in the forex market prior to the release of the jobs report itself. Yet, divergences between projections and reality could lead to volatile movements in the currency markets.



Another important indicator from the jobs report is the Unemployment rate report. It represents the percentage of the eligible work force that is unemployed but is actively seeking employment.

High unemployment levels mean jobless people with no income, which lowers consumer spending. Too low levels are also bad for the economy, because that would push wages up, potentially causing the economy to overheat and inflation to rise. A jobless rate of about 4-6% is considered good for the economy.

The Jobless claims report is published weekly (every Thursday) by the U.S. Department of Labor and counts the people filing to receive unemployment insurance benefits.

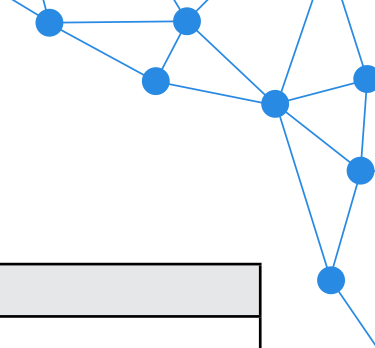
There are two categories within the report. The first is the Initial, which gives data about the people filing for the first time, and the second is the Continuing, which comprises unemployed people who have been receiving unemployment benefits for some time.

Jobless claims report is an important leading indicator on the state of the employment situation. Although the information is highly volatile due to the short period for sampling (one week), it provides quick and timely information about the labor market.

RETAIL SALES

The Retail Sales measure the value of the goods and services purchased during a period of time. The calculation of this indicator is done by sampling information collected from companies that sell goods and services to end consumers. The indicator covers anything from small shops to multinational companies and is of great importance for the GDP calculation, as it makes up about 70% of the total U.S. economic output.

The US agency in charge of this report is the Census Bureau. The Retail Sales report is released monthly and contains data on the total sales for the previous month, the percentage change, and the change in year-over-year sales. Inflation is not adjusted for and the results are quite volatile. Seasonal price changes, or the holiday shopping season can alter the data, so figures could be misleading at times.



The Census Bureau divides the retail sales into 13 categories.

1	Motor vehicle and parts dealers
2	Furniture and home furn. stores
3	Electronics and appliance
4	Building material, garden eq. and supplies dealers
5	Food and beverage stores
6	Health and personal care stores
7	Gasoline stations
8	Clothing and clothing accessories stores
9	Sporting goods, hobby, musical instrument and bookstores
10	General merchandise stores
11	Miscellaneous store retailers
12	Non-store retailers (online shops)
13	Food services and drinking places

The auto and gas sectors tend to fluctuate more than the other sales. Moreover, consumers don't actually have a choice, when it comes to fuel prices. Those are the reasons why the report is presented in two ways: with those two sectors, and without them. The second gives a clearer picture of the consumer sentiment for the period.

Healthy retail sales figures typically mean positive movements in equity markets. They are good news for the shareholders of retail companies, as that means higher earnings. Because of the tight connection between retail sales and GDP, if the monthly figures through the year are strong, then it's likely that the GDP report will be solid as well.

THE BOTTOM LINE

Fundamental analysis is very important for the general understanding of the market we trade. Every asset sooner or later is bound to arrive at its fair price so if you want to keep up with the market moves, you need to understand the fundamentals.



TECHNICAL ANALYSIS

Technical analysis is the other way of analyzing the markets. It does so by examining the price and the volume using historical data. Technical analysts believe that all fundamental factors that could influence the price of a certain asset are already reflected in that price and that in order to predict future moves, one has to look no further than the price action itself.

Technical analysis is based on several underlying assumptions when it comes to evaluating a financial market. The first is that history always repeats itself. Prices move in a cyclical manner, so identifying these cycles and certain features within them can give useful information on what to expect in the future.

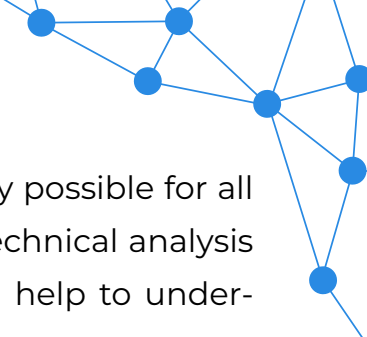
It postulates that prices are trend driven. These trends can be short-, medium-, or long-term, but there will always be a prevailing team, either the bulls or the bears. It is not unusual for the trend to be interrupted by pullbacks (moves in the opposite direction), still a price move that has gained momentum is more likely to continue its path. A slowing price move, on the other hand, is more likely to reverse.

This type of analysis relies heavily on statistics. It attempts to understand the market by looking for different patterns. It focuses on price and volume of the trading asset, rather than financial statements, labor market and inflation.

There are two different approaches when doing technical analysis – top-down and bottom-up. The top-down approach would start from the “big picture” of the asset. A trader would first identify a good trading opportunity on a larger-scale chart and then work his way down to pinpoint the exact entry level for a trade. This approach is often used by short-term traders.

The other way is the bottom-up approach. It involves identifying a good trading opportunity on a small-scale chart, then going up-scale to evaluate the potential of the trade. The bottom-up is mainly used by investors looking for longer-term positions.

Some argue that technical analysis is more a kind of a self-fulfilling prophecy, since it is so widely used, rather than it is analysis, and that technical rules work, because so many people are using them to place their orders.



On the other hand, technical strategies are so diverse, that it is hardly possible for all traders to follow the exact same logic at the exact same moment. Technical analysis has proven its worthiness and, together with fundamental analysis, help to understand and evaluate the financial markets.

TRADING STYLES

Technical analysis is associated with active trading, or short-term trading. Active traders use short-term strategies and seek to open positions that are to be closed in a matter of hours, or minutes. This type of trading is opposed to the long-term, buy-and-hold strategies that passive investors typically use.

There are different trading styles and every trader should choose the one that suites his way of life, personality and goals. It is better to study the differences and make an informed decision, instead of switching from one style to another.

Why are you trading? How much time can you devote to this? How much risk are you willing to take? Will you trade for a living or for a hobby? These are the questions that need to have an answer before you decide what style fits best.


It is not mandatory to stick to just one style, of course. But you must understand them, and you must know how to use them right. That is how you can get the best of all of them.

There are four basic styles of trading.

SCALPING

Scalpers open and close positions within seconds or minutes. They trade minute price fluctuations and their profit target for a single position is small. They usually trade on 1-minute or 5-minute charts and scarcely use any tools.

Scalping decreases the risks associated with having an open position for a longer time. It does not need sophisticated conditions to be met in order to execute a trade, so trading opportunities are considerably frequent.



The scalper must have the proper mindset. In order to be successful, he needs to make very quick decisions and be disciplined.

DAY TRADING

Day traders open and close their positions, as the name suggests, within one day. They usually use 1-hour or 4-hour timeframes and close all their positions by the end of the day.

Day trading requires time to analyze the market and manage the open positions. There are usually plenty of trading opportunities throughout the day, furthermore day traders often trade multiple assets.

Day trading does come with some risk because the positions are kept open for a while. In order to protect them, day traders often use stop-loss and take-profit orders. Some of that risk is mitigated by the fact that, normally, no positions are left open overnight.

SWING TRADING


Swing traders join the price action at the first signs for a reversal of the trend. They usually keep their positions open for a few days, or even weeks, until they reach their profit target or until they are stopped out.

Swing trading needs a volatile market. It needs a trend. A price that is consolidating is a risk to the swing trader. To keep the position going, and to not get closed out at the smallest correction, swing traders use larger stop-loss orders.

Swing positions are usually kept open overnight, so this type of trading is suitable for those who have the patience and the nerve to leave those positions unattended for some time.

POSITION TRADING

Position trading is the long-distance runner in the group. Position traders hold their positions for days, months and even years, and for that they must follow the fundamentals, as well as the technical indications.



Position trading is often considered a synonym for investing. But while a passive investor would typically use a buy-and-hold strategy, position traders certainly plan to sell when their target is reached (sooner or later).

It is most successfully used in markets with well developing trends. Position traders typically open their positions in the beginning of the trend, but only after it has been confirmed and going. They would normally close the position as soon as the trend breaks. This type of trading is not appropriate for too volatile markets.

The position trading provides fewer trading opportunities, compared to the other types. The profit targets can be a few hundred pips or even higher and the trader must have the stomach to see his position swing from profit to loss and back. Position trading requires patience, confidence and knowledge.

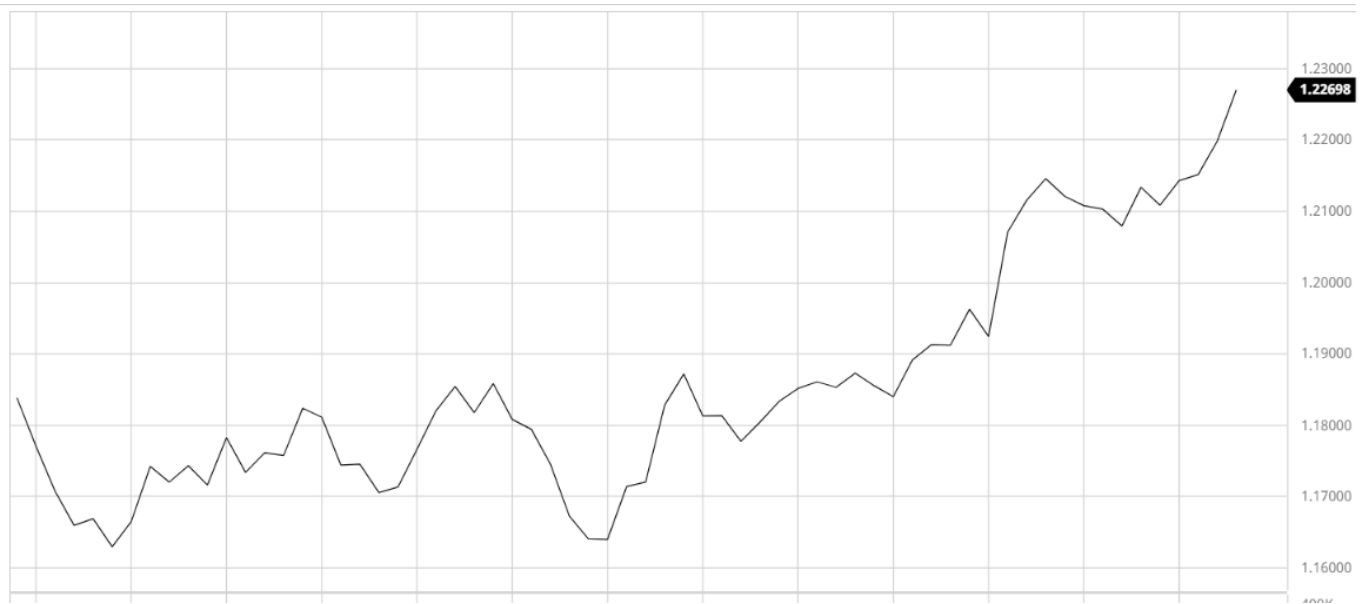
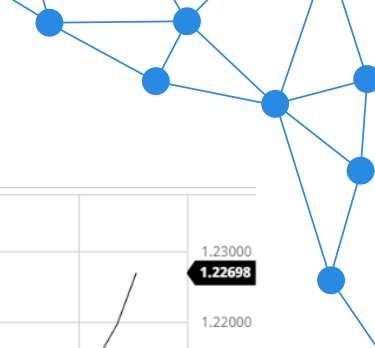
TYPES OF CHARTS

There are different ways to plot the price action on a chart. Although different charts present the same thing, they visualize it in a different way. They can provide a whole lot of price characteristics, or just a clean look. It is also a matter of personal preferences, as so much things on the chart are adjustable.

There are three types of charts to display the price action that are used in technical analysis.

LINE CHART

The simplest one is the line chart. Every period is represented by a dot, that usually denotes the closing price. The dots are connected to form a line.



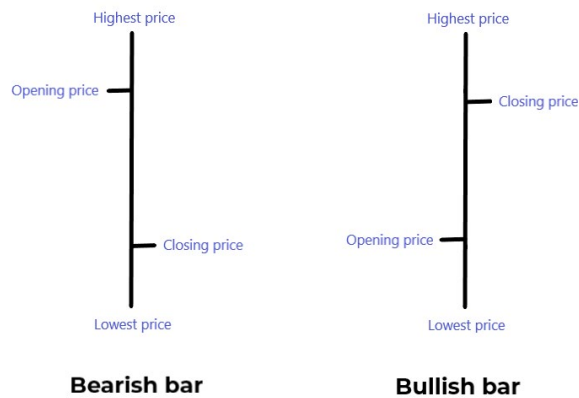
Though it does show the movement of the asset for the period, the information it provides is very limited. It gives a clear “big picture” so it can be used to monitor the trend for a period.

BAR CHART

The bar chart contains a lot more information than the line chart.



It shows the trend but there is also information about the opening and closing prices, as well as the highest and lowest prices for each period. Every period within the chart is represented by one bar.



The more volatile the period, the longer the bar. And the opposite, if the price did not fluctuate that much, the bar will be shorter. The left horizontal line indicates the opening and the right horizontal line – the closing price of the period.

If the opening price is higher than the closing price, the bar is called Bearish bar. If the opening price is lower than the closing price, the bar is Bullish.

A bar can represent a different time period, depending on the bar chart you look at. It can contain the price moves of the asset for a minute, an hour, a day – it is all a matter of choice.

CANDLESTICK CHART

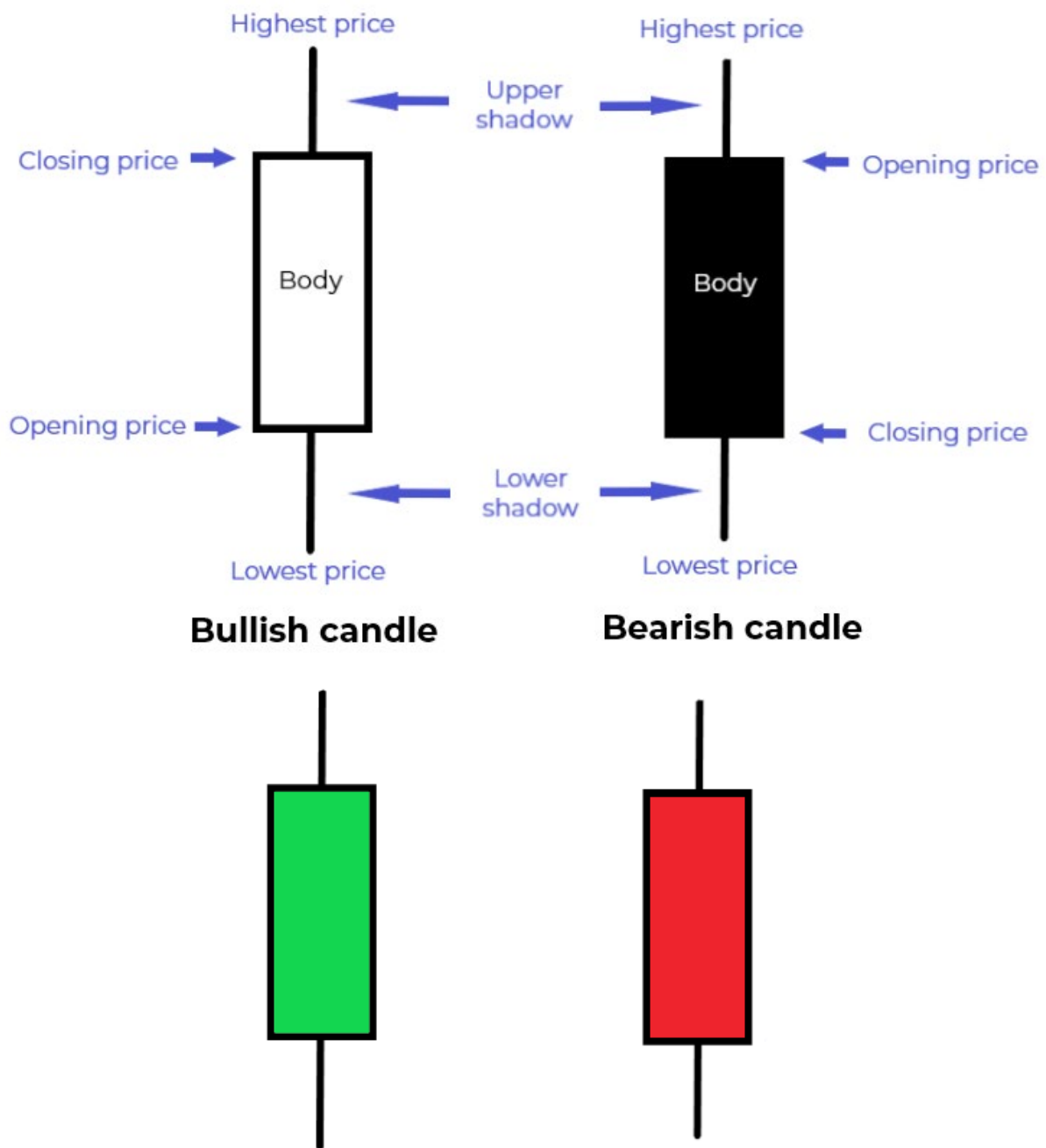
Perhaps the most widely used type of chart is the candlestick chart. It contains the same information as the bar chart but is considered more visual because of the colored and thicker real bodies, which are better at highlighting the difference between the open and the close.



Black and white candles is the standard look of the candlestick charts. Still, for those who fancy the alternative ways, there are more colorful charts.

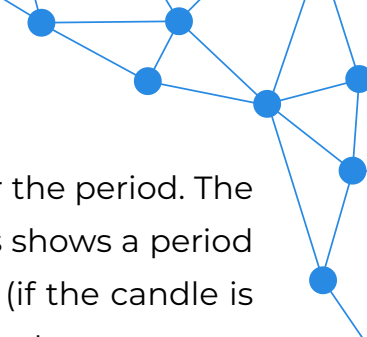


Every period within the chart is represented by one candlestick. It provides information about the opening and closing prices, and the highest and lowest prices for each period, just like the bar. The period that the candle represents is adjustable. It can be 1 minute, 5 hours, or 3 months, the choice is in the traders' hands.



The body (or the real body) marks the range between the open and the close for the period. If the body is white (or green), the candlestick is considered bullish. The bullish candle shows that the price has risen during the period and the opening price is lower than the closing price. The close, in this case, is said to be strong.

The black (or red) body shows that the price has fallen during the period and the opening price is higher than the closing price. The close is said to be weak and the candle is called a bearish candle.



The upper and lower shadows mark the highest and lowest prices for the period. The longer the shadow, the more volatile the price within the period. This shows a period of uncertainty. A long body, on the other hand, shows that the bulls (if the candle is white/green) or the bears (if it is black/red) dominated during the period.

TECHNICAL ANALYSIS TERMS

Looking at the chart we see the price moves up and down, forming all sort of patterns along its path. Technical analysis is about monitoring those seemingly random moves and identifying their cause and outcome.

The trader must learn to look deeper into the chart and read the data that it contains. There is plenty of information in the price action and technical analysis provides the tools to extract and synthesize it.

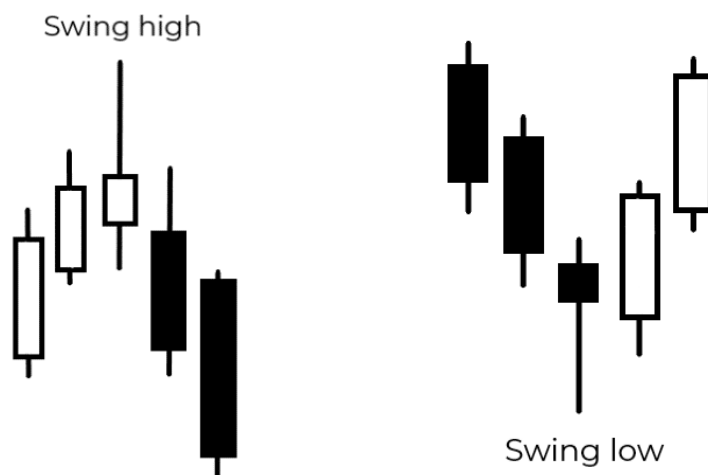
To learn how to read the chart we must start with the basics. The most general terms that technical analysis uses are things like swing high, swing low, trend, trendline, support and resistance level, channel and range.

SWING HIGH AND SWING LOW

As the price moves across the chart up or down, there are points that form tops (the highest point around) and bottoms (the lowest point around). They mark a level where the price changes directions.

The swing high is the highest price level where the bulls bought before the bears took control of the game and brought the price down. It is marked by the highest point of the highest candle and, to be considered a swing high, it needs to have at least two candles on each side that have lower highs.

The swing low is the lowest price level where the bears sold before the bulls came into play and turned the price up. It is marked by the lowest point of the lowest candle and needs to have at least two candles on each side that have higher lows, in order to be considered a swing low.



TREND AND TRENDLINE

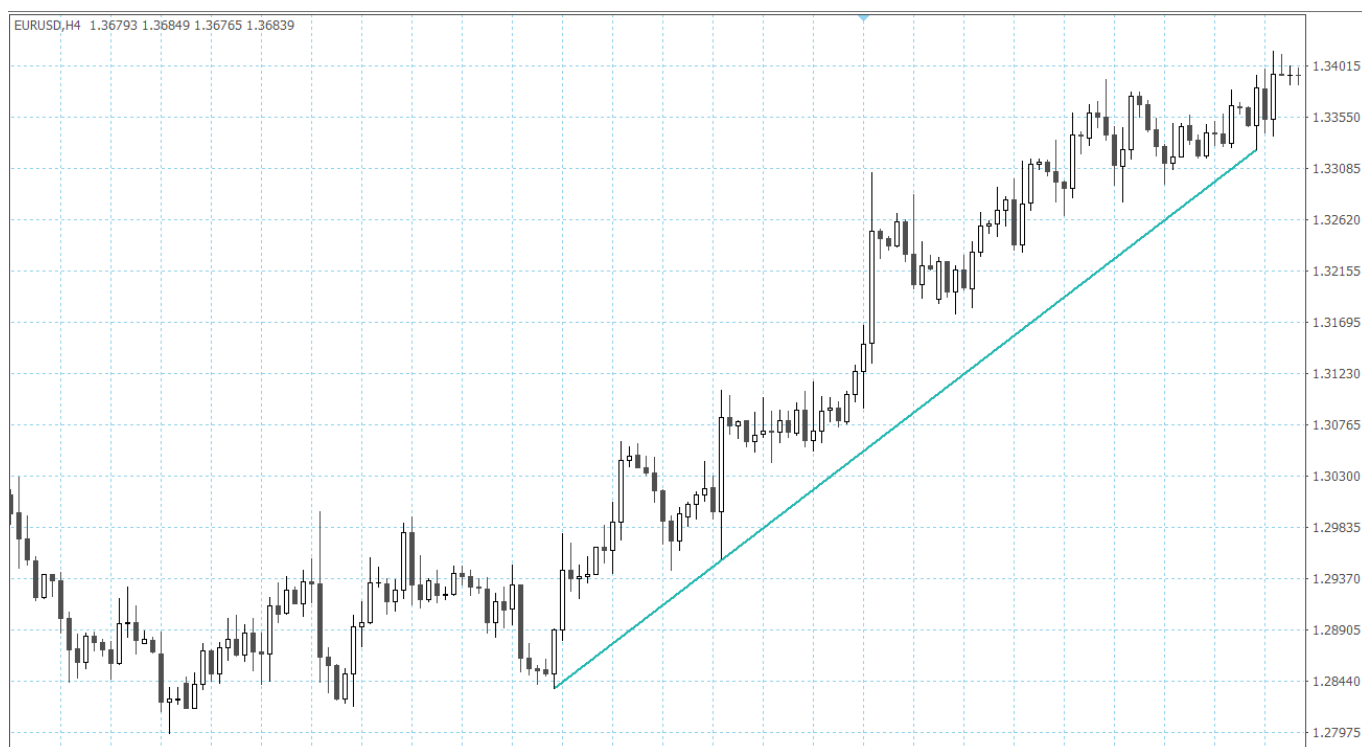
The trend is simply the direction of the current price move. The price can move upwards, downwards or horizontally around the same level.

The trendline is a line that we draw to identify the price direction. It can connect swing highs or swing lows to show us whether the price is going up or down.

UPTREND

The uptrend means an overall increase of the price. Of course, we cannot expect that the price will move in a straight line upwards. There are fluctuations within the trend, called corrections or pullbacks, but the general direction should keep its path up.

The uptrend is marked by higher swing lows and a general rise of the price. We recognize it by drawing a trendline that connects at least two or three swing lows.



While the trend is up, traders assume it will continue to rise, until there are indications of weakening or breaking of the trend.

DOWNTREND

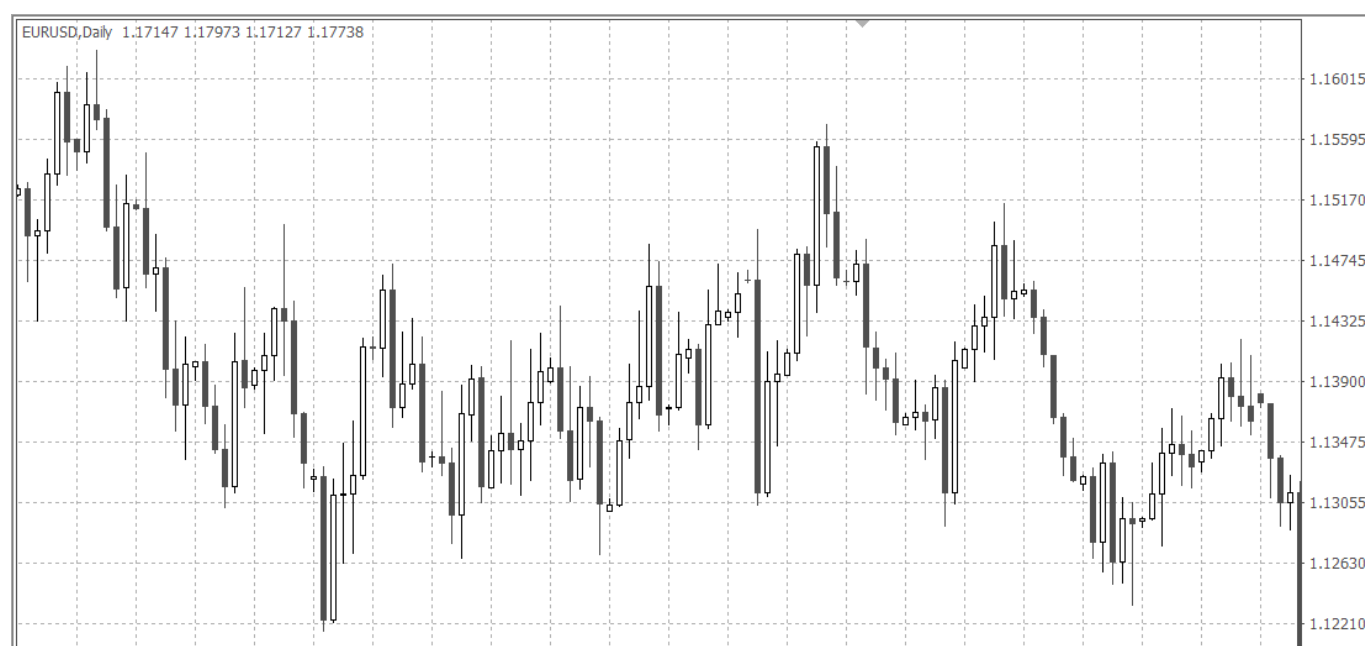
The downtrend is an overall decrease of the price. It is marked by consecutive lower swing highs and a general move downwards. We can draw a trendline connecting at least two or three swing highs to get a clearer picture of the downtrend.



The downtrend is assumed to continue until there are indications that it may be weakening or breaking.

CONSOLIDATION

The consolidation is a period without a clear trend. Prices are moving up and down but stay around the same levels. This is called ranging. The consecutive swing highs are of similar heights and the consecutive swing lows have similar lows.



You can determine the current trend by using different methods. The daily and the weekly charts are commonly used for picking the trend, though it all depends on the trading style. A scalper, for example, would look for a trend on the hourly or even the 30-minute chart, while a day trader would monitor the weekly or daily chart.

PRICE CHANNEL

The price channel is the overall range of movement of the price. It is defined by drawing two parallel lines, one connecting the swing highs of the period, and one connecting the swing lows.



It is a very useful technical tool for confirming whether the ongoing trend is still strong (then the price would oscillate between the channel boundaries) and for identifying breakouts (points where the price breaks outside the price channel).

It would be great if the price moved in a way that all swing highs and lows aligned perfectly for the trader to draw the trendline through them and then to have a clean parallel price channel. But in the real world, things just aren't that perfect. So, to some extent, it is up to the trader to decide the exact position of a trendline or a price channel.

SUPPORT AND RESISTANCE LEVELS

Support and resistance are levels that seem to limit the price from going further. The support level is where the price stops falling and bounces back up. The resistance level is where the price stops rising and heads down.



Sometimes the price breaks the support or resistance line just by little and then returns into the price channel. This is called testing of the level. If the price breaks through one of the levels and doesn't turn back it is likely that it will continue until it reaches another support or resistance level.


One way of identifying levels of support and resistance is by looking at historical data. Analyzing the price action for a longer period can easily give the levels where the price stopped rising or falling. There is good probability that they will act again. However, as those levels might have formed under different circumstances, they may not be valid anymore.

During an uptrend, you could expect that levels of support would hold testing, while resistance levels might be broken. This is because of the buying pressure that the uptrend applies on the resistance lines. It is the opposite for a downtrend.

When a support level is breached, it becomes a resistance level (and the other way around). The lows and highs formed during the development of one trend, serve to determine the levels of support and resistance for the new trend in the opposite direction. The logic is that the same factors, that led the market to encounter difficulties in breaking the level, may act again.



Support and resistance lines are more than just static horizontal levels. Trendlines and



different technical indicators serve as dynamic support and resistance lines for the price action.

Round numbers are a very interesting price barrier. Traders tend to prefer these levels for placing their pending orders. As more and more people choose the same round number, it becomes a noticeable level of support or resistance. Although this is more of a psychological phenomenon, rather than an objective barrier, round numbers are something a trader needs to comply with.

The longer a level has withstood testing the stronger support or resistance it is. This is because with time more and more people notice the level and use it to put their pending orders around it.

Weak levels of support or resistance are more easily broken, while major levels of support or resistance are more likely to turn the market back in the opposite direction.

TECHNICAL ANALYSIS INDICATORS

Technical indicators are mathematical calculations, based on price or volume, that are used to evaluate the short-term state of the market and to indicate its possible development.

There are indicators that use the same chart scale as the price and are plotted together with the price action. They give a different perspective of the price movements. Other indicators oscillate between a local minimum and maximum. They provide additional data about the development of the price.

There are hundreds of indicators. Traders must choose those that work best for them and familiarize themselves with how they work. A very good option is to combine several indicators and use them together to provide good trading signals.

TREND-FOLLOWING INDICATORS

The trend-following indicators are used to identify the existence of a trend and measure its strength, direction and development via some form of price averaging.

Generally, if the price is above the average the trend is considered bullish, and if it is

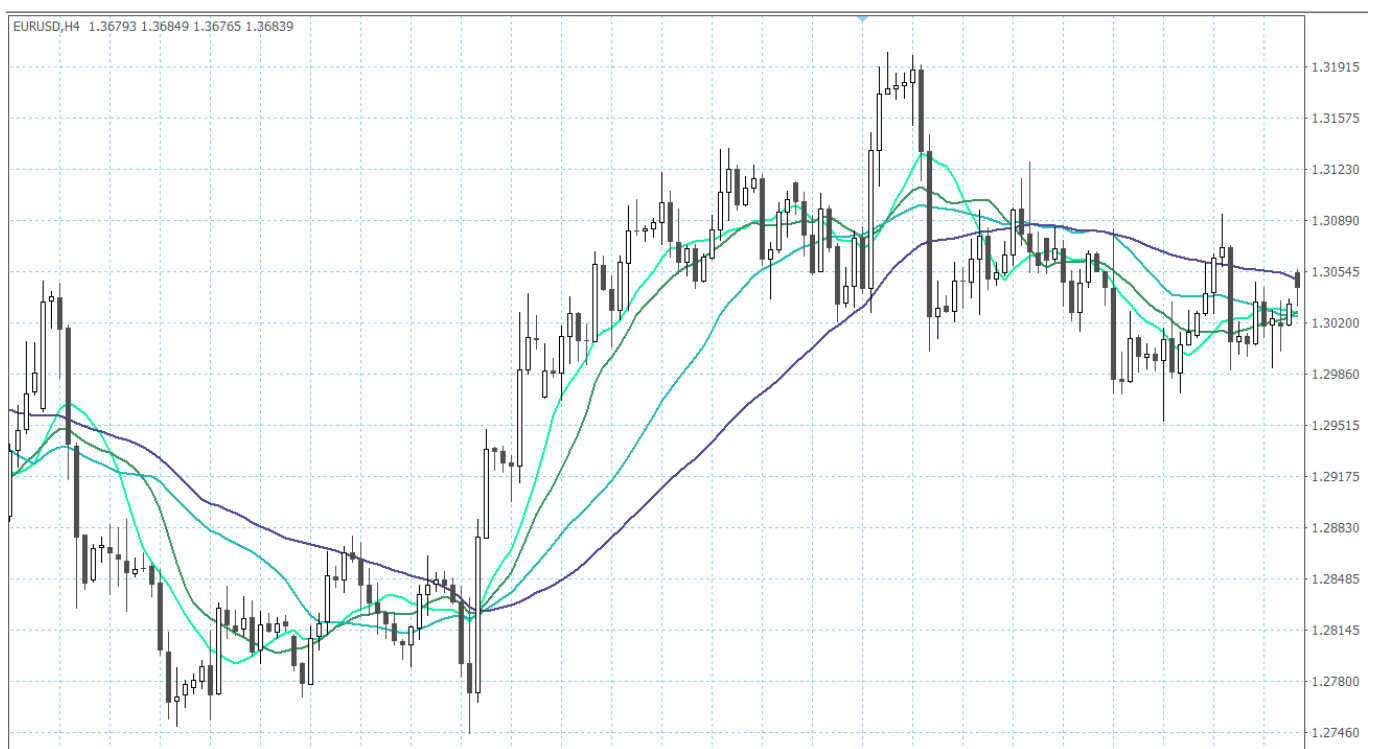
below it, it is considered bearish.

Here are some of the most common trend indicators.

MOVING AVERAGES

The moving average (MA) is one of the simplest, yet most widely used trend-following indicators. It aims to smooth the price action, by eliminating random spikes, this way giving a better view of the overall trend. MAs show the trend as it has developed so far, without giving any predictions about the future. This task is left to the trader, who can make his decision based on the MA's results.

There are different types of MAs. Depending on the calculated periods, they can be 5-period, 10-period, 20-period, 50-period, 200-period, or whatever other period the trader needs.



Depending on the calculation method, the two most commonly used types of MA are the Simple Moving Average (SMA) and the Exponential Moving Average (EMA).



SIMPLE MOVING AVERAGE (SMA)

As the name suggests, this is the simplest type of MA. It is calculated (if we take the 5-period MA) by adding up the closing prices of the last 5 periods from the chart and dividing that by 5. This gives us the first point of the MA's line (from right to left). We then move one period back and once again add up 5 periods and divide them by 5. This gives us the second point of the MA's line. And so on.

The longer the period, the smoother the moving average. SMAs with longer periods react less to the price changes. They provide a broader view of the market and show the general trend.

Plotting two or more SMAs with different periods helps assess the current trend. We can assume that an uptrend is still going strong if the faster SMA, which is typically closer to the price action, is higher than the slower SMA. And the opposite for a downtrend. If the faster SMA is below the slower one, the downtrend still has momentum.

EXPONENTIAL MOVING AVERAGE (EMA)

The Exponential moving average (EMA) is calculated by giving more weight to the most recent periods. This eliminates one important drawback of SMAs. A sporadic price move, like the release of some surprising news, would change the SMA (especially the fast ones) quite a lot. It may give out a wrong signal that the trend is ending, for example.

It makes sense to put more value on the recent periods. The EMA is more sensitive to the most recent price changes and can follow the price more closely. It is much more important to know what traders are doing now, rather than what they were doing a week ago.

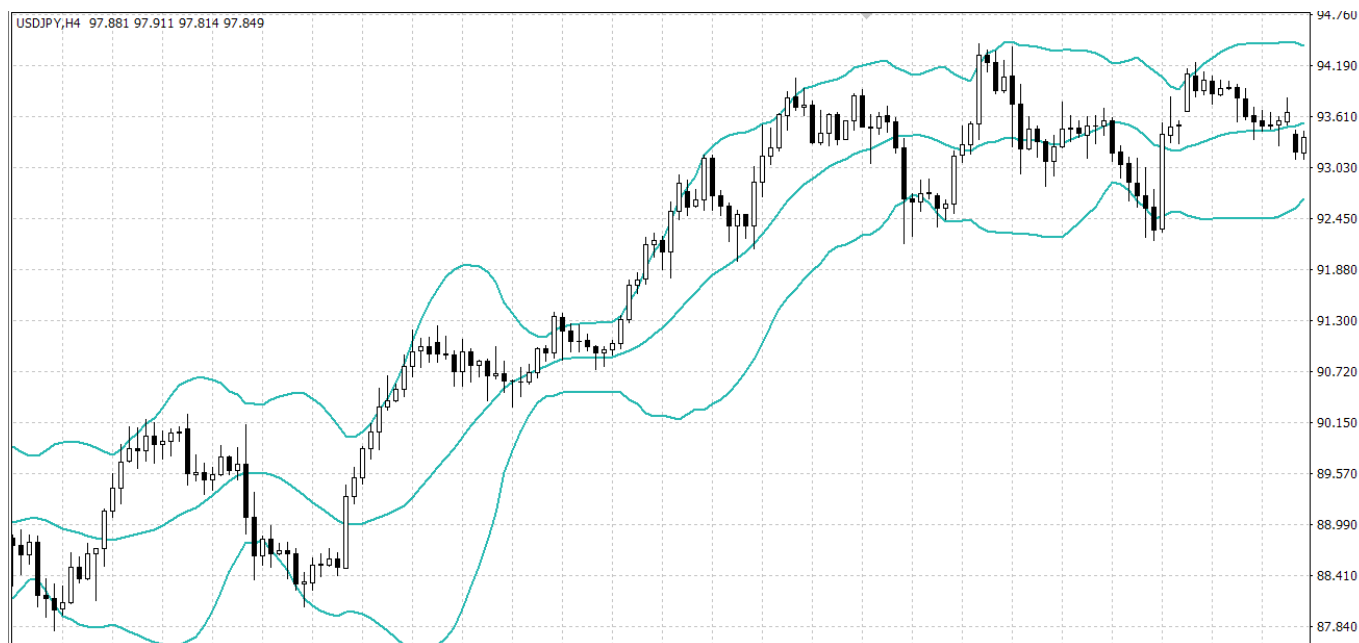


BOLLINGER BANDS

The Bollinger bands are used to measure the market volatility. They help determine oversold and overbought areas and confirm divergencies between the price and the indicators.

It consists of three lines (bands) plotted on the price chart. The middle one is usually a SMA with a period of 20 days. It serves as a base for the calculation of the upper and lower bands. They are usually adjusted to 2 standard deviations (above and below) from the SMA, though this is a matter of preference.

The bands tighten when the price volatility is low. This indicates that a sharp price move in any direction is possible. If the price is very volatile, the bands widen. This might mean that a trend is ending.



When the price moves closer to the upper band, the currency pair is becoming overbought, and when it moves closer to the lower band, the currency pair is becoming oversold.

AVERAGE DIRECTIONAL INDEX (ADX)


The ADX is used to measure the strength of the trend. It does not show whether the trend is bullish or bearish, but it can indicate when a ranging market is beginning to develop a trend.

ADX fluctuates between 0 and 100. Low readings indicate a weak trend (or a ranging market), and high readings indicate a strong trend. No matter whether the trend is upwards or downwards, higher ADX levels show that the trend has momentum. Lowering levels mean that the current trend is losing steam.

PIVOT POINTS

Pivot points are a popular method for identifying potential levels of support and resistance. They show levels that are likely to turn the price the other way and are a tool of the short-term trading.

The pivot points are a good way of plotting support and resistance levels because they



are objective. They give a precise price level, unlike some other methods that could be subject to interpretations. Furthermore, pivot points are used by many traders who do the calculations (usually) using the same method.

The pivot points are calculated using the last trading session's open, high, low, and close. Since forex is a 24-hour market, most traders use the New York closing time (5:00 p.m. EST) as the previous day's close.

First, we need to calculate the Central Pivot Point (PP):

$$\text{Central Pivot Point (PP)} = (\text{High} + \text{Low} + \text{Close}) / 3$$

The PP can be helpful when analyzing the price action. If the quotes are above the central pivot, the market is considered bullish. If the quotes are below the central pivot, it is rather bearish.

After we've calculated the PP, we can use it as a reference to calculate the levels of support and resistance:

First level of support and resistance:

$$\text{Support 1 (S1)} = (\text{PP} \times 2) - \text{High}$$

$$\text{Resistance 1 (R1)} = (\text{PP} \times 2) - \text{Low}$$

Second level of support and resistance:

$$\text{Support 2 (S2)} = \text{PP} - (\text{High} - \text{Low})$$

$$\text{Resistance 2 (R2)} = \text{PP} + (\text{High} - \text{Low})$$

Third level of support and resistance:

$$\text{Support 3 (S3)} = \text{Low} - 2 \times (\text{High} - \text{PP})$$

$$\text{Resistance 3 (R3)} = \text{High} + 2 \times (\text{PP} - \text{Low})$$

There are also intermediate levels, or mini levels, that can further be calculated.

Of course, you do not need to do this on your own. There are charting tools and calculators that can do the math for you in a matter of seconds.



FIBONACCI NUMBERS

The Fibonacci numbers are a sequence in which each successive number is the sum of the previous two. It was discovered by the famous Italian mathematician Leonardo Fibonacci, and as it turned out, the ratios derived from this sequence describe the natural proportions of quite a lot of things in the Universe.

Remarkably, Fibonacci ratios can be used in the analysis of the price action as well, serving as possible levels of support and resistance.

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987

This sequence of numbers has many interesting relations. The ratio of any number (excluding the first few) to the next is 0.618 and the ratio of any number (excluding the first few) to the previous is 1.618. This is also called the Golden Ratio and is considered the mathematical word for beauty.

We can calculate the following ratios that are important:

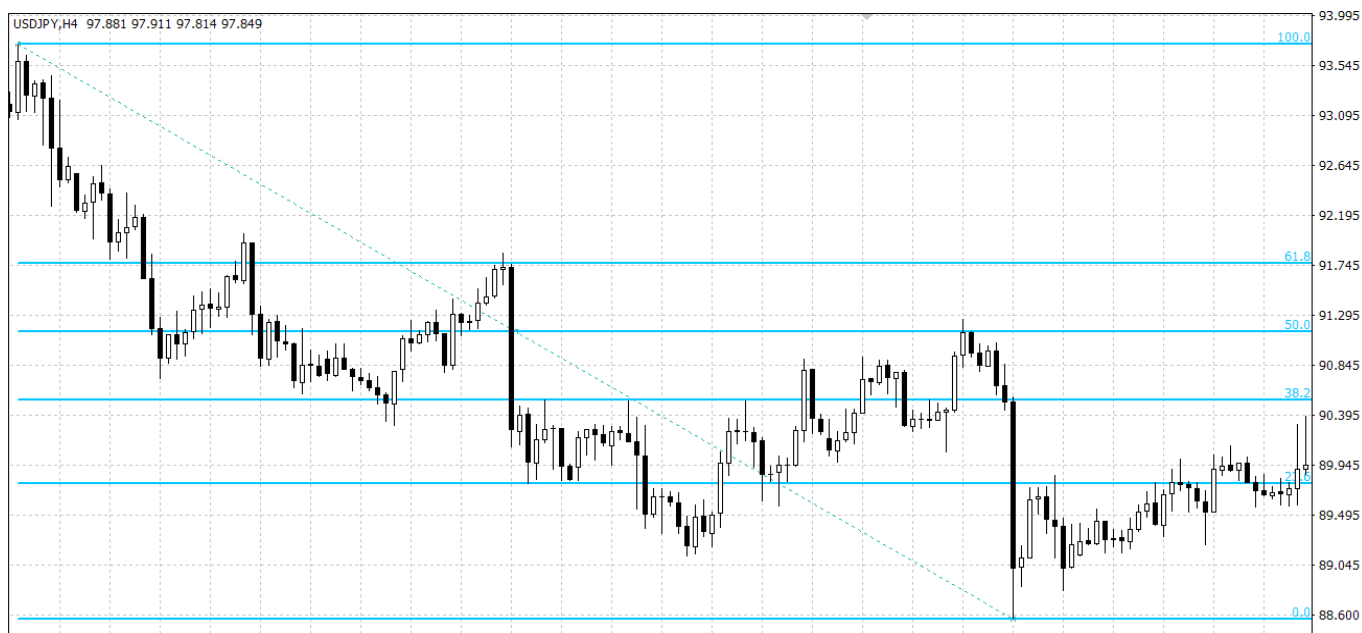
Fibonacci Retracement Levels – 0.236, 0.382, 0.5, 0.618, 0.764

They can also be expressed as a percentage:

Fibonacci Retracement Levels – 23.6 %, 38.2 %, 50 %, 61.8 %, 76.4 %

Although 0.5 (or 50 %) is not a part of the Fibonacci sequence it is a widely used Fibonacci level.

The Fibonacci retracement levels are plotted between two extreme points on the chart as horizontal lines. We must find the major swing lows and major swing highs on the chart. After that, we calculate the main Fibonacci levels.



The Fibonacci retracements are used as support and resistance levels. It could be expected that the price moves will change direction around them. In theory, after the price begins a new trend direction, it will retrace back to a previous price level (Fibonacci level) before resuming in the direction of its new trend.

It is not necessary to calculate these numbers yourself, as you can find a Fibonacci tool in any charting software.


OSCILLATORS

The Oscillators are technical indicators that oscillate between a local minimum and maximum. They help detect oversold and overbought conditions.

Here are a few of the most common oscillators.

RELATIVE STRENGTH INDEX (RSI)

This oscillator gauges the strength of the current market. It has a minimum value of 0 and a maximum value of 100. Low readings indicate an oversold market and a possible increase of the price, while high values mark an overbought market and a possible decline of the price.



Another way to use the RSI is to find divergences. When the indicator is moving opposite to the price, this shows that the trend is weakening, and a possible trend reversal could be expected.

COMMODITY CHANNEL INDEX (CCI)

The CCI helps to find cyclical turns and trend reversals in the price. It measures the current price related to an average price for a certain period. The CCI is used to identify oversold and overbought levels.

The CCI was originally created for the needs of commodity markets but is now used for all kinds of financial markets, as all are subject to some form of cyclic development. The CCI values fluctuate above and below zero. Values high above zero mean that the price is above the average price, indicating an overbought market. Values below the zero line mean that the current price is lower than the average price for the period and that shows an oversold market.

MOVING AVERAGE CONVERGENCE DIVERGENCE (MACD)

The MACD indicates changes in the strength, direction, momentum and duration of the trend. It consists of two moving averages. The first one is the MACD line and the second is the signal line.

The default calculation for the MACD line is subtracting the 26-period EMA from the 12-period EMA. The signal line is a 9-period EMA of the MACD line.

The MACD line can have positive and negative values. If, on the price chart, the 12-period EMA is above the 26-period EMA, the MACD line has a positive value. And the opposite, if the 12-period EMA is below the 26-period EMA, the MACD line is negative in value. The signal line represents a smoother version of the MACD line.

MACD is often displayed with a histogram, which consists of lines or bars stretching up or down from the base line (the zero-value line). It shows the difference between the MACD line and the signal line. The closer those are, the smaller the histogram gets. This is called convergence. The further away from each other (the MACD and the sig-



nal line), the larger the histogram. This is called divergence.

AVERAGE TRUE RANGE (ATR)

The ATR is an indicator that measures the volatility of the price. It shows an averaged value of the price fluctuations for a period of time.

In order to calculate the value of the ATR we need to find the True Range. To do that, we subtract the current low from the current high, then we take the absolute value of the difference between the current high and the previous close, last we take the absolute value of the difference between the current low and the previous close.

The largest of the three numbers is the True Range for this period. Then we calculate a Moving Average of the True Range to get the ATR line.

The higher the ATR value, the more volatile the market. Low ATR values, on the other hand, point to low volatility. The indicator does not indicate the direction of a trend, just the degree of price volatility.


VOLUME INDICATORS

The Volume indicators measure the strength of a trend or confirm a trend direction by some form of averaging of the volume. The volume is a very important indicator in forex trading. It can show the significance of a market move.

Volume refers to the number of contracts (or standard lots) that were transacted, regardless of whether it took 1 or 100 trades for that. But in a decentralized market, such as the FX market, it is not possible to track the entire volume everywhere in the market in terms of standard lots.

Still, every market exchange tracks its trading volume and provides volume data to its users. They do so by the so-called tick volumes. The ticks show the number of trades, or in other words, the number of changes in the price, for a period of time.

This is a limited view of the big picture, but because of the high correlation between



volume and tick volume, it is representative enough.

Tick volume generally tends to be higher near the market's opening and closing hours, and on Mondays and Fridays. It tends to be lower at lunchtime and before holidays.

VOLUMES

The Volumes indicator is a histogram that shows the number of ticks for a certain period of time. The bars (or lines) usually use the same timeframe as the price chart, so one bar indicates the number of ticks that formed one candlestick.

The bar is marked with a color, representing its difference from the previous one. If the bar is green, this shows that the tick volume has risen, and if it is red, the tick volume has decreased.

The Volumes indicator can be used to evaluate the significance of a price move. The larger the volume, the more significant the price move. And the opposite. A price move accompanied by small volume can be considered not as significant.

MONEY FLOW INDEX (MFI)

The Money Flow Index is similar to the RSI, but it incorporates volume, as well as price data. The MFI is used to identify overbought and oversold levels and its values are plotted between 0 and 100.

High levels of the index show overbought conditions, while low values indicate oversold conditions.

The MFI is used to find divergencies between the indicator and the price. If they move in opposite directions, this signals a possible reversal in the trend.

All indicators can be useful by themselves, but the best results are achieved when they are used in combinations. It is reasonable to pick indicators that give a different evaluation of the price action so that you get the best of what technical analysis can offer.

CANDLESTICK PATTERNS

Patterns are an important concept in technical analysis. They implement the basic idea that history repeats itself. There are patterns comprised of just a few candles, as well as others, formed at a larger scale. They can indicate a change in the price direction or confirm the continuation of the present trend.

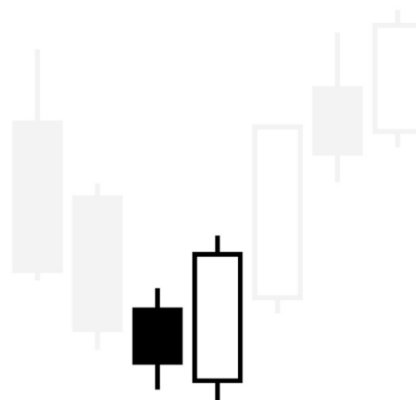
Candlesticks patterns are certain arrangements of candles that can indicate a change in the trend. Both the bodies and the shadows are meaningful for the pattern. They mark the reversal of the trend or a period of uncertainty and are accordingly called reversal patterns and continuation patterns.

There are many patterns. We can generally separate them into bullish and bearish patterns. Bullish patterns indicate that the price is likely to rise, while bearish patterns indicate that the price is likely to fall.

No pattern works all the time. They show tendencies in the price movement and they do not guarantee anything.

BULLISH ENGULFING PATTERN

This reversal pattern forms when a candlestick with a white body completely covers (engulfs) the black candlestick of the previous period. The market should have a clear downtrend before the pattern forms. Shadows of the previous candlestick may not be covered.

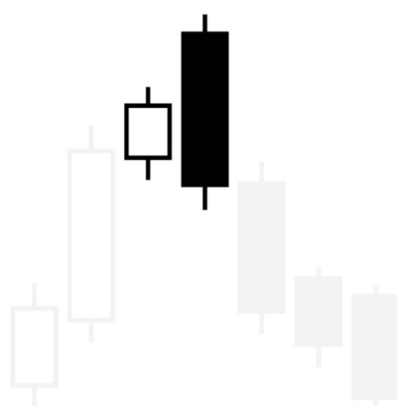


BULLISH ENGULFING

The Bullish Engulfing pattern indicates that the buyers outnumber the sellers and a reversal in the trend is possible.

BEARISH ENGULFING PATTERN

This reversal pattern forms when a candlestick with a black body completely covers (engulfs) the white candlestick of the previous period. The market should have a clear uptrend before the pattern forms. Shadows of the previous candlestick may not be covered.

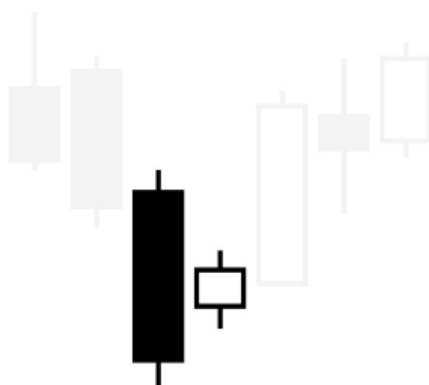


BEARISH ENGULFING

A Bearish Engulfing pattern forms when the sellers outnumber the buyers. It indicates that sellers are now in control and that the price could start to decline.

BULLISH HARAMI

The Bullish Harami is a reversal pattern and consists of a candlestick with a big black body followed by a candlestick with a small white body, completely covered by the first. The direction of the trend is down.

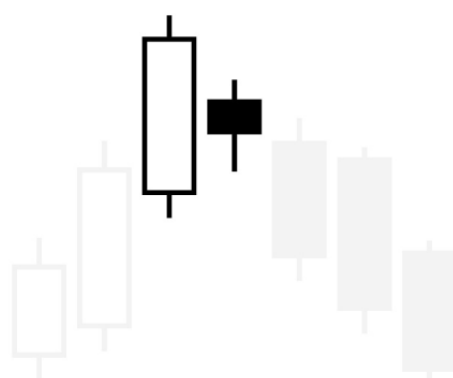


BULLISH HARAMI

The Bullish Harami shows that the trend is pausing. It is a signal that indecision and uncertainty is causing the trend to lose momentum. The next candle is of importance too. If it is bullish again and there is a break of the high, this is good indication that the trend might be changing.

BEARISH HARAMI

The Bearish Harami is a reversal pattern and has a candlestick with a big white body followed by a candlestick with a small black body, completely covered by the first. The direction of the trend is up.

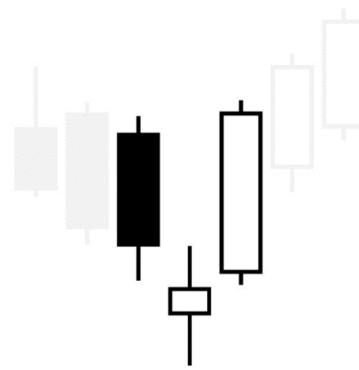


BEARISH HARAMI

The Bearish Harami shows that the trend is pausing. It indicates that the buyers failed to push the price higher and that sellers may be taking control. If the next candle is bearish again and there is a break of the low, this is good indication that the trend might be changing.

MORNING STAR

The bullish Morning Star is a reversal pattern and consists of three candlesticks. The first has a long black body, the second (the star) has a little body (white or black), which is lower than the previous body. The third candlestick has a large white body, which opens above the close of the preceding period and at a level close to that of the first black candlestick.

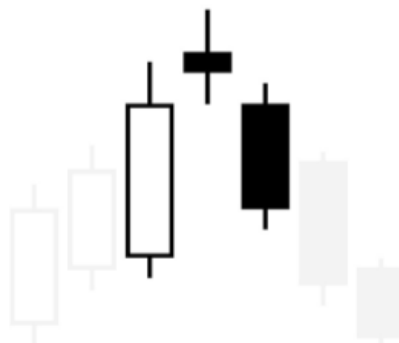


MORNING STAR

The star indicates weakness as the sellers were not able to drive the close much lower than the close of the previous period. This weakness is confirmed by the third candlestick, which must close well into the body of the first candlestick or even beyond it. The formation of this pattern is a possible signal that the market goes from bearish to bullish trend and usually appears when the market reaches a bottom.

EVENING STAR

This bearish reversal pattern consists of three candlesticks. The first has long white body, the second (the star) has a small body (black or white) which is higher than the body of the white candle, and the third has a long black body at the levels of the first.



EVENING STAR

The Evening Star indicates weakness. Although buyers pushed the price higher, sellers were strong enough to bring it down. This bull weakness is confirmed by the third candlestick, which must close well into the body of the first candlestick or even beyond it. This pattern signals a possible reversal of the uptrend into a downtrend and marks a peak in the market.

HAMMER

The Hammer is a candlestick with a small body and a large lower shadow. This is a reversal pattern. The size of the shadow should be at least twice the size of the body, and the upper shadow should be very small or missing. The body can be white or black. The candlestick must appear in a downtrend.



This is a sign for a bottom forming. It shows that although the bears pushed the price lower than the previous candle, the bulls managed to pull it up and close near the opening. The sharp rebound from the low means rejection of that price as the bears are losing control and the bulls are gaining momentum.

SHOOTING STAR

The Shooting Star is a candlestick with a small body and a large upper shadow. This is a reversal pattern. The size of the shadow should be at least twice the size of the body, and the lower shadow should be very small or missing. The body can be black or white. The candlestick must appear in an uptrend.



This pattern shows that despite the sharp move that led the price higher than the previous period, enough selling appeared and pushed the price down to close near the opening level. This signals the possible end of the bullish trend and a beginning of a bearish trend.

THREE WHITE SOLDIERS

The bullish Three White Soldiers pattern consists of three consecutive long-bodied white candlesticks that open within the previous candle's real body and close above the previous candle's high. The upper and lower shadows should be small.



THREE WHITE SOLDERS

This is a strong reversal pattern. It shows the bulls are buying hard and the downtrend is weakening. It shows a possible end of the bears' reign and a beginning of the bulls' time.

THREE BLACK CROWS

The Three Black Crows pattern consists of three consecutive long-bodied candles that open within the real body of the previous candle and close lower than the previous candle. The upper and lower shadows should be small.

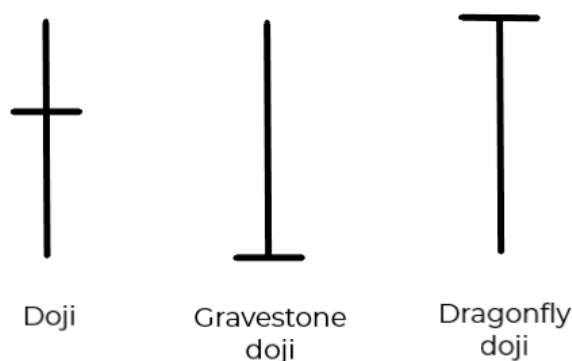


THREE BLACK CROWS

This is a strong reversal pattern. It indicates weakening in the uptrend as sellers are in control for three consecutive periods. It marks the possible end of an uptrend and a start of a downtrend.

DOJI

The Doji is a candlestick that has very small or flat body. Depending on its shadows, the doji can be several types.



The standard Doji, or long-legged Doji, looks like a cross, with shadows extending both ways. It shows great indecision in the period. Trading was very active, the price was pushed high up and low down but, in the end, closed at, or very near, the opening. This candle can appear in both uptrend and downtrend.

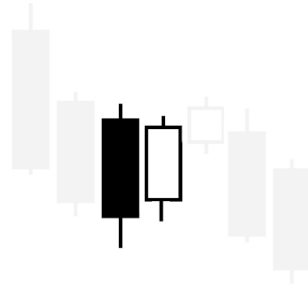
The gravestone Doji opens at its lowest point. Bulls pushed the price up, but bears resisted and took it down to close at the starting point. This candle usually appears in an uptrend and may mark its ending.

The dragonfly Doji is opposite to the gravestone. The candle opens at its highest point. Sellers managed to push the price low, but then the buyers took control and returned the price back to square one. The dragonfly Doji usually appears in a downtrend and indicates a possible turn upwards.

Doji candles are interesting because they show a period where neither the bulls, nor the bears had the upper hand. Doji can form at the test of a support or a resistance level. It does not point at what the outcome will be, but it does mark a potential change.

INSIDE BAR

The Inside Bar is a continuation pattern. It can appear in both uptrend and downtrend and consists of two candles. If the trend is going down, the first candle of the Inside Bar is black. The second is white, with a lower high than the black candle's high, and a higher low than the black candle's low.



INSIDE BAR

The Inside Bar pattern shows indecision in the market. Neither the bears, nor the bulls were willing to push the price in some direction. This looks a bit like a reversal-trend situation, but the typical outcome is continuation of the trend, sometimes with a big move.

There are dozens more patterns that can be useful to traders. With time and with practice you will add more and more to your arsenal. They provide a clear advantage that should not be ignored.

CHART PATTERNS

The chart pattern is a visual formation or shape within the price chart that gives clues to the expected direction of the next market move and its target levels. Chart pattern are significant only when there is a clear trend. You cannot change the direction of something that has no direction.

The time it takes for a pattern to form is important. The longer it takes and the larger the price movement within the pattern, the greater the potential of the subsequent price move.

There are two basic types of chart patterns – reversal and continuation. The first type indicates that we can expect a change in the direction of the current price trend. The

second shows that the market is just pausing before the prevailing trend continues. The formation of a continuation pattern takes much less time than the formation of a reversal pattern.

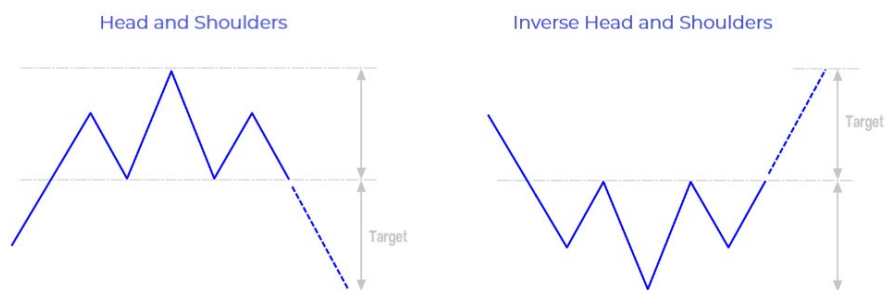
REVERSAL PATTERNS

Reversal patterns signify that the bulls (in an uptrend) or the bears (in a downtrend) are getting exhausted. The pattern itself is the time when the two teams are more or less equally active and then, when the pattern is fully developed, the other team (possibly) takes control and leads the price to bearish/bullish territory.

There are many patterns, but we will examine the most significant of them all.

HEAD AND SHOULDERS / INVERSE HEAD AND SHOULDERS

The Head and Shoulders pattern is a reversal pattern. There are two versions, depending on the price trend. If the current trend is up, the pattern is called Head and Shoulders, and if the current trend is down, it is Inverse Head and Shoulders.



They develop exactly the same way, so we'll just take a look at the first of them.

The Head and Shoulders pattern consists of three peaks, of which the middle one is the highest (this is the head) and the other two are lower and similar in heights (the shoulders).

This pattern forms after a long rise, when the bulls begin to lose steam. The price makes a high, but sellers appear and turn the price down (forming the left shoulder). Bulls take the price up to a new extreme but bears once again take control (forming the head). Bulls return to the market one last time, but sellers are determined and strong and lead the price down, forming the right shoulder. Once the level connecting

the two formed lows (the so-called neckline) is breached, the pattern is confirmed.

This is one of the most reliable reversal patterns. Its significance may be reinforced by some additional factors.

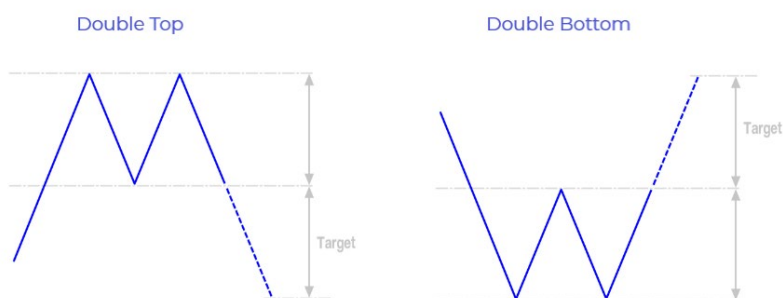
The trading volume plays an important role in the formation of the Head and Shoulders pattern. It should increase during the formation of the left shoulder and decrease during the formation of the head and the right shoulder. Before the break below the support, the volume should increase sharply.

It is also worth observing whether the steepness of the ascent declines. If the left side of the first shoulder is steeper than that of the head, and the left side of the head is steeper than that of the second shoulder, it means that the bulls are getting weaker. All this shows that the power of the buyers is decreasing, and that the sellers are taking control and that the reversal is the most probable outcome.

The Head and Shoulders pattern works the same way in a downtrend. When it signifies the transit from bearish to bullish market, the pattern is called Inverse Head and Shoulders.

DOUBLE TOP / DOUBLE BOTTOM

The Double Top and Double Bottom are reversal patterns. Double Top develops in an uptrend and Double Bottom – in a downtrend.



As they form exactly the same way, we will just examine the Double Top pattern.

The pattern comprises of two highs and one low between them. The two peaks are of similar height and the pullback between them is moderate. The level where the pullback stops dropping is called Neckline.

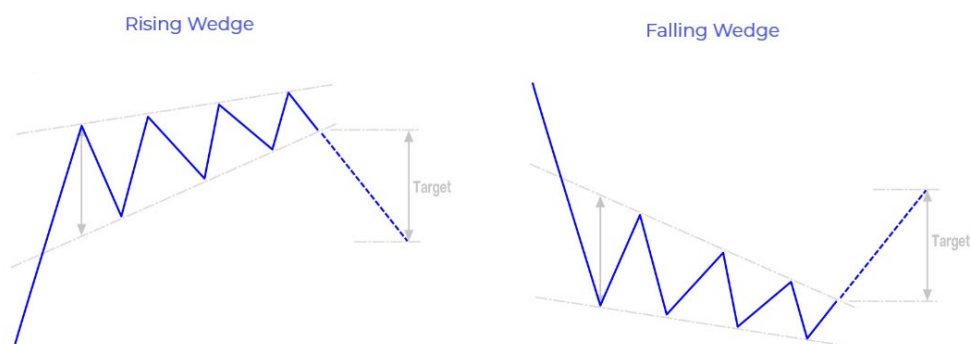
The second top is the same or even lower than the first top. This shows that the bulls were not strong enough to reach higher than the first top. The pattern is completed when the price, after it has formed the second top, breaches the neckline.

A good indicator that the pattern is strong is the volume. If the volume decreases during the formation of the second top, this is good indication that the price might change directions.

RISING WEDGE / FALLING WEDGE

The Wedge is a reversal pattern formed by drawing two trendlines, one connecting the highs and one – the lows, forming a kind of a funnel. The Rising Wedge develops in an uptrend and the trendlines that shape the pattern are usually ascending. The lower trendline, that connects the lows is steeper than the one connecting the highs.

The Falling Wedge develops in a downtrend and is exactly opposite to the Rising Wedge.



The Rising Wedge has to have at least three highs. It is sometimes falsely considered a continuation pattern. As each new high is higher than the previous it looks like the trend is still going strong.

But the selling after each peak and the strong resistance line that forms show that buyers are having difficulties going further up. The narrowing of the funnel formed by the two trendlines indicates that the strength of the bulls is weakening. Bull pressure begins to fade, and a breakout of the support line confirms the pattern. A strong move downwards could be expected afterwards.

The volume is most likely to fall during the formation of the Wedge.

CONTINUATION PATTERNS

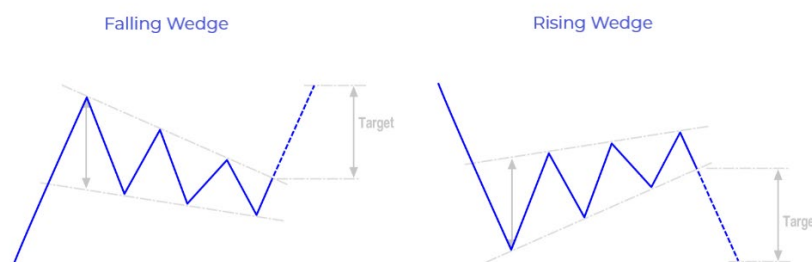
These are patterns that indicate the continuation of the preceding trend. They are often referred to as Consolidation patterns because they develop during the time the market takes a short break while the two teams are testing each other. After the pattern forms, the trend resumes.

There are many continuation patterns, but we'll just take a look at the most common.

FALLING WEDGE / RISING WEDGE

These are pretty much the same formations as the Rising and Falling Wedges that indicate a reversal. Just a few features mean the difference between reversal and continuation.

The Wedge pattern signals a continuation of the trend when the Falling Wedge develops in an uptrend and the Rising Wedge develops in a downtrend.

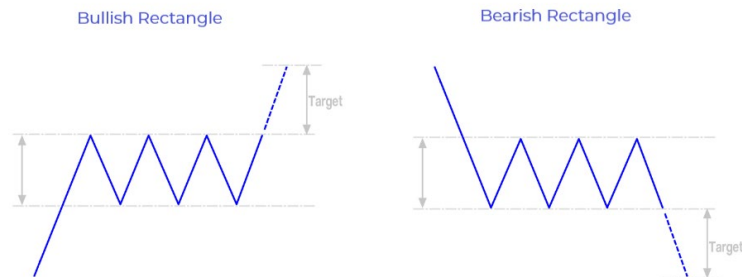


The Falling Wedge consists of two descending trendlines, one connecting the tops and one connecting the bottoms of the pattern. The upper trendline (the resistance) is steeper than the lower (the support). Each consecutive high within the pattern is lower than the previous.

This indicates that although there are sellers to take the price down, they are not strong enough. This is evident from the fact that the support line is not as steep as the resistance line, meaning the bears are failing in bringing the price further down. After the short pause, the bulls break the resistance line and push the price upwards.

RECTANGLE

The bullish and bearish Rectangles are formations confined between two horizontal trendlines. There should be at least two or three highs and lows that form the resistance and support lines. The two patterns develop in identical manner, so we'll just examine the bullish Rectangle.

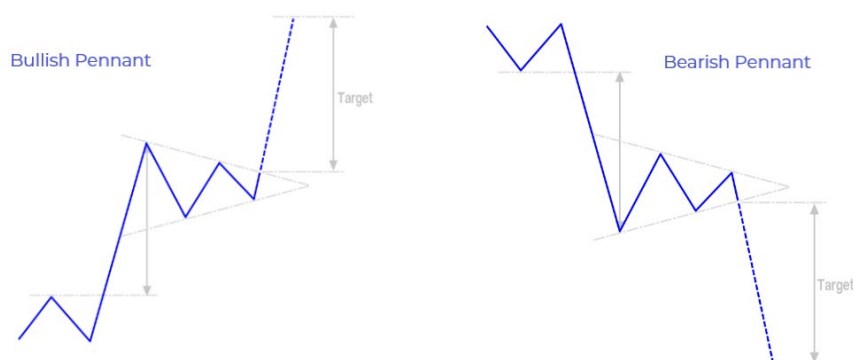


The current trend is up when a resistance level stops the price and it bounces back. A period of consolidation follows, where the price touches the same support and resistance line several times. This means the battle is on between bulls and bears.

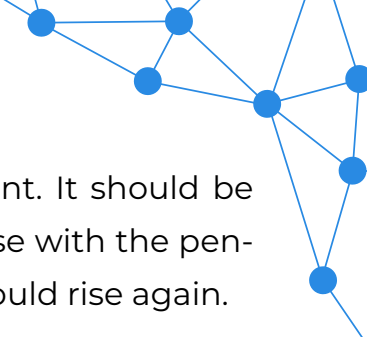
The volume typically falls as the pattern advances. When the price breaches the resistance level the pattern is confirmed, and the trend continues its direction.

PENNANT

The Pennants are another example of the patterns that indicate continuation of the price. The bullish Pennant develops in an uptrend, while the bearish Pennant – in a downtrend.



The bullish Pennant starts with a sharp rise of the price. This is often referred to as the first flagpole of the pattern. Then follows a period of consolidation, where the price oscillates in a narrowing range (like a small triangle). This is the pennant. When the price breaks the upper trendline of the pennant, it shoots up to form the second flagpole.



The volume during the development of the pattern is very important. It should be high during the formation of the first flagpole, then it should decrease with the pennant and when the price breaches the resistance line, the volume should rise again.

SUMMARY

Understanding technical analysis is essential for your trading performance. It provides the tools, the technics and the methods that you need to be able to trade successfully. No matter whether you are a scalper or a position trader, the technicals will serve you well.

RISK AND MONEY MANAGEMENT

So far, we covered the most important aspects of the financial markets, the types of analysis used, and the indicators associated with those analyses. We went through the kinds of charts, chart patterns and the different types of orders. All this information is basal for every trader. But there is something more that makes the difference between a trader and a successful trader. These are the risk and money management rules.

KNOW THE RISKS

You must know the market you trade. You must know its specifics, and most importantly, you must understand the risks. The management of risk is a key factor in the forex trading systems.

An unprepared trader is as doomed as an unexperienced one. Luck may sometimes smile upon you, but it's far more reasonable to rely on solid principles, when it comes to managing your money.

MARKET RISK

This is the risk of the market performing differently from your expectations. Every market has its dynamics and failing to understand them can lead to unpleasant surprises. That is where fundamental and technical analyses play a key role.



COUNTRY RISK

Instability within a country can impact its currency. If some adverse event occurs or traders fear that something could happen, they might move out of a country's currency, which devalues it. This can happen fast and can leave you with open positions in a thin (illiquid) market.

DEVALUATION RISK

Some countries may intentionally devalue their currency, as part of their monetary policy. This is not a bad thing overall, nor it is unexpected (usually). Still, it might come as a surprise for the unprepared traders.

LIQUIDITY RISK

There are very liquid markets and markets that are far less liquid. The former provides smooth trading experience, fast order execution, minimal or no slippage. As for the latter, less liquidity might mean time delays and slippage in the execution price.

LEVERAGE RISK

Leverage is a very useful tool when applied wisely. Heavy leveraged positions lead to high risk of incurring larger losses. A volatile market may further increase the risk of receiving a margin call.

MATHEMATICAL EXPECTATION

The expected value (or mathematical expectation) of the trading strategy is very important. It puts into the equation not just the possible profit and loss, but also their relative probabilities.

The mathematical expectation refers to the very small risk to incur a very large loss. So, when considering a trade with just a small chance for a bad outcome, we should also bear in mind what would happen if that small chance hits us.



RISK OF RUIN

This is the risk of running out of capital to execute trades. This typically means that the trader is forced out of the market and the reason usually is that he did not utilize some measure, or rule, that was aimed at protecting him from this very risk.

RISK MANAGEMENT

The purpose of risk management is to minimize all the risks as much as possible. A trade with a high probability of profit, and zero risk is an extremely attractive idea, unfortunately it does not exist.

A well-developed risk management system is mandatory for a long-term successful trading. The rules need to be clear and most importantly, they need to be followed. It is up to every trader to decide those rules, still there are general principles that are valid for everyone in the markets.

EDUCATE

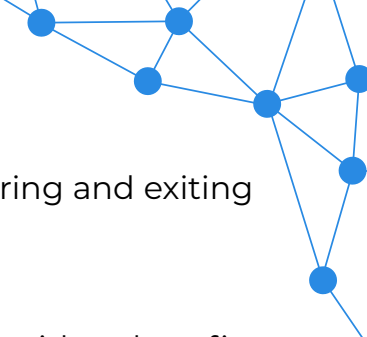
You need to educate yourself as much as possible. Financial markets are a complex, ever-evolving environment that requires your time and effort to get to know it.

It is always useful to go through the history of the asset you are about to trade. Examine, understand and prepare for the worst-case scenario. Events that lead to extreme movements may be sporadic, but they do give a view of what is possible in that market.

In fact, the process of educating yourself should never stop, because there is always some new lesson to be learned in these dynamic, fast-moving, high-technology markets. Don't expect to turn into an all-knowing expert, because the next thing you'll see, the moment you stop in this financial highway, is the other players zooming by.

HAVE A PLAN

The financial markets are not the place to trust your instincts. This is the place where



you must have a sound plan. You need to develop strict rules for entering and exiting positions and you need to comply with them at all times.

Invest enough time to develop profitable strategies. A strategy is considered profitable not when it turns every trade into profit, but when the long-term net effect is positive. Losing trades are part of the game and when you see your trade turn bad there's only one thing you must do – follow the plan.

BE REALISTIC

Setting realistic goals is essential. You should have a clear view of what you can expect from a trade. Over-expectations can lead to taking unnecessary risk, and that might turn a profitable trade to a loss.

Greed is the thing you should not let into the equation, because it will lead to poor trading decisions. Trading is all about opening the right trade at the right time and closing it in strict accordance with your rules. The temptation of leaving a profitable position just a little longer so that you can make more money of it, in the end, may cost you dear.


USE A STOP-LOSS AND A TAKE-PROFIT

The stop-loss and the take-profit orders are a very good option for managing the open position. It is advisable to use them as part of your risk management system, as they provide objective boundaries to the trade. The take-profit will close the position once the expected profit level is reached. And the stop-loss will protect you if the market moves against you.

Take caution if you decide to move them while the position is still open and make sure that this complies with your trading rules.

LIMIT THE LEVERAGE

Leverage is one of the most exciting opportunities that the financial markets offer. It can multiply the gains from a profitable trade. But it can also magnify losses.



That is why it is advisable to use leverage with caution. High leverage should be applied by experienced traders who can evaluate the risks, associated with margin trading, while more unexperienced traders should use leverage moderately and only when they have a clear understanding of the situation.

DIVERSIFY

A good way to manage the risk is by diversification of your portfolio. That would mean three things, if you incur loss for some reason. First, its just a part of your money that is in that market. Second, your other positions are safe from the circumstances that led to your loss. And third, you may even be lucky enough to cover it with profits from the other markets.

Diversification is not always the best choice, though. Novice traders should avoid it, as a start, and rather choose few (or even one) markets and study them thoroughly. Only when they have enough experience should they diversify.

DISCIPLINE

This is the single most important trading rule. No risk management system can help a trader who fails to follow his own rules. Discipline is the measure of success. This includes sticking to the strategy even when your instincts tell you otherwise.

There will always be wins and losses. Celebrating the profit is as easy, as denying the loss. Traders must learn to accept their mistakes and exit bad trades as quickly as possible, instead of stubbornly holding them in hope that they would turn to profit.

Loss does not mean failure in trading language. But, not taking the proper actions when the current trade is losing, does.

MONEY MANAGEMENT

When you consider all the risks and develop a proper risk management strategy, you are left with one last equally important step – to prepare your money management rules. They give a mathematical expression of your risk management system, with one



phrase standing above all.

DO NOT RISK MORE THAN YOU CAN ACCEPT TO LOSE

Money management refers to the optimal balance between the desired profit and the acceptable loss in a trading strategy. The trading strategy is not a single trade, but a trading pattern applied consistently in a given market over a period of time. Therefore, it's the net effect of the trading strategy that is evaluated through the money management system, not every single trade.

These systems focus on price and size, which makes them technical notions, rather than fundamental ones. They define the initial capital, the trade size, the asset, the trading style. All these issues depend on technical studies and the use of price action.

RISK : REWARD RATIO

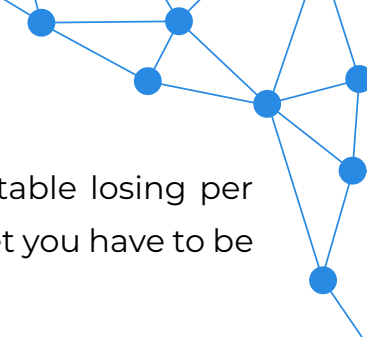
Risk to reward ratio is a basal aspect of money management. It represents the ratio between the risk you take when opening the position, and the expected profit.

These are usually implemented through the positioning of the stop-loss and the take-profit orders. The stop-loss level is the amount of loss you are willing to take, if the market moves against you, and the take-profit is the amount of profit that you believe is possible to obtain.

But the risk/reward ratio is much more than placing S/L and T/P orders. It is a property of the trading system itself. It shows the profit ratio over a series of similar trades. Measuring their net effect is how you can fully grasp its concept and take the full advantage of a good risk/reward ratio.

POSITION SIZING

Position sizing is a way to calculate your position size, depending on the amount of risk you accept to take. Or, in other words, you decide on the risk, and you adjust the size of the position in accordance with that risk.



The first step is to decide how much money you would be comfortable losing per single trade. This is not to say that you should always expect to lose, yet you have to be ready to accept that happening.

There are two ways to determine this. You can have a fixed amount that you would be risking with every trade. Or, you can determine a percentage of your total account balance. Usually, traders choose to risk no more than 1-2% per trade.

The second option is the more flexible one because as you win and your account grows, you automatically start trading with higher amounts. And the other way around, if you are losing, the method automatically reduces the amount at risk. Of course, you can always go with the first option and change the fixed amount whenever necessary.

To make things clearer, let's follow up an example. We have an account balance of \$ 5000 and we've decided to risk 1% of our account. This means that we are willing to risk \$ 50 for the trade.

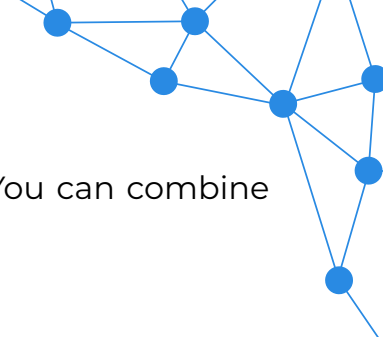
$$\text{Account risk} = \$ 5000 * 1 \% = \$ 50 \text{ maximum amount to risk}$$

The next step is to find a logical level for your stop-loss. This way of positioning your order gives you the opportunity to start exactly from where you don't want to end up. That is why choosing it wisely is very important. It should not be too close to the entry level, because this could end the position prematurely, but at the same time it must not be too far away.

For our example, let's assume that we are trading EUR/USD and we decide to put our stop loss at 1.1184 and to enter the market at 1.1234.

The difference between the entry level and the stop-loss level gives you the pips at risk.

$$\text{Trade risk} = 1.1234 - 1.1184 = 0.0050 \text{ (50 pips at risk)}$$



It is important to know the lot sizes that are available for trading. You can combine them to get the position size that serves your needs.

- 1 micro lot = 1 000 units; 1 pip = \$ 0.1
- 1 mini lot = 10 000 units; 1 pip = \$ 1
- 1 standard lot = 100 000 units; 1 pip = \$ 10

These calculations are valid for all currency pairs where USD is the quoted (the second) currency. They show that for every 1 pip movement in the price, you win / lose \$ 0.1, or \$ 1, or \$ 10, depending on what lot size you trade.

For our example, we decide to trade mini lots. From there we can calculate the size of the position.

$$\begin{aligned}\text{Position size} &= \text{Account risk} / (\text{Trade risk} * \text{Pip value for lot}) \\ \$ 50 / (50 \text{ pips} * \$ 1) &= 1 \text{ mini lot}\end{aligned}$$

If our position was to have a 25-pips stop and we decided to trade micro lots, the calculation would be:

$$\begin{aligned}\text{Position size} &= \text{Account risk} / (\text{Trade risk} * \text{Pip value for lot}) \\ \$ 50 / (25 \text{ pips} * \$ 0.1) &= 20 \text{ micro lots (or that's 2 mini lots)}\end{aligned}$$

Money management is an objective way to calculate the elements of a position. This is important in trading because these markets are no place for gambling. Computer technology can be very beneficial when it comes to money management. Position-size, Risk-reward and Money-management calculators are available to you and can easily do the math for you.

In fact, it is worth having a more automated trading system. It is only natural to try to keep your losses as small as possible, and profits as high. But meddling with your orders is usually not the best decision. In trading discipline is King. And everyone who fails to strictly follow his own rules, will end up on the wrong side of the statistics.



PSYCHOLOGY OF TRADING

Trading psychology refers to the emotional and mental state of traders, something that can at times drive the markets. It represents various aspects of the traders' character that influence their performance. Although each and every person in the markets is a different individual, there are some basic emotions that can describe the choices they make.

Fear and greed are two opposite to each other emotions that can harm a trader's performance. Fear would lead to prematurely closed out positions. Like a trader who, seeing his position turn to small profit, closes it before its full development. Trading is a rational process that is not for the faint-hearted.


Greed, on the other hand, leads to taking too much risk. This can be opening high-risk speculative positions, or not closing the position even when it reaches its profit target. It always feels nice to have a profitable trade, but self-control and discipline, and not greed, are the qualities that will contribute to your success.

MARKET SENTIMENT

The financial markets react to objective factors, such as interest rates, inflation, economic reports, etc. But because humans are those who make the decision to buy or sell, the markets are also influenced by more irrational factors, such as the human emotions. The emotions of all the traders in a market make up the market sentiment. When enough people feel the same way, they can move the price.

Sentiment can lead the price up, higher than the reasonable intrinsic value of an asset and cause a bubble. Or it can drive the price down, inviting panic to lead the way to a massive sell-off.

Of course, these are the extreme boundaries of what sentiment can do. Under more normal everyday conditions, sentiment acts more like a habit. If we consider an up-trend that has been developing well for some time but is beginning to lose strength, it might be sentiment that keeps the prices going a bit further up than they should.



There is also the basic human need to be part of the group. Let's imagine the traders in one room wondering whether to join the bulls or the bears. One decides to join the bears, two decide to join the bulls. The probability of the majority of traders joining the bulls exceeds by far the opposite option. Even those, who have initially chosen the bears are likely to turn to the other team.

To grasp the big picture, we must understand that price action is a balanced combination of facts and emotions. A trader has to have a good understanding of how sentiment influences the price, so that he takes a well-informed decision.

GOING AGAINST THE CROWD

Being part of the herd feels safe. Thankfully, there are individualists that look beyond the common truth and try to find a possibility before anyone else. These are well-prepared, experienced, informed players that often trade against the others. They trade with higher risk, but the prize is riding the wave from the first moment of its formation to the last.

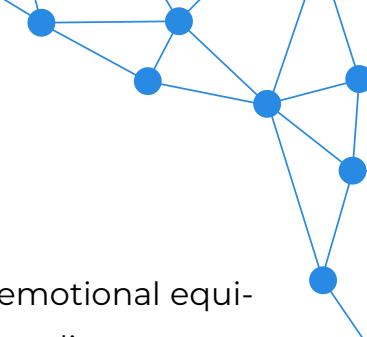
The best way, as usual, is the balanced way. Going along with the crowd is not a bad decision. But you have to keep your eyes open and analyze. When you see signals that the trend is about to change, you have to leave the group and follow your trading principles.

PROPER MINDSET

The greatest goal for every trader is to minimize the losses and maximize the profits. But to be able to achieve that, the trader must have the proper mindset when it comes to winning and losing.

It is a mistake to celebrate your victory, while ignoring the failure. The path to success goes through paying great attention to failure. It is how you react to it that could propel you forward.

Every trader will face a loss. The important thing is how you respond to it. Some would refuse to quit. They would continue trading, doubling their efforts to make up for the



loss, taking riskier and larger positions.

Others would stop trading for a while. They would try to regain their emotional equilibrium. They would be determined to not let frustration govern their trading.

Neither of those two attitudes describe the proper mindset. The best you can do is stop trading and stay with your charts. You must understand what went wrong, analyze, find the source of the poor trade, figure out your error.

Make use of your mistakes and turn them into something to learn from.

PURPOSE OF TRADING AND CHECKPOINTS

Once you have the proper attitude, you need to define your purpose of trading. You should have a general idea of where you are, what your plan is, and how you are going to achieve it.

First, you need to decide whether you'll trade for a living and trading will be your main source of income, or it will rather be a way to make some extra money, or maybe even trade for a hobby. Your trading style, strategies and profit targets should be set according to your general idea.

You should clearly define your long-term, end goal. You need to have a clear vision of what will be your definition for success. Staying positive is a good thing, and that means clear objectives and defined goals.

Dividing your long-term path into short-term checkpoints is very helpful. Instead of feeling frustrated or annoyed of not being there yet, you can define small steps towards success and celebrate each accomplishment along your way.



ALGORITHMIC TRADING

The financial markets are sophisticated systems. Everyone willing to succeed in trading needs to devote enough time to educate himself the general concepts, prepare himself by choosing a broker, opening an account, etc., and study the market that he is about to enter.

It all pays in the end. An experienced trader is able to successfully navigate through the markets and enjoy the results of his hard work and devotion.

But the technological advance that led the markets into the digital era provides one more, different and new path to success. It introduces the smart way of trading in the markets. It combines all the theories, analyses, experience and codes them into computer algorithms.

Algorithmic trading, as the name suggests, is computer-coded algorithms that automate the process of buying and selling FX and cryptocurrency pairs, stocks, options, futures. It is becoming increasingly popular, along with electronic trading, and accounts for a good deal of all trading activities in developed markets.

The algorithm is a piece of computer code that follows a set of predefined rules and accordingly executes predefined steps. Every trading strategy could be turned into an algorithm, as long as there is sound mathematical logic behind it. It can be programmed to look for all kinds of variance in price, volume, indicator readings, time and uses technical analysis, indicators, charts, etc. Once the predefined criteria have been satisfied, a buy or sell order can be executed.

For an algorithmic system to be successful, the defined rules must be unambiguous and absolute. An essential part of the algorithm making is testing it on historical data to determine its viability. This allows the fine-tuning of the system and the estimation of its success rate.

Algo trading can be used manually or in an automated fashion. It can generate and send signals when certain conditions have been met, so that the trader can execute a deal. Or the process can be automated so that the generation, submission and execu-



tion of orders is done automatically (a.k.a. Automated trading).

According to the holding time of the trades, trading strategies can be categorized as low-frequency, medium-frequency and high-frequency strategies. HFT is the top achievement of Automated trading. These are algorithmic strategies that execute trades on a sub-minute time scale. The holding time of the trade is very short, the profit – very small, but the number of executed trades per day is in the millions. Algorithmic trading holds many advantages over manual trading.

- No emotions are involved in the decision-making process and emotions are something that quite often leads to poor results.
- As the computer program cannot push the wrong button, there is zero probability for human error.
- The algo trading systems monitor the markets non-stop, 24/7. They do not take naps, do not look away for a second, do not get bored.
- Many markets can be scanned simultaneously for good trading opportunities.
- There are strict risk management rules, coded into the algorithm itself and following them is not a matter of will, temperament or desire.
- All rules are predefined and backtested.
- Algo trading provides precise timing for placement of orders, as well as other parameters of the trade, like stop-loss and take-profit. The algorithm is able to place the order with a much better precision and in a matter of seconds.
- There is no chance for an information overload, fatigue, distraction. The algorithm can easily take in as much information as needed and process it instantaneously.
- Significantly reduces the level of experience and knowledge needed for a successful trading career.

Because computers respond so much faster and better than humans, it would be safe to say that algorithmic trading is the future. The automated systems react immediately to the changing market conditions. They are able to place the order, including the protective stop-loss and the profit-target, with precision and speed unattainable to a human trader.

In this fast-evolving world of technology, it takes an algorithm to have the edge.